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ABSTRACT BOOK

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Oral Presentation Session

Surgical Techniques and Outcomes in Coronary Bypass Surgery

Date: 06.06.2024 Time: 12:15 – 13:15 Hall: 5

ID: 73

Topic:

Cardiovascular Surgery > Coronary bypass surgery

Presentation Type:

Oral Presentation

Immediate results of coronary bypass grafting using the "without touching the aorta" technique in patients with multivessel disease: a single-center retrospective study of 707 patients

Assoc. Prof. Vladimir Kolesnikov[*] [1] , Assoc. Prof. Soslan Enginoev[2] , MD Alexandr Ziankou[1] , Assoc. Prof. Madian Mohamed Hassan[3] , Assoc. Prof. Muminat Dzhambieva[3] , Assoc. Prof. Nargiz Ramazanova[3] , Assoc. Prof. Igor Chernov[1]

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Objective of the study: to analyze the immediate results of coronary bypass grafting using the "no touch aorta" technique in patients with multivessel coronary artery disease.

Material and Methods: The retrospective study included 707 patients (625 men and 82 women) with multivessel coronary artery disease. The median age of patients was 61 (55-66) years. 105 (14.9%) had a history of percutaneous intervention, 21.9% of patients had diabetes mellitus. Inclusion criteria: patients aged 18 years and older, coronary bypass surgery using the "No touch aorta" technique. Exclusion criteria: single-vessel lesion, use of cardio-pulmonary bypass, repeated operations, combined operations with the carotid arteries. Endpoints: in-hospital mortality and postoperative complications (stroke, sternal infection, perioperative myocardial infarction, acute kidney injury, reexploration for bleeding).

Results: minimally invasive approach was used in 150 (21.2%) cases. Aortic calcification was observed in 195 (27.6%) patients. Bimammary bypass surgery was performed in 394 (55.7%) cases. Complete arterial revascularization – in 478 (67.6%) patients. Sequential bypass surgery was used in 257 (36.4%) cases. The number of distal anastomoses was 2 (2-3). The duration of the operation is 160 (140-190) minutes. In the postoperative period, perioperative myocardial infarction was not observed in any patient, the incidence of stroke was 0.8%, acute kidney injury - 1.3%, reexplosion due to bleeding - 0.8%. Hospital mortality was 0.8%.

Conclusions: The “no touch aorta” CABG technique, avoiding any manipulation of the aorta, is an effective tool for minimizing the risk of early strokes during CABG and, therefore, should be considered as a routine approach in patients with atherosclerotic aortic lesions.

Keyword: *CABG, No touc aorta, OPCAB*

ID: 1

Topic:

Cardiovascular Surgery > Coronary artery disease - CABG surgery

Presentation Type:

Oral Presentation

BILATERAL MAMMARY ARTERY IN WOMEN FOR SURGICAL TREATMENT OF CORONARY ARTERY DISEASE: A RETROSPECTIVE STUDY.

Assoc. Prof. Mikhail Fomenko*, Prof. Yuri Schneider, Assoc. Prof. Victor Tsoi
Cardiovascular Surgery

Background: Many retrospective articles documented better long-term survival and results when compared bilateral internal mammary artery (BIMA) to a LIMA. But data results of application BIMA on women is scarce.

The aim: to evaluate results of use BIMA for surgical treatment of coronary artery disease in women.

Material and methods: Retrospectively from October 2012 to December 2023 were analyzed for inclusion 5602 patients who underwent CABG. The study included 1198 (21.4%) cases (use BIMA in women for CABG). Primary endpoint was mortality and secondary endpoints were myocardial infarction, stroke and wound infections. Mean age was 64.9 ± 14.2 years (from 46 to 80 years). Mean EuroSCORE II: 2.3 ± 1.4.

Results: Hospital mortality in group was 0.6% (7 patients). Operations was performed off pump in 37% cases, supported on pump in 12.5% and on pump with cardioplegya in 50.5% cases. Procedure-related complications as: postoperative bleeding – 1,7% (21 patients), wound infection - 1.0% (12 patients) and stroke - 0.1% (1 patient). Mean time in intensive care was 1,7 ± 0,7 days. Mean time hospitalization was 10.9 ± 1.2 days. Mean follow-up period for group was – 68.4 months (95% CI 65.1–66.7). Survival estimate by Kaplan-Meier method showed 36-month survival of 94.8% (95% CI 93.1-97.4), 60-month survival of 85.3% (95% CI 83.2-88.5).

Conclusion: Application of BIMA in women for myocardial revascularization is effective and safe procedure who demonstrates good results the surgical treatment of coronary artery disease.

Keyword: *coronary artery disease, coronary artery bypass grafting, heart failure*

ID: 14

Topic:

Cardiovascular Surgery > Coronary artery disease - CABG surgery

Presentation Type:

Oral Presentation

SUCCESSFUL COMPREHENSIVE SURGICAL MANAGEMENT STRATEGY FOR COMBINED CORONARY ARTERY DISEASE(CAD) AND PERIPHERAL VASCULAR DISEASE(PVD)-SHARING LONGTERM EXPERIENCE

MD MD. FAIZUL ISLAM[*] [1] , MD MEHDI HASAN MOZUMDER[2] , Prof. ABUL HASAN MOHAMMAD BASHAR[1] , Prof. MD KAMRUL HASAN[1]

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BACKGROUND:

Combined coronary artery disease(CAD) and Peripheral vascular disease(PVD) are highly prevalent in our set up and share common risk factors for atherosclerosis. Comprehensive management patients with CAD and PVD is never easy rather it is a common challenge and brings with it numerous clinical dilemmas. Careful perioprative evaluation of the severity of disease in both coronary and peripheral circulation(lower extremity, aortic or carotid artery) along with identification of co-morbiditiesis is required to empathetically manage the issues and plan time of surgical revascularization for severe CAD and PVD.

METHODS:

In last 12 years from January 2013 to January 2024 we managed 60 patients with combined CAD and PAD, also 10 cases with combined CAD with carotid artery disease, underwent CABG with carotid angioplasty with or without CEA; and 60 cases with combined CAD and lower extremity PVD underwent CABG with peripheral revascularization surgery as a single stage surgical strategy.

RESULTS:

There were 12 female(17.2%) and 58 male(82.8%) and age ranged from 42 to 72 yrs. Almost all were type 2 diabetic(92%), either non smoked tobacco intaker or frank smoker(90%),, having sedentary lifestyles(86%), Hyperlipidemic or dyslipidemic(83%), hypertensive(84%), hypothyroidism(65%) and have elevated C-reactive protein(96%) andof low socioeconomioc status living among crowded area exposed both air and sound pollution.

Among the female patients there was history of oral contraceptive pill intake for more than 10 yrs(90%) and non smoked tobacco intake (96%) and frank smoker (60%) and obesity(80%). All the patients were operated on off pump strategy of CABG and 7 patients

required conversion to on pump beating for graftingLCX territoryfor CAD , and for carotid artery disease mainly done PTFE path arterioplasty with CEA. For PVD mainly used RSVG (80%), Dacron or PTFE tube graft (10%) and long segment endarterectomy with on lay venous patch angioplasty(10%). Perioperative mortality was 3% and immediate and long term survival with improved quality of life was satisfactory.

CONCLUSIONS:

Single surgical intervention for a subset of patients with combined CAD with PVD(Aortic, carotid and lower extremity) is feasible, safe and rewarding as far as improvement in quality of life is concerned. As a surgeon close collaboration between internists, cardiologists,vascular surgeons,perfusionists,neurologists,and above anesthetists is the key to the successful management of such patients.

ID: 23

Topic:

Cardiovascular Surgery > Coronary artery disease - CABG surgery

Presentation Type:

Oral Presentation

Surgical management for coronary artery aneurysm: series of 3 cases

MD Ankit Maheshwari* , Assoc. Prof. Ashish Dolas , Assoc. Prof. Ranjit Pawar , Prof. Anurag Garg
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Coronary artery aneurysm is a rare anomaly with coronary artery disease being the most common etiology. Untreated coronary artery aneurysms can present with complications such as thrombosis, calcification or rupture. The modes of treatment for these aneurysms as described in the literature are surgery, stenting, and medical management. However, management of these aneurysms are always a surgical dilemma. We present a series of 3 peculiar cases of coronary aneurysms with coronary artery disease managed surgically.

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Baker DW, Whitehead NJ, Barlow M. Mycotic Coronary Aneurysms. Heart Lung Circ. 2020;29:128-36. doi: 10.1016/j.hlc.2018.12.004.
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Keyword: *Coronary artery aneurysm, mycotic coronary aneurysm, coronary artery disease*

ID: 44

Topic:

Cardiovascular Surgery > Coronary artery disease - CABG surgery

Presentation Type:

Oral Presentation

OPEN CORONARY ENDARTERECTOMY TO LAD IN CABG SURGERY: THE IMPACT OF SURGICAL GRAFTING TECHNIQUE OF LIMA-TO-LAD ON EARLY CLINICAL OUTCOME AND MID-TERM ANGIOGRAPHIC PATENCY.

MD MUHAMMED TAMIM* , MD Khaled AlFaraidy , MD Yaser ElKadi
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BACKGROUND: to evalute the impact of technique used to perform the LIMA-to-LAD anastomosis following open coronary endarterectomy (CEA) to LAD.

METHODS: Between 2010 and 2022, 100 consecutive patients underwent CABG with open CEA utilizing CPB and cardioplegic arrest. These patients were divided in two groups: Group A (n=68) the LIMA was directly anastomosed to LAD; in Group B (n=32) the LIMA was anastomosed to a SVG patch that was first placed on the endoarterectomized LAD. A postoperative coronary or CT angiogram was performed in 88 patients (61 in group A and 27 in group B) at a mean time of 3 years.

RESULTS: The groups had similar preoperative demographic/clinical characteristics ($p<0.05$). Hospital mortality (2%), ICU/hospital stay, and major morbidity rates were comparable ($p<0.05$). However, graft failure rate (stenosis at the LIMA-to-LAD anastomosis of at least 50%) was significantly lower in group A (3%,2 out of 66) than in group B (70.3%,19/27) ($p<0.0001$). In multivariate analysis, anastomosis of LIMA to the SVG patch (to LAD) was the only independent adverse predictor of LIMA-to-LAD patency ($p<0.0001$).

CONCLUSIONS: Open CEA to LAD is safe regardless of the grafting LIMA-to-LAD technique. However, direct anastomosis of LIMA to LAD provides significantly superior patency than the anastomosis of LIMA to SVG patch (Placed to endoarterectomized LAD)

ID: 47

Topic:

Cardiovascular Surgery > Coronary bypass surgery

Presentation Type:

Oral Presentation

Arteriovenous I-graft Fo Revascularisation Of Right Coronary Artery - Mid-term Results

Prof. Vladlen Bazylev* , Assoc. Prof. Dmitriy Tungusov , Assoc. Prof. Artur Mikulyak
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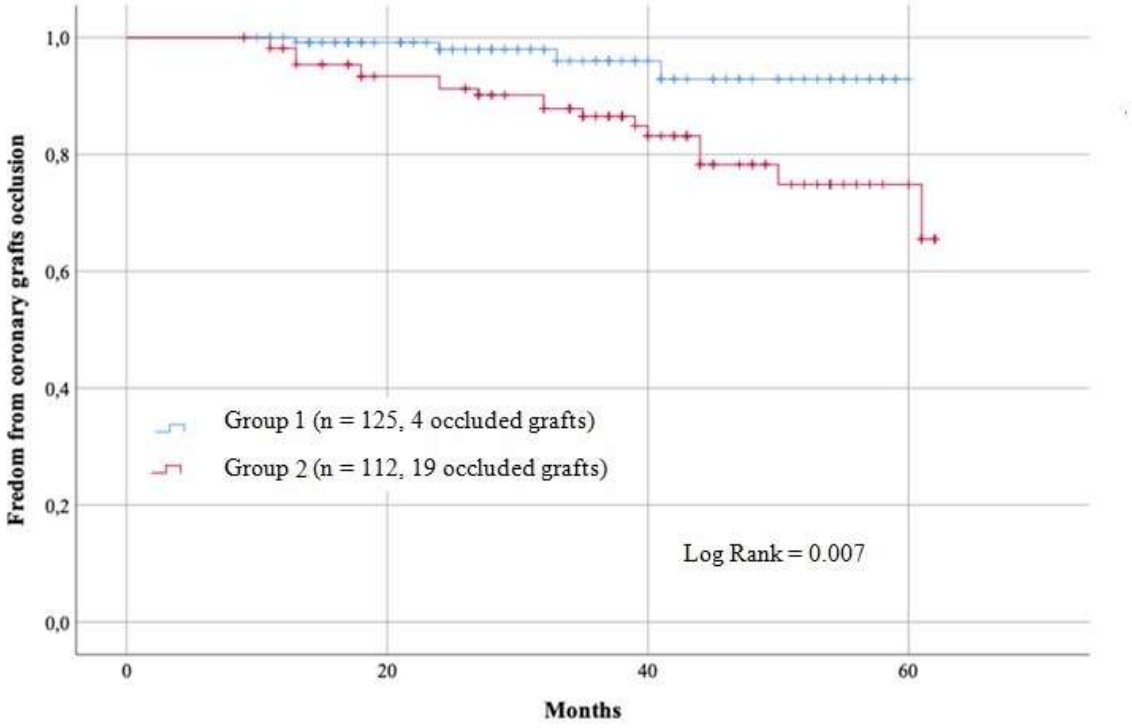
BACKGROUND. Current ESC/EACTS recommendations for myocardial revascularization indicate the advantage of arterial bypasses, especially when bypassing the left coronary artery (LCA) [1]. However, the question remains regarding the method of revascularization of the right coronary artery (RCA) in case of three-vessel disease. The left and right coronary systems demonstrate differences in physiology and in the nature of atherosclerotic lesions, so the choice of bypass tactics cannot be a simple extrapolation of the results of LCA revascularization [2]. Of the existing methods, the most popular methods of RCA bypass surgery remain to be coronary artery bypass grafting using the saphenous vein graft. According to M.Calafiore when anastomosing the SVG with IMA, it is positive and the patency is expected [3]. In our medical organization we routinely use this method. In the presented study, we conduct a comparative analysis of the mid-term results of RCA bypass surgery using combined I-grafts and coronary artery bypass grafting (using venous graft from the aorta). METHODS. This retrospective single-center study included 237 patients who underwent isolated CABG. All patients with two- and three-vessel coronary disease who underwent revascularization of the RCA using SVG anastomosed to aorta or combined I-graft (SVG anastomosed to the stump of the right internal thoracic artery). Group 1 included 125 patients who underwent bypass grafting of the RCA or its branches using a combined I-graft. The second one included 112 patients who underwent revascularization of the RCA or its branches using SVG anastomosed to aorta. The follow-up period was up to 62 months (30±13.4 months).

RESULTS. During the observation period, there were 19 (17%) occluded venous grafts anastomosed to aorta and 4 (3.2%) occluded combined I-grafts. Kaplan-Meier analysis demonstrated significant differences in the frequency of occlusion among different types of conduit (Log Rank=0.07).

CONCLUSION.



I-grafts provide better results of RCA revascularization (Log Rank=0.07).

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Keyword: *right coronary artery, combined arteriovenous I-graft, coronary artery bypass grafting*

ID: 165

Topic:

Cardiology > Cardiac imaging - Cardiac MRI

Presentation Type:

Oral Presentation

Comparative analysis of the results of myocardial revascularization in patients with ischemic left ventricular reduced ejection fraction depending on the presence of viable myocardium.

Assoc. Prof. Galib Imanov* , Assoc. Prof. Yasmin Rustamova , Prof. Vasadat Azizov , Prof. Isfandiyar Ismayilov

Azerbaijan Medical University

Backgorund : Benefits of revascularization of patients with ischemic reduced left ventricular (LV) function remain challenging. The role of viable myocardium as a predictor of LV ejection (LVEF) improvement is still controversial. The aim of this study was to compare the results coronary artery by-pass and PCI in patients with reduced LVEF depending on the presence of viable myocardium.

Methods: A total of 388 patients with impaired LV systolic function of ischemic origin were included. Acute coronary syndrome, ICD and CRT, acute kidney disease, oncological statement were the exclusion criteria. Viable myocardium was defined as a dysfunctional myocardium with no or <50% of extension of fibrosis assessed by CMR. Follow-up was at 24 months from the randomization. Outcome include myocardial infarction (fatal and non-fatal), repeated intervention, quality of life and survival.

Results: 2 groups were formed. l group (N=164; 56% PCI, 44% CABG) was prospective with the presence of viable myocardium. Group ll (N=224; 55% PCI, 45% CABG) was retrospective with no assessment of viable myocardium. Depending on volume of revascularization in each subgroups were formed: A1 (N=98; 60 by PCI, 38 by CABG) with anatomically complete revascularization (aCR) and B1 (N=66; 32 by PCI, 34 by CABG) with anatomically incomplete revascularization (aIR). In group 2: A2 (N=136; 84 by PCI, 52 by CABG) with aCR and B2 (N=88; 38 by PCI, 50 by CABG) with aIR. Comparative analysis by the 24 month didn't show any significant difference in terms of myocardial infarction both fatal and non-fatal (1,9% vs 4,5% p>0,05). But re-intervention rate was higher in the group II (3,8% vs 15,8% p=0,0001). Besides this hypothesis is confirmed by the results of the Caplan-Meier analysis, which showed better prognosis of patients with myocardial viability-guided revascularization.

Conclusion: Among patients with severe ischemic LV systolic dysfunction the myocardial viability assessment before the revascularization demonstrates better quality of life, reduced number of rehospitalization and readmission at the hospital for interventions.

Oral Presentation Session

Novelties in Mitral Valve Surgery

Date: 06.06.2024 Time: 13:15 – 14:15 Hall: 5

ID: 105

Topic:

Cardiovascular Surgery > Mitral valve surgery

Presentation Type:

Oral Presentation

MINIMALLY INVASIVE SURGICAL APPROACH IN THE TREATMENT OF MITRAL AND AORTIC VALVE PATHOLOGY

MD Andrey Marchenko* , MD Pavel Myalyuk , MD Vagram Arutyunyan , MD Bakytbek Kadyraliev , MD Alexey Petrischev , MD Vyacheslav Belov

Federal center of cardiovascular surgery n.a. S.G. Suchanov, Perm, Russian Federation

Objective

To study and analyze perioperative and hospital results of treatment of patients with the use of mini-invasive surgical technique in the treatment of mitral and aortic valve pathology.

Methods

The results of treatment 93 patients who underwent minimally invasive surgical approach in treatment of mitral and aortic valve pathology were analyzed in the FCCVS n.a. S.G. Suchanov. There were 37 patients with Mitral reconstruction through a right-sided minithoracotomy, and 56 patients who underwent aortic valve prosthesis through mini-J sternotomy.

Patients who underwent minimally invasive surgical approach had isolated lesions of the aortic or mitral valve. We consider relative contraindications for minimally invasive access: low contractility of the left ventricle, high pulmonary hypertension, severe respiratory failure.

In the group of patients with mitral valve reconstruction the average age of patients was 59±10 years, men 53%, diabetes mellitus occurred in 14% of patients. In the group of patients with aortic valve reconstruction, the mean age was 62±12 years, males 60%, diabetes mellitus occurred in 12% of patients.

Patients with mitral valve reconstruction were accessed through a right-sided minithoracotomy of 8-10 cm, and the CPB was connected through femoral cannulation. In patients with aortic valve intervention the access was performed through a mini-J sternotomy,

the CPB was connected by the classical technique - arterial cannula into the aorta, venous cannula into the right atrium.

Results

There was no hospital mortality in both the mitral valve reconstruction and aortic valve groups. In the group after mitral valve intervention after plastic, the consistency of the surgical plastic was 100%. No strokes and myocardial infarcts were detected. The hospitalization period in patients of both groups in comparison with patients who underwent standard sternotomy decreased by 3.5±0.4 days.

Conclusions

Mininvasive approach in treatment of patients with mitral and aortic valve pathology is as effective as full sternotomy. This approach does not worst and the results of the operation are allowing to reduce the terms of hospitalization and rehabilitation of the patient.

Keyword: *MINIMALLY INVASIVE SURGICAL, minithoracotomy, mini-J sternotomy*

ID: 81

Topic:

Cardiovascular Surgery > Minimally invasive mitral valve surgery

Presentation Type:

Oral Presentation

ISOLATED MITRAL VALVE AND COMBINED MITRAL AND TRICUSPID VALVE REPAIR VIA RIGHT SIDED MINI-THORACOTOMY VERSUS CONVENTIONAL STERNOTOMY: BLOOD LOSS AND BLOOD COMPONENTS TRANSFUSION COMPARISON STUDY.

MD Ruslan Lazarev , MD Farid Khammud* , Prof. Sergey Rychin , MD Vasily Tereshchenko , MD Vladislav Savchenkov , Prof. Konstantin Shatalov , Prof. Elena Golukhova

A. N. Bakulev National medical research center for cardiovascular surgery of the Russian Ministry of Health, Moscow, Russia.

Video-assisted mitral valve repair via right sided mini-thoracotomy has shown to be effective due to its superiority in lower surgical trauma, lower blood loss, rapid rehabilitation and cosmetic effect. However, it is still debatable if its benefits outmatch drawbacks such as longer CPB and aortic cross-clamp.

Objectives: To access minimally invasive mitral valve surgery (MIMVS) effectiveness in intra- and postoperative blood loss reduction.

Methods: From March 2022 to March 2024, 42 patients underwent mini-thoracotomy and 35 underwent median sternotomy. Among the operated MIMVS patients, 25 (60%) were women, mean age was 49±10.6 years (from 28 to 65 years). In conventional group 11 patients were men, mean age was 58±7,7. The average EuroSCORE II was 1.23% and 3.28% respectively. All patients were in NYHA III/IV class in both group.

In MIMVS group 29 patients had multicomponent mitral valve repair, 13 patients had mitral valve replacement and in 15 patients mitral valve surgery was accompanied by tricuspid valve repair. One patient required conversion and zero lethality was observed. In conventional group 7 patients had multicomponent mitral valve repair and 28 patients had mitral valve replacement. One patient died. The average CPB time was 180±40 minutes (from 125 to 299 minutes) in group MIMVS and in conventional mitral valve surgery it was 135±30 minutes (from 90 to 220 minutes). The average aortic cross-clamping time in MIMVS was 129± 24 minutes (from 80 to 226). In conventional group it was 82±24 minutes (from 47 to 127). Before surgery MIVMS, patients had an average hemoglobin value of 131±27 g/l. On the other side in group of median sternotomy before surgery hemoglobin value was 130±17 g/l.

Results: In MIMVS and conventional groups intraoperative blood loss was 350±187 ml and 537±250 ml respectively. 3 (7,1%) patients needed blood transfusion in MIMVS group and 9 (25%) in conventional group. The average blood loss through drainage tubes in the ICU was

179±116 ml and 350±170 ml. Before transfer from the intensive care unit (ICU) to the ward, the average hemoglobin was 116±12 g/l and 106±15 g/l.

Conclusion: Video-assisted surgery via mini-thoracotomy proved to be effective in preventing intra- and postoperative blood loss due to the absence of median sternotomy and reducing the aggression of the intervention. Increased CPB time did not course significant hypocoagulation which inflated blood loss and frequency of re-explorations.

ID: 102

Topic:

Cardiovascular Surgery > Minimally invasive mitral valve surgery

Presentation Type:

Oral Presentation

MINIMALLY INVASIVE MITRAL VALVE SURGERY THROUGH TRANSAXILLARY THORACOTOMY UNDER "DIRECT VISION"

MD Oleg Kulumbegov* , MD Alexey Kuznetsov , MD Evgeny Kobzev , MD Iliya Karpov , Prof. Evgeny Rosseykin

Federal State Center of Cardiac Surgery of the Ministry of Health of Russian Federation (Khabarovsk)

BACKGROUND. To evaluate results of mitral valve correction through transaxillary mini-thoracotomy.

METHODS. We analysed the results of 30 cases of the MV surgery at our hospital in the period from September 2021 to August 2023. There were 19 (63.3%) women and 11 (36.7%) men. The average age was 48.1±18.8 years. The BMI was 24.8±6.3. In the most cases, a mitral regurgitation was the reason for hemodynamic variant of MV disease - 27 patients (90%). According to the NYHA classification, patients were distributed as follows: II NYHA – 21 (70%) patients, III NYHA – 9 (30%) patients.

The cardiopulmonary bypass (CPB) was conducted maintaining normothermia after cannulation of the common femoral artery and the femoral and jugular veins and, using trans-oesophageal (TOE) guidance after surgical cut-down. With the patient in supine position, a 6 cm skin incision was made in the right anterior axillary line at the level of the 4th intercostal space. A soft tissue retractor was used to limit rib spreading. After that we started CPB and opened the pericardium. The aorta was occluded with Chitwood clamp introduced through additional 0.5 cm access at the 3th intercostal space; the heart was arrested with antegrade cardioplegia “Custodiol”.

No additional video-assisted equipment was used in the presented study. All operations were performed under direct vision.

RESULTS. 22 (73.3%) MV repair patients, 8 of them with reconstruction of the MV leaflets. In 7 (23.3%) cases, MV replacement with mechanical prostheses were performed. In one (3.3%) patient, mitral valve repair was performed concomitant with suturing of an atrial septal defect. The average CPB time was 121.5±24.3 minutes. The average cross-clamp time was 83.3±20.1 minutes. The average operation tine was 255.1±30.7 minutes. The average duration of stay in the intensive care unit (ICU) was 19±7 hours. The average postoperative bleeding was 206.7±141.3 ml. There were no conversions or redo procedures. The average duration of treatment in the cardiac surgery department was 9.1±1.8 days. There were no

hospital and 30-days mortality. According to the transthoracic (TTE) echocardiogram, all patients did not have regurgitation more than 1 grade.

CONCLUSIONS. Minimally invasive transaxillary access in the 4th intercostal space provides optimal visualization of the mitral valve, allowing to perform the entire range of both repair and replacement of the MV without using additional video-assisted systems. This mitral valve surgery approach was associated with no in-hospital or 30-days mortality and has low rate of major postoperative complications The preservation of the chest skeleton, minimally postoperative blood loss, the absence of the complications associated with traditional full sternotomy, and early activation of the patients were furthermore associated with an enhanced rehabilitation.

Keyword: *transaxillary, direct vision, MV surgery*

ID: 21

Topic:

Cardiovascular Surgery > Minimally invasive mitral valve surgery

Presentation Type:

Oral Presentation

Silicone Breast Reimplant and Mitral Valve Surgery

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Silicone Breast Reimplant and Mitral Valve Surgery

Objective: Mitral valve regurgitation (MR) is an important clinical condition that can cause many consequences, from serious complications to death. In this study, a case with bilateral silicone breast implants and mitral valve replacement was presented. Due to the patient's cosmetic concerns, it was decided to perform the surgery via thoracotomy instead of sternotomy. During the surgery, breast implants were removed by plastic and reconstructive surgeons, and valve replacement was performed by us. The breast implants were then implanted in their original location by the plastic and reconstructive surgery team.

Methods: A 48-year-old female patient was admitted with complaints of dyspnea for approximately 3 months. She had a history of type 2 diabetes and bilateral breast implants. There was no feature in his family history. In TTE, mitral regurgitation was reported as 3-4, tricuspid regurgitation as 1-2, pulmonary artery pressure as 45 mmHg, and left atrium diameter as 4.6 cm. Coronary angiography was normal. Since the patient had a breast implant and had cosmetic concerns, it was decided to perform the operation via thoracotomy. Plastic and reconstructive surgery was consulted for removal and reinsertion of breast implants. Under general anesthesia, the plastic surgery team made an appropriate incision in the scar tissue under the right breast. The breast prosthesis was removed without any problems and the case was taken over by cardiovascular surgery. It was entered through a right anterolateral thoracotomy in the left lateral decubitus position, through a submamarial incision, at the level of the 4th intercostal space. No. 33 carbomedics brand mechanical mitral valve antianatomical was placed. The breast prosthesis, which was removed subcutaneously, was re-implanted by the plastic surgeon. The incisions were closed properly. During the patient's follow-up, there were no problems with the thoracotomy attempt and breast implants.

Results: Today, due to increasing aesthetic concerns, different surgeries are performed at an early age. Organic pathologies that occur in later ages lead to the need for second and more surgeries. As it is known, the risk increases in subsequent surgeries and requires the collaboration of different clinics. In recent years, there has been an increasing number of malpractice lawsuits against physicians. Aesthetic concerns are at the forefront in most of

these cases. Good communication and good cooperation between clinics are required for successful results and to avoid being exposed to judicial processes.

Keyword: *Silicone Breast, Mitral valve regurgitation, Mitral valve replacement*

ID: 27

Topic:

Cardiovascular Surgery > Medical and surgical treatment of heart failure

Presentation Type:

Oral Presentation

Septal myectomy without correction of moderate and severe mitral regurgitation

Prof. EVGENY ROSSEYKIN*, MD EVGENY KOBZEV
Federal Center for Cardiovascular Surgery (Khabarovsk)

BACKGROUND

Septal myectomy (SM) is the gold standard treatment option for patients with hypertrophic obstructive cardiomyopathy (HOCM) whose symptoms do not respond to medical therapy. Extended SM adequately relieves left ventricular outflow tract (LVOT) gradients, abolishes systolic anterior motion (SAM) of the mitral valve and improves mitral regurgitation (MR). However, in patients with moderate and severe mitral regurgitation remains controversy regarding the necessity of mitral intervention at time of SM. In this study, we investigated short-term outcomes of SM without correction of moderate and severe mitral regurgitation.

METHODS

From January 2019 to January 2024, 207 adult patients underwent transaortic SM in our Center. Of these, 119 patients who underwent isolated SM were included in the study. Inclusion Criteria: age 18 years or older, septal thickness ≥15 mm, resting/provoked peak Doppler LVOT pressure gradient ≥ 50 mm Hg. Exclusion Criteria: concomitant coronary artery disease requiring CABG, organic valvular heart disease requiring intervention. 119 patients were divided into two groups: group 1 (n=36), patients with no or mild MR; group 2 (n=83), patients with moderate to severe MR. The primary endpoint was the severity MR after SM. Secondary endpoints included postoperative complications, residual LVOT gradient ≥ 30 mm Hg, residual SAM.

RESULTS

There was no residual mitral regurgitation in the group 1, while 9% of patients in the group 2 had moderate mitral regurgitation. In group 2, the mortality rate was 1.3% (1 patient), in group 1 there were no deaths. There were no cases of acute ventricular septal defect. Complete atrioventricular block requiring permanent pacemaker occurred in 2 patients (5,6%) in the group 1 and 6 patients (7,2%) in the group 2 (p=0,74). There were 2 patients (5.6%) in the group 1 and 4 patients (4,2%) in the group 2 with residual LVOT obstruction (>30 mm Hg) at discharge (0,87). Residual systolic anterior motion syndrome was observed in 5,6% and 8.4% of patients, respectively (p=0,58).

CONCLUSIONS

Consequently in most patients with HOCM and moderate/severe mitral regurgitation not due to organic mitral valve lesion, isolated septal myectomy relieves left ventricular outflow tract gradients, systolic anterior motion of the mitral valve, and associated mitral valve regurgitation

Keyword: *septal myectomy, mitral regurgitation, systolic anterior motion, hypertrophic obstructive cardiomyopathy*

ID: 152

Topic:

Cardiovascular Surgery > Other

Presentation Type:

Oral Presentation

Our Experiences With Transseptal Myxoma Excision

MD İsmail Olgun Akkaya*
Türkiye

OBJECTIVE : Evaluation of clinical results in patients operated on through thoracotomy and transseptal approach with the indication of left atrial myxoma.

METHODS : Between June 2019 and June 2023, 4 patients diagnosed with left atrial myxoma underwent surgery. These patients were evaluated retrospectively and the demographic characteristics, surgical approaches and clinical outcomes of the patients were examined.

RESULTS : One of the patients was male and the average age was 56,6 ± 15,3 years.The reason for admission to the hospital was CVO in one patient and symptoms of mitral insufficiency in the other patients. In all of them, the location of the tumor was the left atrium. Sternotomy and left atriotomy were performed in 1 patient. 1 patient underwent sternotomy and transseptal approach. Right thoracotomy and transseptal approach were performed in 2 patients. Atrial fibrillation developed in one patient in the postoperative period, and no permanent pacemaker was implanted in any patient. No mortality was observed during postoperative and long-term follow-up. No recurrence was observed during long-term follow-up. Moderate MR and advanced TR were detected in one patient.

CONCLUSIONS : Although myxomas are benign tumors, early surgical treatment is recommended due to their various complications. The transseptal approach may be recommended for the excision of myxoma attached to the interatrial septum. Myxoma can be easily accessed in patients planned for minimally invasive right thoracotomy. Determining the localization of the tumor in preoperative TTE and prioritizing the selection of the appropriate dissection plan for atriotomy is important for complete tumor removal and surgical success.

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ID: 139

Topic:

Cardiovascular Surgery > Adult congenital heart disease

Presentation Type:

Oral Presentation

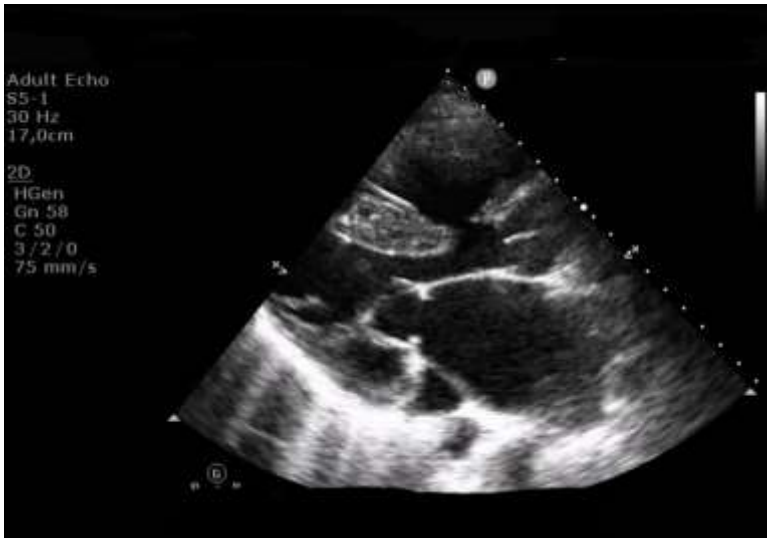
An echocardiographic case of congenital supravalvar mitral ring, “parachute” mitral valve associated with a large VSD in an adult male.

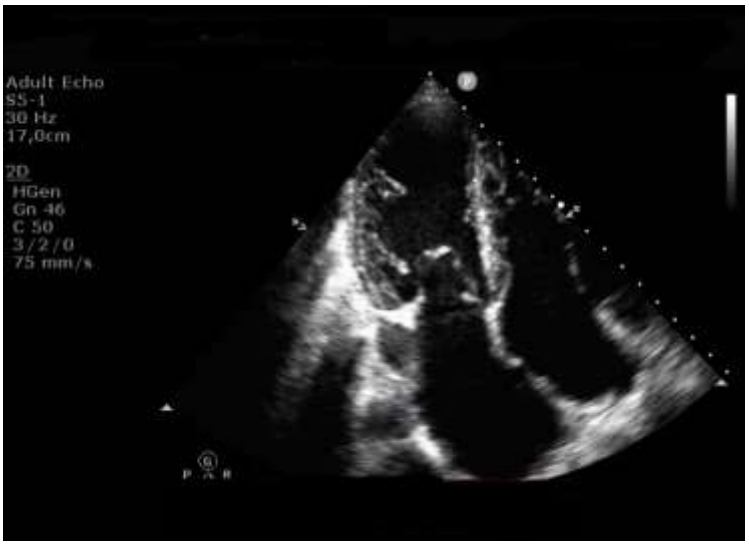
MD Irina Akhmedova[*] [1] , MD Elmira Tukusheva[2] , MD Rahat Kalieva[2] , MD Gulbarchin Usupbaeva[2]
[1] International Higher School of Medicine, Bishkek, Kyrgyzstan
[2] Scientific Research Institute of Heart Surgery and Organ Transplantation, Bishkek, Kyrgyzstan

Mitral supravalvar ring is a rare congenital heart defect. In clinical series in patient with congenital heart diseases (CHD), the reported cases of supravalvar mitral ring is 0.2 - 0.4 %, and in patients with congenital mitral disease it is as high as 8%. The supravalvar mitral ring is a circumferential ridge or membrane arising from the wall of the left atrium that covers the mitral valve and is often attached to the mitral valve. Often, the supravalvar ring can be retratched into the mouth of the mitral valve leaflets and limit their movement. Mitral ring is a subtype of congenital mitral stenosis. Morphology ranges from a thin membrane to a thick discrete fibrous ridge partially or completelly surrounding the mitral orifice and often adjacent to the mitral leaflets. Connect to the valve may impair leaflet opening, and this disruption my be the underlying mechanism for mitral valve inflowobstruction in some patients. In other patients, the ring may be large enough to protrude into the mitral valve inflow and cause obstruction. The supramitral ring may initially be incomplete and eccentric, allowing unimpeded blood flow through the mitral valve.

Modern echocardiography allows highly accurate assessment of the complex of the mitral valve and subvalvular apparatus in real time.

A 36-year-old man came to the clinic due tu dyspnea with minor physical activity. The diagnosis of congenital heart disease was made in childhood; there was no exact information. An echocardiogramm was performed and revealed: a large VSD, a "parachute" MV, supravalvular MV ring, high pulmanary arterial hypertension.





Transthoracic echocardiography (TTE) revealed significant for left atrium (LA) and right atrium (RA) enlargment. LA diameter 5.1 cm, LA volume 125 ml. RA volume 98 ml. Left ventricle (LV) ejection fraction (EF) was 55 %. MV: there are MV leaflets and commissures, the subvalvular structures are displaced are represented by one large papillary muscle. The MV are deformed, resembling the canopy of a "parashute" , was a limited in mobility. Imaging of the mitral valve reveals a membrane covering the MV and attached to the MV. This membrane caused a narrowing of the MV inflow channel by limiting the mobility of the mitral leaflets. MV area 3.8 cm2; maximal pressure gradient 16 mmHg, middle gradient 8 mmHg; moderate regurgitation. Tricuspid valve (TV) leaflets are mobile; moderate regurgitation. Intraventricular septum - large perimebranous devect - 15.1 cm. Pulmonary arterial pressure is 100 mmHg.

When performing TTE, it is always necessary to be alert for concominant pathology. MV abnormalities owerwhelmingly associated wiht other heart defects, so a comprehensive congenital cardiac evaluation is always necessary. When diagnosing a supravalvar ring, special attention should be paid to the supravalvar region: the LA and the surface of the leaft atrium leaflets should be carefully examined. The supramitral ring may be missed if the sonographer is not alert; it is often located internally, rather than in a supramitral position, and is an integral part of the mitral valve leaflets.

https://drive.google.com/file/d/18Kn-LPVHyxJO0xQL1zUGQxw8APkm0Eq1/view?usp=drive_link

https://drive.google.com/file/d/1uLRH7bkETKtuJ1zb3WvQBgotKaWqFLE-/view?usp=drive_link

Keyword: *Supramitral ring,*VVCV

Oral Presentation Session

Surgical Solutions for Aortic and Peripheral Arterial Diseases

Date: 06.06.2024 Time: 14:30 – 15:30 Hall: 5

ID: 28

Topic:

Cardiovascular Surgery > Thoracic aortic aneurysm and dissection

Presentation Type:

Oral Presentation

The new hand made X-graft for cerebral perfusion in aortic arch surgery

Prof. EVGENY ROSSEYKIN* , MD EVGENY KOBZEV
Federal Center for Cardiovascular Surgery (Khabarovsk)

BACKGROUND

Surgical treatment of aortic arch pathology remains a challenge. These surgeries often require the performance of circulatory arrest, cerebral perfusion, and aortic arch branch prosthesis. Nevertheless neurological complications are relatively common, and the surgical mortality rate is still high. Aortic surgeons are dedicated to enhancing surgical techniques and brain protection methods to minimize neurological complications. These include improvements in stitching techniques, sequence of vascular reconstruction, cerebral perfusion strategies. The aim of this study was to evaluate the outcomes of the aortic arch branch reconstruction technique using new hand made X-graft prosthesis for aortic arch surgery.

METHODS

This retrospective study included 78 patients with aortic dissection or aneurysm who underwent total arch replacement at our hospital between January 2019 and January 2024. All patient performed reconstruction of the arch branch, including the innominate artery (IA), the left common carotid artery (LCCA), and the left subclavian artery (LSCA). To perform aortic branch replacement and provide cerebral perfusion we used multibranch polyester (Dacron) graft 12x10x8x8 (Standard group, n=52) or new hand made X-graft formed from linear polyester prostheses (X-graft group, n=26). The first step for arterial perfusion was cannulation of the LSCA. Next we consequently replaced the LSCA, LCCA and IA using branches of the multibranch graft or X-graft («opposite branch first» technique) and performed a major aortic intervention. Primary outcomes of the study were neurological complications and stenosis/occlusion of the branches standard graft and X-graft. The secondary endpoints were in hospital mortality, ventilator time, postoperative dialysis, re-exploration for bleeding.

RESULTS

Standard group had more patients with aortic dissection (88%), X-graft group with aortic arch aneurysm (46%) ($p<0.001$). Acute type A aortic dissection was observed in 27% and 31% of patients, respectively. Standard group had a longer duration of CPB time ($p=0.007$), but no statistically significant differences were observer in aortic clamp time, circulation arrest time. There were 5 (9,6%) early deaths in the Standard group and 3 (13%) in the X-graft group. The rate of postoperative stroke in was similar in both groups (5,7% and 3,8%, respectively). There was no statistically significant difference in renal failure requiring dialysis, re-explorations for bleeding, respiratory complications. There were no cases of significant stenosis or occlusion of the branches standard graft and X-graft.

CONCLUSIONS

The use of X-graft for aortic arch branch replacement is simple and safe. This prosthesis can be considered as a good alternative to the standard multibranch prosthesis in aortic arch surgery.

Keyword: *aortic dissection, aortic arch, cerebral perfusion*

ID: 70

Topic:

Cardiovascular Surgery > Thoracic aortic aneurysm and dissection

Presentation Type:

Oral Presentation

Minimally invasive approach in aortic arch surgery.

MD Andrey Protopopov* , MD Dmitry Sirota , MD Dmitry Khvan , Prof. Alexander Bogachev-Prokophiev , MD Maksim Zhulkov , Prof. Aleksandr Chernyavskiy

E.Meshalkin National Medical Research Center of Ministry of Health of Russian Federation 15 Rechkunovskaya Street, Novosibirsk, 630055 Russia

Background

The median sternotomy access remains to be the gold standard in aortic arch surgery. However, nowadays minimally invasive approach has become much more popular in cardiac surgery. Unfortunately, aortic arch replacement through a minimally invasive incision is rarely found. It is connected with its high operative risk and technical difficulty. It has its advantages: reduced trauma, pain and reduced blood loss and transfusions, and shorter hospital stay, Nonetheless, it has its disadvantages: the need for the use of peripheral cannulation for CPB which requires experienced surgeons, internal thoracic artery and vein injury, as well as cases of conversion.

Methods

We retrospectively analyzed 28 patients who underwent interventions on the aorta including: Hemiarch, Total Aortic Arch replacement and “Frozen Elephant Trunk” through J-shaped sternotomy from January 2019 and March 2024. The patients were divided into three groups according to the procedure: group 1 included 17 patients with hemiarch replacement; group 2 included 4 patients with total aortic arch replacement; group 3 included 7 patients with “Frozen Elephant Trunk”. Moderate hypothermic circulatory arrest and antegrade cerebral perfusion (24C) was used for all patients.

Results

J-shaped approach was down to the third and fourth intercostal spaces. Concomitant cardiac procedures included supracoronary ascending aortic replacement in 17 patients (60.7%), aortic root replacement (David procedure) in 4 patients (14.3%) and Bentall-deBono procedure in 7 patients (25%). Circulatory arrest among the groups estimated 23.47±6.57 min for Hemiarch, 63.5±5.67 min for Total Aortic Arch and 65.8±17.2 min for Frozen Elephant Trunk. Aortic cross-clamp time was 121,4±45.3 min, 115±25.1 min and 122.4±24 min. CPB time was 176.3±40.8 min, 183.7±33.3 min and 211.4±28.8 min. Total procedure time was 397.3±56.7 min; 417,5±58,6 min and 497.4±68.9 min. Conversion to full

sternotomy was not required (0%). There was 1 case of mortality 3 months after the procedure (3.57%) due to wound infection and sepsis, 30-day mortality was 0%. Mechanical circulatory support was not required in all patients. Re-explorations due to bleeding were in 4 patients (14.2%). Neurological complications were in 3 patients (10.7%).

Conclusion

J-shaped sternotomy in aortic arch replacement is technically feasible and shows better early outcomes.

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Keyword: *J-Shaped sternotomy, Aortic arch, Aortic reconstruction, Circulatory arrest*

ID: 132

Topic:

Cardiovascular Surgery > Vascular surgery and vascular access

Presentation Type:

Oral Presentation

COMPARATIVE ANALYSIS OF THE EFFICACY OF SURGICAL TREATMENT METHODS FOR INFRARENAL ABDOMINAL AORTIC ANEURYSM: ENDOVASCULAR IMPLANTATION OF STENT-GRAFT INTO ABDOMINAL AORTA AND AORTO-FEMORAL BIFURCATION PROSTHESIS. EXPERIENCE OF ONE CLINIC.

MD Ingkar Omarkyzy* , MD Almas Saduakas , MD Yerzhan Abilkhanov , MD Kim Dmitriy , MD Manat Zhakubayev , MD Askar Matkerimov , MD Almas Shamshiev , MD Makkamov Rustam , MD Yerkebulan Kanatuly , MD Alisher Kozhamkul , MD Dulat Almat , MD Daniyar Appazov

"JSC National Scientific Centre of Surgery named after A.N. Syzganov "Kazakhstan, Almaty

Background: Comparative study of treatment methods for infrarenal abdominal aortic aneurysms is an important area of clinical practice and research, and its results contribute to the improvement of patients' quality of life and optimisation of health care.

The aim of this study is to compare the efficacy of the OAR with EVAR on the basis of NSCS n.a. A.N.Syzganov.

Materials: 105 case histories of patients with clinical diagnosis of aneurysm of infrarenal abdominal aorta in the archive on case histories on the basis of JSC "Syzganov NSCH" were involved in the study. A.N.Syzganov" from 2018 to 2023.

Results: It was found that out of 105 patients, 80 (76.19%) underwent EVAR, and 25 patients (23.8%) underwent OAR. Among patients for the c EVAR group, the mean age ranged from 47 to 88 (72.0±8.15) years, respectively, 78% (80 patients), for patients in the group with OAR from 50 to 85 (68.9±8.81) years 22% (25 patients). BMI for the group of patients who underwent EVAR averaged 28.6 ±5.05, for the group with OAR 24.7 ±4.61. Thus, a patient selection criterion for choosing the method of surgical treatment depending on BMI was revealed (p=0.03). Also, hospital stay at endovascular correction of abdominal aortic aneurysm (13±9,14) was 15,25% less than at traditional (18,6±8,12) method (p=0.001). The average stay in the ICU with this surgical treatment was 1.34 (1±1.16) days, which is 41.2% less compared to OAR (p=0.024). EVAR compared to OAR in terms of surgical time also prevails by its cost-effectiveness (180±62.4), which is 31.7% faster compared to OAR (289±58.6). Reduced surgical time reduces the time of aortic clamping (p = 0.001), the risk of blood loss (p = 0.001), thus reducing the need for hemotransfusion in the intro- (p = 0.052) and postoperative periods (p=0.001). The study revealed that the most camorobid patients are found in the group of patients who underwent EVAR (p<0.005). The incidence of postoperative complications was similar in both groups (p⩾0.005). However, the data for hospital mortality and five-year survival were not statistically significant (p⩾0.005).

Conclusions: This study refutes comparative studies of the efficacy of the two methods, for each type of surgical intervention has its own defined indices. For the most accurate detection of the efficacy of a particular method, it is worth selecting patients of the same age and BMI, with the same comorbidities, and the same aortic anatomy with aneurysmal sac distribution.

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Endovascular and Open Repair of Abdominal Aortic Aneurysm Thomas Schmitz-Rixen 1, Dittmar Böckler, Thomas J Vogl, Reinhart T Grundmann Affiliations expand PMID: 33568252 PMCID: PMC8005839 DOI: 10.3238/arztebl.2020.0813
Endovascular versus Open Repair of Abdominal Aortic Aneurysm May 20, 2010 N Engl J Med 2010; 362:1863-1871 DOI: 10.1056/NEJMoa0909305
Open Treatment of Abdominal Aortic Aneurysm in the Endovascular Era by Abdulhakim Ibrahim Miroslav Dimitrov Yordanov Mohammad Hasso Benjamin Heine and Alexander Oberhuber Department of Vascular and Endovascular Surgery, University Hospital Muenster, 48149 Muenster, Germany Author to whom correspondence should be addressed. J. Clin. Med. 2022, 11(11), 3050; https://doi.org/10.3390/jcm11113050 Original submission received: 23 March 2022 / Revised: 27 April 2022 / Accepted: 25 May 2022 / Publishe
Cost-effectiveness analysis of endovascular versus open repair of abdominal aortic aneurysm in a high-volume center Patrick Canning 1, Wael Tawfick 2, Nicola Whelan 1, Niamh Hynes 3, Sherif Sultan 4 Affiliations expand PMID: 30777686 DOI: 10.1016/j.jvs.2018.11.018

Keyword: *aortic aneurism, aortic repair, EVAR, OAR*

ID: 71

Topic:

Cardiovascular Surgery > Vascular surgery and vascular access

Presentation Type:

Oral Presentation

Penetrating Popliteal Vascular Injury: Single Center Experience

MD Hasan TOZ* , Assoc. Prof. Yusuf KUSERLİ
Bakırköy Dr. Sadi Konuk Training & Research Hospital,İstanbul

BACKGROUND

Popliteal vascular injury remains a challenging entity, and carries the greatest risk of limb loss among lower extremity vascular injuries. We aim to review our experience with complex penetrating popliteal vascular injuries, thereby focusing on therapeutic challenges, and early outcomes.

METHODS

From September 2014 to December 2022, we managed total of 528 penetrating vascular injuries with 157 popliteal vascular injuries presented. Variables were retrospectively collected included patient demographics, mechanism and type of injuries, limb ischemia time, type of vascular reconstruction, associated complications, limb salvage, and mortality.

RESULTS

157 vascular reconstructions were performed for 103 patients with penetrating popliteal vascular injuries, the majority 92 (89.3%) were male. Mean age was 27.3 ± 12.3 years. Popliteal vascular injuries were the second most common accounting for 35% of lower extremity vascular injuries and 22.4% of the total vascular injuries. Nearly half 54 (52.4%) of patients sustained complex popliteal vascular injuries (arterial and venous injuries), 31 (30.1%) isolated arterial injuries, and 18 (17.5%) isolated venous injuries. Management of vascular injury was repaired by interposition graft in 68 (66%), end-to-end anastomosis in 16 (15.5%), and venous patch in 1(1%). Venous injury was repaired in 53 (51.4%) and ligated in 18 (17.5%). The overall fasciotomy was 28 (27.2%) which significantly increased length of hospital stays (17 days vs 7 days, P= 0.0003).

CONCLUSIONS

Mortality and morbidity are high in popliteal artery injuries. Rapid intervention to injuries will prevent limb loss and mortality. We advocate repair of arterial injury with vein graft as the treatment of choice whenever possible.

Keyword: *Popliteal vascular injury, Penetrating injury*

ID: 16

Topic:

Cardiovascular Surgery > Vascular surgery and vascular access

Presentation Type:

Oral Presentation

Approach in Subclavian Artery Surgery

MD MURAT ERSOY*
ŞANLIURFA MEHMET AKİF İNAN EĞİTİM VE ARAŞTIRMA HASTANESİ

BACKGROUND

Sternum and clavicle are bony structures protecting the subclavian artery and surgery of vascular structures in this area is very difficult because of this anatomy. Subclavian artery injury is a cause of high mortality and morbidity. Surgical approach to this area is important, especially in emergency conditions.

METHODS

A 32-year-old male patient with multiple fractures who was brought to the emergency department due to a non-vehicle traffic accident was consulted to our clinic because of ischemia in the left arm. On physical examination, pulses in the left upper extremity could not be palpated. Embolectomy was performed from the brachial artery, but the embolectomy catheter did not advance beyond 15 cm proximal to the brachial artery. Subclavian artery exploration was then decided. The subclavian artery showed multiple intimal tears due to trauma and extensive hematoma due to stretching in the media and adventitia layers. The proximal subclavian artery was accessed by cutting the clavicle 1/3 distal part. Satinsky clamp was placed. 7no dacron graft was interposed with 5-0 prolene. The clavicle was fixed using a plate. Anterior fasciatomy was performed on the left forearm.

RESULTS

Postoperative brachial radial and unlar artery pulses were palpably positive. DMAH was given to the patient. The patient was admitted to the ward after approximately 24 days of intensive care unit follow-up. After the surgical procedure, the patient was discharged without limb loss.

COCLUSIONS

Access to the subclavian artery is difficult depending on the anatomy. In trauma-related subclavian artery injuries, easy exposure can be achieved by cutting the clavicle to access the subclavian artery.

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Keyword: *Subclavian artery injury, Subclavian artery surgery, Brachial artery Embolectomy*

ID: 100

Topic:

Cardiovascular Surgery > Thoracic aortic aneurysm and dissection

Presentation Type:

Oral Presentation

Artificial Intelligence in Diagnostic of Aneurysms and Dissections of Thoracic Aorta and Aortic Surgery

MD Gleb Kim[*] [1] , MD Viktor Pyagay[1] , MD Dmitry Shmatov[1] , MD Dzhelil Keremov[2]
[1] Saint Petersburg State University Hospital, Saint Petersburg, Russian Federation
[2] Almazov National Medical Research Center, Saint Petersburg, Russian Federation

BACKGROUND

Dissection or rupture of the aorta is a common cause of sudden death. Timely diagnosis and well-chosen treatment tactics are the basis for success. Every year, the demand for automation of decision-making and big data processing is growing more and more, especially in an emergency situation. In this regard, the most relevant is the use of artificial intelligence methods to prepare data for specialists and use expert systems as a doctor's assistant. The aim of study is analysis of the development of the expert system Expert Opinion AI for the examination of thoracic aorta pathology.

METHODS

The Expert Opinion AI Team consists of cardiac surgeons, cardiologists and Data Science specialists. Our system is based on the use of an ensemble of neural networks and the analysis of a large amount of data, including clinical indicators, computed tomography and transthoracic echocardiography. The main technology used in the study is modern models of convolutional neural networks and transfer learning, which are used in the task of segmentation. During the hypothesis testing, one of the main experiments was conducted to assess the quality of three neural network models: models based on the U-Net architecture with the ResNet-50 encoder, TransUnet and SWIN transformers. To analyze the images of the aorta and the learning process of neural networks, both data from existing labeled datasets and computed tomography data of the chest and aorta marked up by us were used.

RESULTS

Neural network models ("U-Net+ResNet-50", TransUnet and SWIN) have been developed and trained for automatic detection of the aorta on CT. The resulting digital model of the aorta could be used as a preparatory data processing procedure for neural network methods for segmenting the aortic sizes and its derivatives, searching and detailing pathological abnormalities in the aorta.

CONCLUSIONS

The widespread use of artificial intelligence in cardiac surgery is just beginning. The lack of a sufficient number of experts in the field of aortic surgery, as well as the need for assistance in decision-making, is a key problem that can be solved through the use of an expert system.

Keyword: *Artificial Intelligence, Thoracic Aorta, Aortic Surgery, Expert System, Aorta*

ID: 166

Topic:

Cardiovascular Surgery > Endovascular surgery

Presentation Type:

Oral Presentation

Hybrid Aortic Arch Repair In Patients Who Have Type-I Aortic Dissection After Cardiac Surgery

Prof. Ömer Faruk Doğan , MD Nazenin Durak* , MD Mete Kubilay Kasap
Adana City Hospital

BACKGROUND AND AIM:Traditional aortic dissection (AD) surgery involves resect the primary intimal tear and re-approximate the intima and adventitia., However, residual dissection flap and false lumen(s) whics is cause of mortality during follow up period persist in aorta in 76 % of patients.Our purpose of this study was to evaluate clinical outcomes after use of hybrid techniques in patients with AD.
METHOD:Twenty-Five patients who have already undergone cardiac surgery included for this study between 2014 to 2023. The mean age of the patients was 59 years.Aortic valve replacement, Benthall operation,and AVR and seperated ascending aortic repair using tube graft were the primary operations.Frozen elephant trunk (ET), revascularisation of the supra-aortic branches concomitant with TEVAR, and stent-graft repair without surgery (fenestrated and/or branched TEVAR) were used in our cohort. We used flow directed stent graft in 14 patients had abdominal aortic dissection with aneurysm.
RESULTS:Postoperativ course was uneventful except 3 patients. The reasons of death were cerebrovascular accident and multi organ failure. Postoperative hemiparasia was detected in 2 patients. Magnetic resonance imaging showed embolic event in parietal lobe. The median ECC and an aortic cross clamp were 168 min., and 114 min., respectively. Mean length of hospital staying time was 14 days (11-33 days). Two patients needed revision postoperatively. During follow-up period (median: 44 months) the rate of death was at 4%. False lumen thrombosis on descending thoracic aorta was obtained in all survived patients. The rate of aortic reintervention was 3.3% on abdominal aorta.i during follow-up period.
CONCLUSIONS:To provide visseral organ malperfusion due to remained aortic false lumen and ,persistancy or dissection which may cause aortic rupture, we propose hybrid procedure in these patients.Flow directed stent graft implantation in the same time may inhibites organ malperfusion in selected patients. Hybrid procedure in patients with ascending aortic dissection with abdominal aneurysm seems to be feasible method in these patients.

Keyword: *Aortic dissection, Hybrid procedurre*

IAVES

Novel Treatment Modalities in DVT

Date: 06.06.2024 Time: 14:30 – 15:20 Hall: 3

ID: 136

Topic:

Cardiovascular Surgery > Endovascular surgery

Presentation Type:

Oral Presentation

HEMOSTATIC ENDOVASCULAR BALLOON OCCLUSION OF THE INFERIOR VENA CAVA(HEBOC)

MD Ricardo Yukio Okawa[*1], Assoc. Prof. Tulio Pinho Navarro[2], Assoc. Prof. Francisco João Sahagoff de Deus[3]

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[3] Universidade Estadual do Rio de Janeiro

HEMOSTATIC ENDOVASCULAR BALLOON OCCLUSION OF THE INFERIOR VENA CAVA(HEBOCR)

INTRODUCTION

Trauma to the retrohepatic segment of the inferior vena cava constitutes a major challenge in emergency rooms. With high rates of immediate, pre- and post-operative mortality and, when rescued in a timely manner, subjected to the conventional approach, they constitute a great challenge due to the difficult surgical access caused by the complex mobilization of the liver in a timely manner to contain hemorrhages.

Clamping before and after injury to the retrohepatic segment is a traumatic technique and is not always effective in hemostatic control.

This technique has already been suggested to approach inferior vena cava injuries, especially retrohepatic lesions that are more difficult to access, but technical difficulties regarding balloon pressure control, hemodynamic stability and arthrogenesis have hampered previous attempts.

METHODOLOGY

Our sample presented one (1) case of retrohepatic vein trauma caused by a firearm, (6) six videolaparoscopic segmental hepatectomies, (1) one open segmental hepatectomy, (2) two abdominal perineal amputations, (1) a mediastinal tumor with pedicle invading infradiaphragmatic vena cava and (1) pelvic teratoma, totaling (12) twelve cases followed up

with pre-operative study with 128-channel CT angiography with 3D MPR HOROS R reconstruction for navigation references.

All cases were evaluated pre, per and post-operatively with evaluation of hemodynamic data, volume replacement and blood products, surgical time, complications and length of stay in intensive and total therapy. Such data were compared, according to each group studied, with meta analyzes contained in the literature with average evolution parameters in similar conventional surgeries, without the use of HEBOC.

RESULTS

In a general analysis, all patients in all groups had less blood loss during the procedure, reflected in a significant reduction in the replacement of blood products (more than 70% in trauma and between 30 and 40% less in oncology). reflected in a shorter stay in intensive care centers (a drop of more than 50%) and hospitalization in general.

The use of balloon fluorescence with Indocyanine Green in solution in video surgeries with a laser lamp proved to be efficient, with rapid positioning of the balloon where necessary and as a reference for dissection of the hepatic pedicle, where the entire vena cava was fluorescent and protected from iarthrogenic injuries.

DISCUSSION

The HEBOC Technique (Endovascular Hemostasis with Vena Cava Occluding Balloon) proved to be effective in this series of initial cases with a significant reduction in morbidity and mortality in major surgeries. The technique is easily replicable by General Surgeons after training with Vascular Surgeons, being a vast field. of its applicability in trauma and especially in Oncovascular surgery with an excellent cost-benefit ratio proven by the reduction in hospitalization time, reduction in surgical time and arthrogenesis, in addition to a significant reduction in blood transfusions.

Oral Presentation Session

Tips and Tricks in Carotid Endarterectomy

Date: 06.06.2024 Time: 15:45 – 16:45 Hall: 5

ID: 38

Topic:

Cardiovascular Surgery > Vascular surgery and vascular access

Presentation Type:

Oral Presentation

Systemic Immune-inflammation Index For Predicting Poor Outcome After Carotid Endarterectomy: A Novel Hematological Marker

Assoc. Prof. Ahmet Yuksel[*1], Assoc. Prof. Yusuf Velioglu[1], Assoc. Prof. Ufuk Turan Kursat Korkmaz[2], Assoc. Prof. Serkan Burc Deser[3], Assoc. Prof. Dursun Topal[4], MD Serdar Badem[1], MD Temmuz Taner[1], Assoc. Prof. Erhan Renan Ucaroglu[2], Assoc. Prof. Nail Kahraman[1], Assoc. Prof. Deniz Demir[1]

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BACKGROUND: Systemic immune-inflammation index (SII) is a newly developed hematological marker derived from the complete blood count (CBC) test, formed by a formulation of platelets, neutrophils, and lymphocytes (SII= platelet count × neutrophil/lymphocyte ratio (NLR)), and simultaneously showing the inflammatory and immune status of patients. SII has been investigated in various cardiovascular disorders such as coronary artery disease, aortic valve stenosis and pulmonary thromboembolism, and demonstrated to be an important prognostic biomarker. Furthermore, SII has been reported to predict poor postoperative outcomes following off-pump CABG. However, a possible predictive relationship of SII with poor outcomes following CEA has not yet been studied in the literature. Therefore, we designed this study to investigate whether a possible relationship between SII and poor postoperative outcomes was present in patients undergoing CEA.

METHODS: A total of 347 patients undergoing isolated CEA between March 2010 and April 2022 were included in this multicenter retrospective observational cohort and risk-prediction study and were divided into two groups as poor outcome group (n=23) and favorable outcome group (n=324). Poor outcome was defined as the presence of at least one of the complications within 30 days of surgery including stroke, myocardial infarction, and

death. Patients' baseline clinical characteristics, comorbidities, and hematological indices were derived from the CBC analysis, and perioperative data, outcomes, and complications were screened, recorded, and then compared between the groups. Multivariate logistic regression and ROC analyses were conducted following univariate analyses to detect the independent predictors of poor outcome as well as the cut-off values with sensitivity and specificity rates.

RESULTS: Twenty-three of 347 patients (6.6%) manifested poor outcome; and stroke, MI, and death occurred in 13, 3, and 7 cases, respectively. There were no significant differences between the groups in terms of basic clinical characteristics, comorbidities, and perioperative data, except for lengths of ICU and hospital stays. Although median values of platelet count, platelet/lymphocyte ratio (PLR), NLR, and SII of poor outcome group were found to be significantly higher than favorable outcome group in univariate analysis, only SII was detected to be a significant and independent predictor of poor outcome in multivariate logistic regression analysis (OR=1.0008; 95% CI:1.0004-1.0012; p=0.002). ROC curve analysis revealed that SII of $1356\times10^3/mm^3$ constituted the cut-off value for predicting poor outcomes with 78.3% sensitivity and 64.5% specificity (AUC=0.746; 95% CI:0.64-0.851).

CONCLUSION: Our study revealed for the first time in the literature that SII significantly predicted poor outcomes following CEA.

Table 1. Baseline clinical variables.

Variable	Poor outcome group (n = 23)	Favorable outcome group (n = 324)	p-Value
Age (year)	69.2 ± 7.4	66.8 ± 9.2	.22
Gender (male)	16 (69.6%)	220 (67.9%)	1.00
Obesity	6 (26.1%)	80 (24.7%)	1.00
Hypertension	14 (60.9%)	198 (61.1%)	1.00
Diabetes mellitus	15 (65.2%)	182 (56.2%)	.53
Hyperlipidemia	9 (39.1%)	126 (38.9%)	1.00
Coronary artery disease	12 (52.2%)	164 (50.6%)	1.00
Peripheral artery disease	6 (26.1%)	68 (21.0%)	.75
Chronic renal failure	3 (13.0%)	27 (8.3%)	.69
COPD	3 (13.0%)	33 (10.2%)	.94
Previous CVE	16 (69.6%)	209 (64.5%)	.79
Contralateral ICA occlusion	3 (13.0%)	15 (4.6%)	.20
Smoking	9 (39.1%)	125 (38.6%)	1.00

COPD: chronic obstructive pulmonary disease; CVE: cerebrovascular event; ICA: internal carotid artery.

Table 2. Perioperative variables.

Variable	Poor outcome group (n = 23)	Favorable outcome group (n = 324)	p-Value
Local anesthesia	2 (8.7%)	27 (8.3%)	1.00
Clamp time (min)	27 (17–60)	30 (12–98)	.74
Operation time (min)	60 (48–120)	60 (37–210)	1.00
Length of ICU stay (hour)	192 (48–480)	24 (4–96)	<.01
Length of hospital stay (day)	15 (2–49)	4 (2–12)	<.01
Bleeding or hematoma	1 (4.3%)	19 (5.9%)	1.00
Vocal cord paralysis	1 (4.3%)	12 (3.7%)	1.00
Nonfatal stroke	13 (56.5%)	0	NS
Documented MI	3 (13.0%)	0	NS
Early-term mortality	7 (30.4%)	0	NS

ICU: intensive care unit; MI: myocardial infarction; NS: not specified.

Table 3. Laboratory parameters.

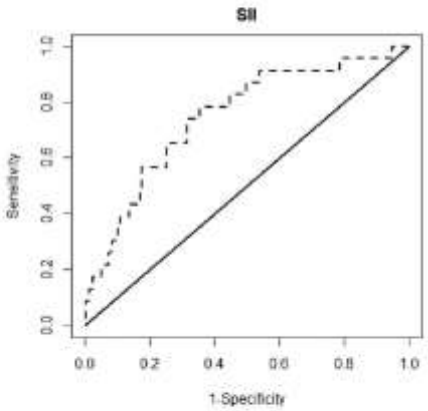
Variable	Poor outcome group (n = 23)	Favorable outcome group (n = 324)	p-Value
HGB (g/dL)	13.2 (8.8–16.0)	13.0 (8.3–19.2)	.91
HCT (%)	38.2 (26.3–50.0)	38.9 (24.8–58.7)	.96
MCV (fL)	85.3 (74.4–92.8)	87.3 (65.9–99.2)	.06
RDW (%)	16.0 (14.4–24.1)	16.0 (11.0–29.0)	.55
WBC (μ/mm^3)	9.2 (4.5–16.3)	8.8 (3.0–23.0)	.11
PLT (10^3/mm^3)	309 (165–562)	244 (109–712)	<.01
NEU (%)	73.1 (38.4–88.2)	70.1 (23.5–96.2)	.24
LYM (%)	11.5 (5.0–29.4)	17.0 (4.4–48.6)	.02
MPV (fL)	8.0 (5.8–12.3)	8.0 (3.1–15.0)	.69
PDW (%)	17.1 (15.7–20.3)	17.4 (15.5–20.9)	.15
PCT (%)	0.20 (0.04–0.32)	0.18 (0.04–0.51)	.26
NLR	6.3 (2.2–16.6)	4.1 (1.1–15.2)	.02
PLR	26.4 (8.1–61.8)	15.3 (3.1–67.6)	<.01
SII (10^3/mm^3)	1865 (406–4802)	1047 (189–4895)	<.01

HCT: hematocrit; HGB: hemoglobin; LYM: lymphocyte; MCV: mean corpuscular volume; MPV: mean platelet volume; NEU: neutrophil; NLR: neutrophil-to-lymphocyte ratio; PLT: platelet; PLR: platelet-to-lymphocyte ratio; PCT: Plateletcrit; PDW: platelet distribution width; RDW: red cell distribution width; SII: systemic immune-inflammation index; WBC: white blood cell.

Table 4. Results of multivariate logistic regression analysis for the prediction of poor outcome after carotid endarterectomy (CEA).

	Univariate		Multivariate	
	OR (95% CI)	p-Value	OR (95% CI)	p-Value
HGB	1.060 (0.853–1.317)	.600		
HCT	1.008 (0.937–1.085)	.823		
MCV	1.065 (0.997–1.138)	.661		
RDW	0.911 (0.774–1.072)	.261		
WBC	0.926 (0.826–1.039)	.191		
PLT	0.995 (0.991–0.999)	.007	0.998 (0.990–1.007)	.718
NEU	0.982 (0.946–1.019)	.341		
LYM	1.071 (1.002–1.146)	.045	1.008 (0.901–1.128)	.886
PLR	0.947 (0.922–0.973)	<.001	1.018 (0.92)–1.126)	.722
NLR	0.841 (0.747–0.947)	.004	1.170 (0.902–1.516)	.237
SII	0.999 (0.999–1.000)	<.001	0.999 (0.999–1.000)	<.001
MPV	0.949 (0.763–1.180)	.635		
PDW	1.272 (0.875–1.848)	.202		
PCT	0.254 (0.002–34.454)	.585		

HCT: hematocrit; HGB: hemoglobin; LYM: lymphocyte; MCV: mean corpuscular volume; MPV: mean platelet volume; NEU: neutrophil; NLR: neutrophil-to-lymphocyte ratio; PLT: Platelet; PLR: platelet-to-lymphocyte ratio; PCT: Plateletcrit; PDW: platelet distribution width; RDW: red cell distribution width; SII: systemic immune-inflammation index; WBC: white blood cell.



Optimum cut-off value	Area under the ROC curve (AUC)	95% Confidence interval (CI)	Sensitivity rate	Specificity rate
1356	0.746	0.64 - 0.851	78.3%	64.5%

Figure 1. Results of ROC curve analysis for SII.

Keyword: *Systemic immune-inflammation index, carotid endarterectomy, poor outcome, predictor*

ID: 46

Topic:

Cardiovascular Surgery > Diagnosis and treatment of carotid artery disease

Presentation Type:

Oral Presentation

Simple And No Plaque Touch Shunting In Patients Undergoing Carotid Endarterectomy And Requiring Shunt : The Jalalzai Technique

MD Izatullah Jalalzai* , MD Hakan Usta , MD Ebubekir Sönmez , Assoc. Prof. Ümit Arslan , Assoc. Prof. Eyupserhat Çalık

Ataturk University Hospital Department Of Cardiovascular Surgery

Background

During carotid endarterectomy, the application of traditional shunt techniques may occasionally impede carotid artery surgery.To achieve this objective, a novel and uncomplicated shunt method can be readily executed by inserting one arterial cannula into the internal carotid artery distally to the clamp, and another into the common carotid artery proximally to the clamp.

Methods

In 38 consecutive patients who need shunting during carotid endarterectomy operation; prior to the application of clamps, the presence of plaques in both the common carotid artery and the internal carotid artery was verified using gently palpation. Following the placement of the cross, a 16-gauge or 14-gauge branule was inserted into the plaque-free region of the internal carotid artery to measure the stump pressure. A second granule was attached to the back of the initial granule using a short line and a 3-way stopcock. This second granule was positioned near the cross clamp on the common carotid artery. With this 3-way stopcock shunt, flow was provided from the main carotid artery to the internal carotid artery simultaneously with stump pressure and systemic pressure

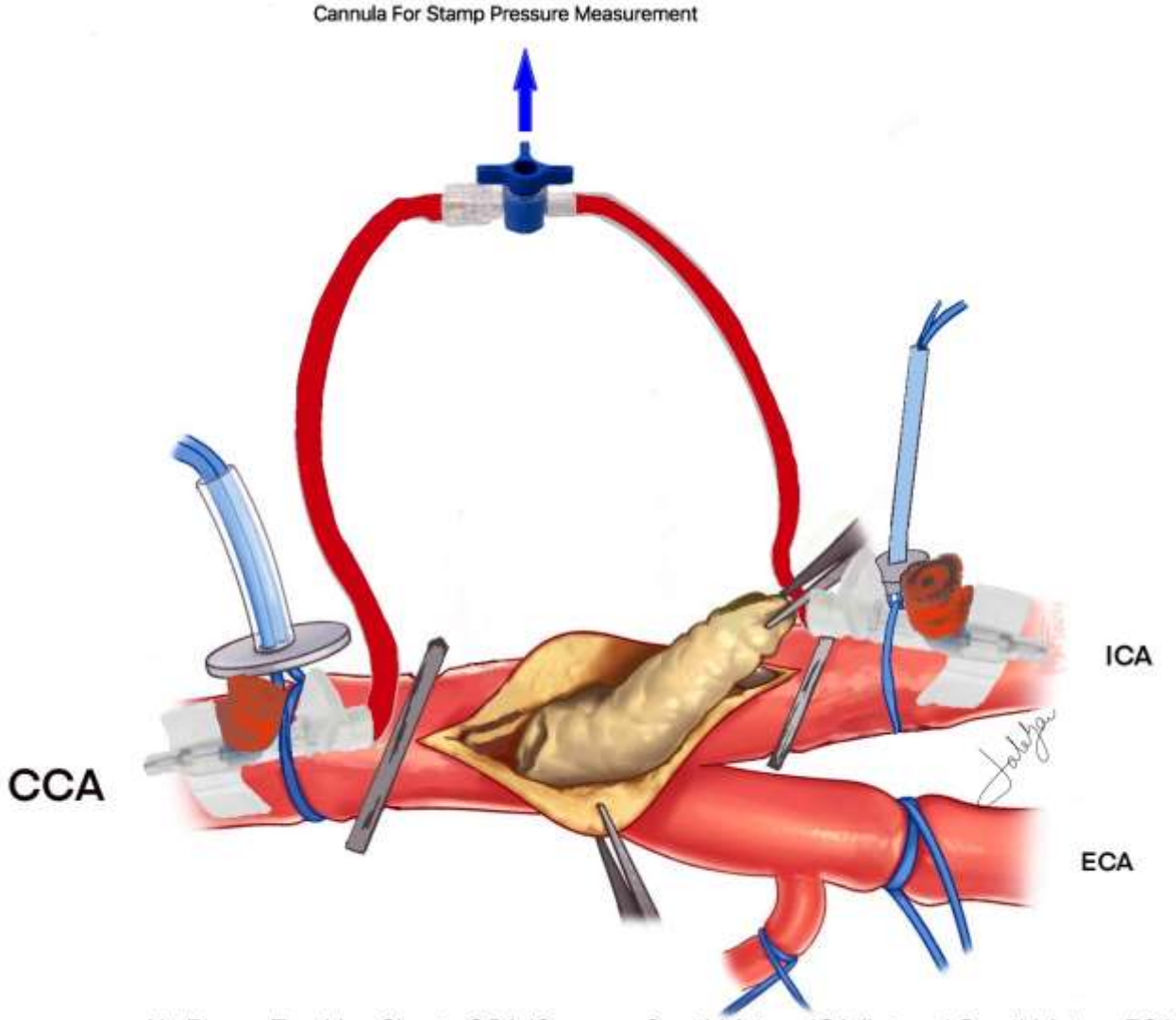
Results

The mortality rate was 0/38 in first 30 days of discharge from hospital. All patients were monitored with Near Ifrared Sprectoscopy and stamp pressure was monitored during operation. None of the patients had any cerebrovascular event post operation.

Conclusion

In addition to offering a bloodless surgical site, this straightforward approach can be utilized for patients undergoing carotid endarterectomy who necessitate shunting during the

procedure. However, this procedure may provide difficulties in individuals with proximal plaque and calcifications in the internal carotid artery.



No Plaque Touching Shunt : CCA (Common Carotid Artery, ICA (Internal Carotid Artery, ECA (External Carotid Artery)

Keyword: *Carotid Endarterectomy, Plaque, Shunt*

ID: 30

Topic:

Cardiovascular Surgery > Hybrid cardiovascular surgery

Presentation Type:

Oral Presentation

Our Results of Carotid Endarterectomy with Simultaneous Proximal Common Carotid Endovascular Intervention

MD Xodjiakbar Alidjanov*

Tashkent Medical Academy, Republican Special Center of Surgical Angioneurology

Introduction : Carotid bifurcation stenosis may co-exist simultaneously with more proximal common carotid artery (CCA) atherosclerotic plaquing, primarily at the vessel origin in the aortic arch. It is logical to treat any high grade common carotid lesions proximal to a carotid bifurcation endarterectomy (CEA) site both to prevent perioperative emboli or thrombosis as well as future embolization.

Methods : Binary logistic multivariable regression was performed for perioperative neurological event and 90-day mortality risk determination and Cox multivariable regression analysis was performed for long term freedom from cumulative ischemic neurological event and long-term mortality analysis. Symptomatology and type of surgery (CEA with or without CCA intervention) were individual variables in the multivariable analysis. Neurological ischemic event in this study encompassed transient ischemic attack (TIA) and stroke combined.

Results: We noted a statistically significant (P<.001) escalation in rates of perioperative neurological event, myocardial infarction (MI), carotid re-exploration, 90 day mortality and combined neurological event and 90 day mortality moving from: A) asymptomatic CEA in isolation to B) symptomatic CEA in isolation to C) asymptomatic CEA combined with proximal CCA intervention to D) symptomatic CEA in combination with proximal CCA intervention. The positivity rate for the combined outcome of perioperative ischemic neurological event and 90 day mortality was 2.2% amongst asymptomatic CEA in isolation, 4.1% amongst symptomatic CEA in isolation, 4.4% amongst asymptomatic CEA in combination with proximal CCA intervention; and 8.8% in patients with symptomatic lesions undergoing combined CEA with proximal CCA intervention.

Conclusions : Asymptomatic patients are unlikely to benefit from CEA in combination with proximal endovascular intervention. Given the increased risk associated with symptomatic carotid stenosis, CEA with proximal CCA endovascular intervention is felt to be beneficial. After surgery, freedom from cerebral ischemia and mortality for patients undergoing dual intervention is closely aligned with patients undergoing CEA in isolation.

ID: 76

Topic:

Cardiovascular Surgery > Vascular surgery and vascular access

Presentation Type:

Oral Presentation

A Novel Surgical Technique For Avoiding The Drawbacks Of Conventional Endarterectomy Methods In Carotid Artery Surgery

Assoc. Prof. Yusuf Velioglu[*] [1] , Assoc. Prof. Ahmet Yuksel[1] , Assoc. Prof. Ufuk Turan Kursat Korkmaz[2] , MD Mustafa Selcuk Atasoy[3]

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BACKGROUND: The aim of this study was to describe a novel surgical technique for carotid artery disease and to present the clinical outcomes of patients undergoing carotid artery surgery with this novel technique.

METHODS: A total of 73 patients underwent carotid artery surgery between January 2016 and December 2021. Among them, 26 patients operated with our newly developed surgical technique whose medical data were available and who were followed for at least two years consisted of study population. Patients' basic clinical characteristics, operative data, and postoperative outcomes and follow-up data were reviewed and presented in this retrospective observational cohort study.

SURGICAL TECHNIQUE: All surgical procedures were performed under general anasthesia by a single experienced cardiovascular surgeon (Y.V.). After performing an oblique incision parallel to anterior border of sternocleidomastoid muscle in the cervical region, the carotid bifurcation was reached and then CCA, ICA and ECA were suspended with vascular tapes. GSV was harvested as an interposition graft at the level of proximal thigh after carotid arteries were visually evaluated. Unfractionated heparin at a dose of 100 IU/kg was administered intravenously with targeting for an ACT of more than 200 seconds. After ICA, CCA and ECA were clamped respectively, proximal of ICA was cut at bifurcation level obliquely involving severe calcific segment of distal CCA, while distal of ICA was transected at level where the stenotic lesion ended. Harvested GSV was interposed instead of transected and resected ICA segment. Air and atherosclerotic debris were removed just before completion of anastomoses, and clamps on CCA, ECA and ICA were released. Protamine was administered intravenously to neutralize the effect of unfractionated heparin. After the check for bleeding, subcutaneous tissues and skin were closed and the operation was terminated.

RESULTS: The mean age of patients was 66.4±7.9 years. The mean clamp time and total operation time were 19.0±3.0 and 76.1±12.4 min, respectively. As early postoperative complications, hematoma occurred in two patients and TIA in one patient, no major complications were observed. During the follow-up duration that ranged between 24 and 90 months with a mean follow-up time of 54 months, significant ICA stenosis (>50%) was detected in only one patient while remaining 25 patients had no significant restenosis. Aneurysm formation was observed in none of patients during follow-up.

CONCLUSIONS: The described novel technique could be practically and safely performed in selected cases, and might be considered as an alternative approach to conventional endarterectomy techniques for surgical treatment of carotid artery disease.

Table 1: Patient characteristics in the study population

Patient	Age (year)	Gender	Comorbid disease	Smoking	Clamp time (min)	Operation time (min)	Length of hospital stay (day)	Complication	Follow-up time (month)	Aneurysm formation	Restenosis > 50%	PSFV (cm/sec)
1	65	Male	HT, HL	+	22	90	3	-	24	-	-	50
2	72	Female	HT, DM	-	20	75	3	-	24	-	-	50
3	66	Male	CAD	+	15	52	2	-	27	-	-	70
4	80	Male	HT, HL	-	20	88	3	-	32	-	-	100
5	65	Male	HT, CAD, CRF	+	16	65	5	Hematoma	32	-	-	80
6	57	Female	HT, DM	+	20	96	2	-	33	-	-	80
7	53	Male	HL	+	18	63	3	-	36	-	-	50
8	66	Male	CAD,COPD	+	17	67	3	-	36	-	-	60
9	60	Female	HT, DM,	-	24	90	4	-	36	-	-	90
10	72	Male	HL, CAD	-	22	90	3	-	40	-	-	60
11	58	Male	HT, HL	+	25	80	2	-	42	-	-	100
12	69	Male	-	-	18	67	3	-	47	-	-	70
13	75	Male	COPD	+	16	70	4	-	48	-	-	70
14	66	Female	Obesity	+	20	72	2	-	55	-	-	80
15	47	Male	DM, Obesity	+	14	60	3	-	56	-	-	50
16	70	Female	HT, DM	-	17	75	3	-	60	-	-	50
17	82	Male	HL, CAD	-	18	66	4	-	63	-	-	80
18	73	Male	HT	+	15	60	3	-	66	-	-	70
19	60	Female	DM,Obesity	-	20	80	3	-	72	-	-	90
20	72	Male	HT, HL	+	23	100	4	TIA	72	-	+	190
21	67	Female	HT, CRF	-	19	75	3	-	77	-	-	70
22	64	Female	HT, CAD	+	17	84	2	-	81	-	-	50
23	75	Male	DM, CAD	-	18	90	3	-	84	-	-	50
24	67	Male	-	+	16	65	5	Hematoma	84	-	-	70
25	69	Male	HT, DM	+	24	84	3	-	88	-	-	90
26	66	Male	CAD	+	20	75	2	-	90		-	90

CAD: Coronary artery disease; COPD: Chronic obstructive pulmonary disease; CRF: Chronic renal failure; DM: Diabetes mellitus; HL: Hyperlipidemia; HT: Hypertension; PSFV: Peak systolic flow velocity; TIA: Transient ischemic attack

Keyword: *Carotid artery disease, carotid artery endarterectomy, novel surgical technique*

ID: 54

Topic:

Cardiovascular Surgery > Peripheral artery disease and treatment

Presentation Type:

Oral Presentation

Intracerebral Hemorrhage After Discharge from Carotid Endarterectomy Procedure: An Extraordinary Complication Despite Standard Anticoagulation

MD Huseyin Demirtas , Assoc. Prof. Abdullah Özer , MD Mehmet Burak Gülcan* , MD Hacı Delibas , Prof. Gürsel Levent Oktar

Gazi Üniversitesi Hastanesi, Kalp ve Damar Cerrahisi AD.

Intracerebral Hemorrhage After Discharge from Carotid Endarterectomy Procedure; An Extraordinary Complication Despite Standard Anticoagulation

Objective

Carotid artery disease is the most important source of cerebrovascular diseases, causing a high rate of morbidity and mortality. While there are medical and interventional treatment options for carotid artery disease, carotid endarterectomy is the gold standard treatment for severe carotid artery stenosis.

Methods

There is only one patient in our study, because our study is a case report. It is about a rare clinical entity regarding carotid endarterectomy, intracerebral hemorrhage. Thus it has a novel complication.

Results

Our study focuses on a rare complication encountered in a 74-year-old female patient who underwent carotid endarterectomy for carotid artery disease. Our patient, who had a smooth postoperative course, developed intracranial hemorrhage after discharge. This complication, occurring under standard antiplatelet therapy, is quite rare in the literature.

Conclusion

Even if being a rare condition, intracerebral hemorrhage may be encountered after carotid surgery and interventions. Thus, it should be considered when planning the procedure. Although encountering such a rare complication is not sympathetic to a practitioner, it is our scientific duty to declare this seldom complication in order to contribute to the literature. Altered hemodynamic functioning of existing ischemic areas is blamed for this pathology,

but it is also a normal condition for elderly patients, that the dilemma and has no certain conclusion. Thus, our study is important to put this situation on the table.

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Keyword: *Endarterectomy, Carotid, Carotid Artery, Internal, Carotid Stenosis, Subarachnoid Hemorrhage, Cardiovascular Diseases*

Oral Presentation Session

How to Approach Peripheral Venous Problems: A Surgical Perspective

Date: 06.06.2024 Time: 17:00 – 18:00 Hall: 5

ID: 93

Topic:

Cardiovascular Surgery > Vascular surgery and vascular access

Presentation Type:

Oral Presentation

Basilic Vein Superficialization in Patients who Underwent Brachiobasilic Arteriovenous Fistula Operation for Hemodialisis Purposes: Our Single Center Experiences

MD Onur Emre Satılmış* , Assoc. Prof. Yusuf Kuserli
Bakırköy Dr. Sadi Konuk Education and Research Hospital, Istanbul, Turkey

BACKGROUND

Autogenous arteriovenous (AV) fistulas are great importance in chronic kidney disease (CKD) patients. In patients undergoing long-term dialysis, AV fistulas may cease to function effectively as a result of various complications. After the termination of AV fistulas created using the cephalic vein, the last autogenic method is to create an AV fistula with the basilic vein. It is known that the 1-year patency rate of brachiobasilic AV fistulas is up to 90%.[1] In brachiobasilic fistulas with such high patency rates, superficialization of the basilic vein is required to intervene in the basilic vein during hemodialysis. We aimed to share the early results of our patients to whom we applied basilic vein superficialization.

METHODS

At the Department of Cardiovascular Surgery of Bakırköy Dr. Sadi Konuk Education and Research Hospital, 18 CKD patients who underwent brachiobasilic AV fistula between January 2021 and December 2023 were retrospectively examined. The same surgical technique was applied to creating an AV fistula and after maturation, basilic vein superficialization. Early postoperative results were evaluated.

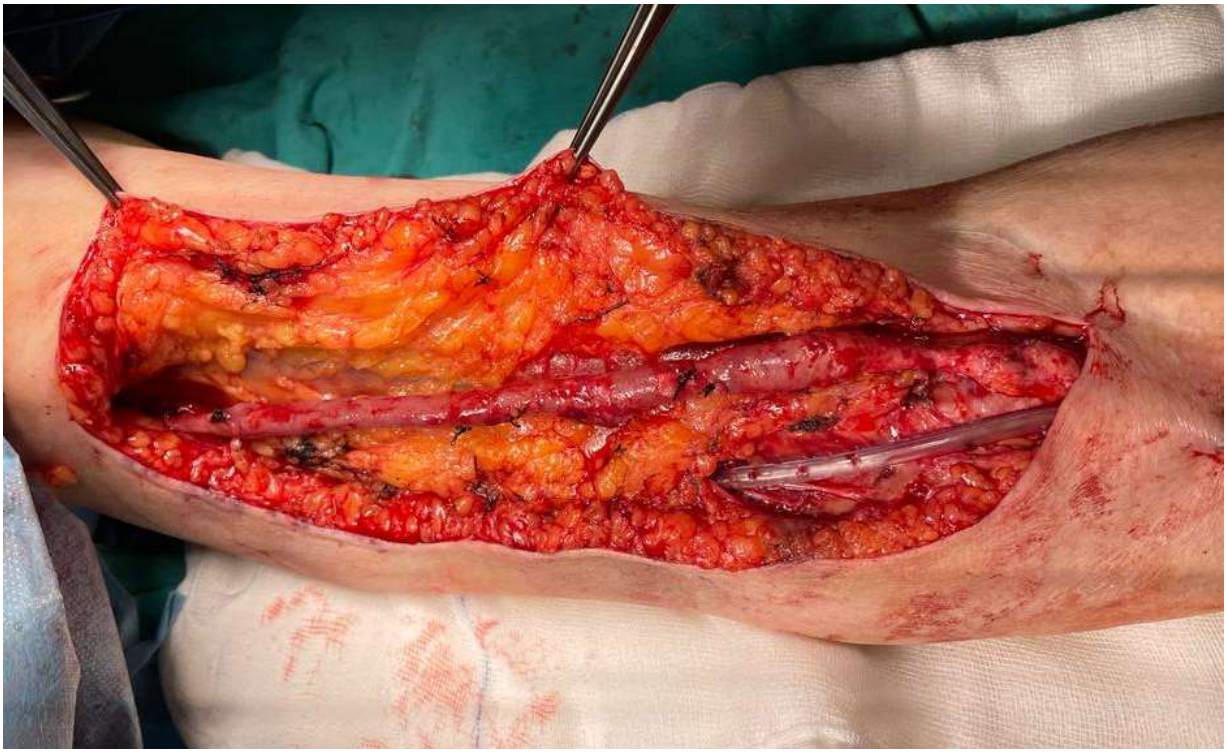

Figure 1. Superficialization of the basilic vein

RESULTS

55.56% (n=10) of the patients were female and 44.44% (n=8) were male, and the average age was 51.5 years. At the first month follow-up of the patients, it was observed that the fistula flow had reached sufficient flow (fistula maturation rate: 94.44%) except for one patient. Of the 17 patients who underwent basilic vein superficialization, one (n=1, 5.88%) had a hematoma in the basilic vein line and one (n=1, 5.88%) had bleeding from the incision line. These patients were taken into operation again. No complications were observed in 15 patients (88.24%). In the first 1-year short-term follow-up of the patients, it was observed that all of them were undergoing hemodialysis without any problems.

		n	%
Total number of patient		18	
Gender	***Male***	8	55,56
	Female	10	44,44
Median age (min-max)		51,5 (31-67)	
AV fistula maturation in the first month	***Yes***	17	94,44
	No	1	5,56
Complications in basilic vein superficialization ***(n=17)***	***Hematoma***	1	5,88
	Bleeding	1	5,88
	No complication	15	88,24
Number of patients with undergoing hemodialysis in the first six months ***(n=17)***		17	100

Table 1. Results

CONCLUSIONS

It can be said that dialysis with an autogenous AV fistula increases patient comfort compared to the use of dialysis catheters or non-autogenous grafts. Autogenous AV fistulas are the first method to be considered, and if the cephalic vein has been used before or is not suitable, the use of the basilic vein is a safe and must-be considered option.

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Keyword: *Chronic kidney disease, Arteriovenous fistula, Basilic vein superficialization*

ID: 6

Topic:

Cardiovascular Surgery > Vascular surgery and vascular access

Presentation Type:

Oral Presentation

Surgical dilemma ligation versus repair of venous injuries: cohort study of a single vascular center in Najaf/Iraq

Assoc. Prof. Laith Sharba[*] [1] , MD Ahmed Fahad[2] , Assoc. Prof. Adel Al-Mayaly[3]
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[2] Vascular surgeon, Najaf Health Directorate, Teaching Medical City, Department of Surgery
[3] Medical College / Jabir Ibn Hayyan University for medical and pharmaceutical sciences. Najaf / Iraq

Surgical dilemma ligation versus repair of venous injuries: cohort study

of a single vascular center in Najaf/Iraq

Abstract:

Background: This study delves into the surgical treatment of venous injuries, emphasizing the sites of venous injuries, hemodynamic state, and other factors**.** Our study involves our jobs in treating venous injuries in our vascular centers over decades, focusing on seeing the difference between two main strategies: ligation or repair. This dilemma is still challenging for many vascular surgeons around the world.

Methods: The research was executed from 2003 to 2018 at the Advanced Vascular Institute within Najaf's specialized surgical hospital, encompassing 270 subjects with acute venous traumas who received various vascular surgical treatments, predominantly males aged 4-66. Exclusions were made for instances lacking comprehensive data, lost to follow-up, or discontinued data collection.

Result: P-value and chi-square tests were used to analyze data to create guidelines for future work with the factors that influenced our decision on the kind of surgery (ligation or repair). Post-operative follow-up related to the type of surgical ligation versus repair was the core of our study. On the 4th postoperative day, 108 instances (31%) were recorded, with 96 undergoing vein ligation and 12 vein repairs. The chi-square value was 11.8, showing high significance ($P < 0.01$). Amputation in 20 cases (6,2%), all treated by ligated vein and none by repaired vein. The chi-square value was 3.34, indicating significance ($P < 0.1$). Surgical Revision was seen in 16 instances (5%), all ligated veins, with a chi-square value of 2.85, showing significance ($P < 0.1$).

Our study's 2.96% mortality rate was related to pre-surgical hemodynamic state rather than surgical options.

Conclusions: The ongoing discourse on whether to repair or ligate veins raises concerns regarding limb salvage, particularly in the lower extremities. Our data showed a 6.2% rate of amputations. Notably, our records showed no limb loss following venous repair, suggesting a potential reduction in amputation rates. In cases where venous ligation was combined with arterial repair, subsequent revision surgeries were often necessary, hinting that vein repair might decrease the need for such procedures. Lesions on the femoral and popliteal veins were particularly problematic, significantly contributing to morbidity. Several studies recommend avoiding ligation in these regions unless necessary.

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Hughes CO, Patel ST, Johnson AW. Venous injuries: A surgical perspective. J Vasc Surg. 2020;71(4):1362-1370.
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Jones KG, Hughes CO, Patel ST. Hemodynamic considerations in the choice of venous repair: A 6-decade analysis. Vasc Endovascular Surg. 2022;56(1):75-81.
Sharma SK, Turki M, Davies AH. Venous ligation versus repair: a meta-analysis of current literature. Vasc Endovascular Surg. 2020;54(1):15-23.

Keyword: *Popliteal vein injury, Ligation versus repair, postoperative venous surgical follow-up, Complications following venous surgery, Venous injury reconstruction*

ID: 36

Topic:

Cardiovascular Surgery > Coronary artery disease - CABG surgery

Presentation Type:

Oral Presentation

Is Endoscopic Vein Harvesting Using "No Touch" Technique Safe for Lower Extremities?

MD Viktor Vaykin* , MD Mikhail Riazanov , Prof. Alishir Gamzaev , MD Anton Maximov , MD Bolshuhin George

Specialized Cardiosurgery Clinical Hospital, Nizhny Novgorod, Russia

Objective: Despite the growing trend towards performing full arterial revascularization, great saphenous vein remains the most commonly used conduit. Harvesting of vein in a flap with surrounding tissues ("no touch") and its perfusion without dilation allows to achieve high viability of vein as a conduit and maintain patency for a long time, however, causes a significant number of postoperative wound complications. The aim of our study was to compare the clinical and functional state of lower limb after endoscopic vein harvesting in a flap and skeletonized.

Methods: 452 cases of endoscopic harvesting of great saphenous vein performed in 2018-2023 were analyzed. They were divided into 2 groups: group 1 (n=184) included patients who underwent endoscopic vein harvesting using skeletonized technique, the second group (n=268) included patients whom veins were harvested endoscopically in a flap. Concomitant pathology and other factors affecting the healing process of postoperative wounds were evaluated in both groups, no statistical difference was found.

Results: During the examination in the early postoperative period, 34 complications (18.5%) from the lower limb were revealed in group 1, hematomas of lower leg were detected in 25 cases (13.6%). In addition, there were 31 cases (16.8%) of acute lymphovenous insufficiency, manifested by edema up to the ankle. 53 complications (19.8%) in group 2 were diagnosed. Acute lymphovenous insufficiency occurred in 49 cases (18.9%), with edema spreading up to ankle. 38 patients (14.2%) had hematomas. However, in group 2 203 patients (75.7%) had neuropathies, manifested by hypesthesia in the area of vein allocation in the lower leg, which was absent in group 1.

Conclusion: Endoscopic harvesting of vein in a flap allows to minimize surgical trauma and procure a conduit with a good prognosis of functioning, corresponding to modern standards of revascularization. The number of complications is small, equals to endoscopic harvesting of skeletonized vein and does not have any significant impact on the rehabilitation of patients. However, due to the fact that vein harvests in a flap together with n. Saphenous, there are frequent cases of decreasing of skin sensitivity in the lower leg.

Keyword: *CABG, endoscopic vein harvesting*

ID: 162

Topic:

Cardiovascular Surgery > Vascular surgery and vascular access

Presentation Type:

Oral Presentation

Could standardization for High Flow Access be a great relief for the surgeon? Our acceptable results for brachiocephalic aretiovenous fistula binding.

Assoc. Prof. Ferit Kasimzade* , MD Bahadır Aytekin
Department of Cardiovascular Surgery , Ankara Bilkent City Hospital

"High Flow Access"(HFA) is always a current problem for hemodialysis patients with CRF. High output may cause various consequences such as heart failure, venous hypertension, and steal syndrome. It is most important for treatment, recognition of this situation. In addition to all skills, the surgeon planning surgery in this patient group also requires good skill in using Doppler ultrasound. Preoperative, intraoperative and postoperative accurate flow measurement is the main pillar for surgery indications and patient selection.

We reduced the flow using the binding method in 23 patients with Brachiocephalic - avf (BC) whose flow rate was higher than 2100ml/min. We used 4mm bougie as a guide during binding. In our 6-month follow-up, we found the flow rates to be below 1170ml/min on average. These acceptable results may facilitate binding of the juxtaanastomotic outflow vein without requiring ultrasound measurement.

References:

Nojima, T.; Motomiya, Y. Pathophysiology of High Flow Access and Surgical Flow Reduction Procedures. Kidney Dial. 2021, 1, 36-46. https://doi.org/10.3390/kidneydial1010007
LokCE,HuberTS,LeeT,etal;NationalKidney Foundation. KDOQI clinical practice guideline for vascular access: 2019 update. Am J Kidney Dis. 2020;75(4)(suppl 2):S1-S164. doi:10.1053/j.ajkd.2019. 12.001

Keyword: *High Flow Access, high flow arteriovenous fistula*

ID: 131

Topic:

Cardiovascular Surgery > Other

Presentation Type:

Oral Presentation

Recommended Approach for Yellow Nail Syndrome in Isolated Pericardial Effusion: What Should We Do in Very Rare Cases?

MD Özgür Barış[*] [1] , MD Gözde Selvi Güldiken[2]
[1] Kocaeli University, Faculty of Medicine, Department of Cardiac and Vascular Surgery
[2] Kocaeli University, Faculty of Medicine, Department of Pulmonary Diseases

Recommended Approach for Yellow Nail Syndrome in Isolated Pericardial Effusion: What Should We Do in Very Rare Cases?

BACKGROUND: Yellow Nail Syndrome is a rare condition characterized by the presence of at least two of the following: thickened and yellow-discolored nails, lymphedema, and respiratory tract involvement. The exact cause of this syndrome is not well understood. Although pericardial effusion without pleural effusion is uncommon, this condition typically results in lymphedema in the lower extremities, recurrent pleural effusion, bronchiectasis, chronic sinusitis, and cough. In surgical treatment for pericardial effusion, careful planning is necessary to account for the possibility of recurrence.

METHODS: A fifty-two-years-old male patient was admitted due to cough, shortness of breath and edema in the legs, which started two months ago. He was diagnosed with yellow nail syndrome seven years ago, and Echo-guided percutaneous pericardiocentesis was performed at an external center due to pericardial effusion one-and-half months ago. The patient was relieved after pericardiocentesis, but when the complaints recurred a short time later, the patient was recommended a sternotomy at an external center. There was no history of occupational exposure, drug use or additional chronic disease. The patient, who

quit smoking five years ago, had thirty pack-years of smoking. Physical examination revealed significant thickening, yellow discoloration, dysmorphic appearance and lunula loss in all fingernails and toenails. Heart sounds sounded deep. He had prolonged expiration, pitting edema in both lower extremities, and hardening of the skin. No additional pathology was detected in other system examinations. Low voltage was observed on ECG. Echocardiography showed a 1.5 cm pericardial effusion. Thorax-CT showed only 1.5 cm thick pericardial effusion. Complete blood count, metabolic parameters and acute phase reactants were normal.

RESULTS: In surgical treatment, left mini thoracotomy was used to open the pericardial window and a tube thoracostomy was performed. Pericardial effusion sample resulted in exudate. Pericardial fluid was negative for acid-fast microorganisms and adenosine deaminase level was within the normal range. Rheumatoid factor and other immunological markers were found to be negative. No hypermetabolic area was observed in the PET-CT image performed for possible malignancy control. The patient was started on 400 mg oral vitamin-E three times a day and 0.5 mg colchicine twice a day and was closely monitored.

CONCLUSIONS: Yellow nail syndrome is primarily characterized by pleural effusion, lymphedema and nail changes. Malignancies and autoimmune diseases may accompany the syndrome. Pericardial effusion without pleural fluid has been reported very rarely in the literature. Yellow nail syndrome should be kept in mind in the presence of nail changes and lymphedema in patients presenting with recurrent pericardial tamponade. We think that choosing a minimally invasive approach in surgical planning for tamponade against the possibility of recurrence is important in terms of patient recovery and comorbidity.

References:

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Mazumder S, Karmali R, Sankar P, et al. Recurrent Pericardial Effusions and Pericarditis Due to Yellow Nail Syndrome. JACC Case Rep. 2023;11:101797. doi:10.1016/j.jaccas.2023.101797

Keyword: *yellow-nail syndrome, pericardial effusion, minimally invasive*

VALVE SUMMIT

Into the Heart of Precision: Aortic ValveSurgery and Beyond

Date: 07.06.2024 Time: 08:30 – 09:30 Hall: 3

ID: 35

Topic:

Cardiovascular Surgery > Surgical treatment of AF

Presentation Type:

Oral Presentation

Efficacy And Safety Of Thoracoscopic Epicardial Ablation Versus Balloon Cryoablation In Treatment Of Persistent Atrial Fibrillation

MD Viktor Vaykin* , MD Mikhail Riazanov , Prof. Alishir Gamzaev , MD Anton Maximov , MD Bolshuhin George , MD Nickolai Shibanov , MD Elisabeth Katsubo , MD Maxim Tremasov

Specialized Cardiosurgery Clinical Hospital, Nizhny Novgorod, Russia

Objective: The increasing number of cases of persistent atrial fibrillation, as well as the unsatisfactory outcomes of conservative treatments, has led us to consider surgical methods of management. Advances in minimally invasive techniques and catheter ablation offer new options for the treatment of atrial fibrillation.

Methods: The results of both methods were studied. The first group (G1) included 114 patients who underwent balloon cryoablation, the second one (G2) included 158 patients who underwent thoracoscopic ablation. General characteristics: age, sex, BMI did not significantly differ in both groups. G1 did not include patients with a duration of persistent AF more than 10 months and with left atrial diameter>4.5 cm. G2 had no restrictions on the timing of the occurrence of AF and the size of left atrium. 24-Holter ECG monitoring was performed after 3, 6, and 12 months and annually thereafter.

Results: Two patients from G1 and one from G2 were discharged with AF, the rest with sinus rhythm. In-hospital stay was 3±1 days in G1 and 6±2 days in G2. In G1 one patient (0.8%) had cardiac tamponade that required pericardial puncture and 4 (3.5%) patients had hematomas of the lower extremities treated conservatively. Among the most significant complications in G2 were 2 (1.3%) cases of sinoatrial block that required pacemaker implantation, 3 (1.9%) relaxation of the right dome of the diaphragm and 26 (16.5%) cases of atrial flutter, stopped by catheter ablation of the cavatricuspid isthmus. In G1 sinus rhythm after 3, 6, 12 months was observed in 83 (72.8%), 75 (65.8%), 62 (54.4%) patients accordingly. After thoracoscopic ablation 143 (90.5%), 132 (83.5%), 124 (78.5%) patients had a sinus rhythm after 3, 6 and 12 months, respectively.

Conclusion: The number of complications in both groups is small and they did not significantly affect the rehabilitation of patients. Thoracoscopic ablation showed higher efficacy in the treatment of persistent AF, however balloon cryoablation provides acceptable medium-term results, less surgical trauma and hospital stay.

ID: 103

Topic:

Cardiovascular Surgery > Congenital heart surgery

Presentation Type:

Oral Presentation

Interrupted right aortic arch and bilateral ductus arteriosus: A case report

MD Loreto Olivos Sánchez[*] [1] , MD Gustavo Kreutzer[2] , MD Carolina Cambiaso[1] , MD Nicolas Vernetti[1] , MD Walter Molteni Morales[1] , MD Manuel Garrido[1] , MD Andres Rosso[1] , MD Willy Conejeros Parodi[1]

[1] Hospital general de niños Ricardo Gutiérrez, Buenos Aires, Argentina

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Antecedent: We present a case of a 23-days old male who assists to the orthopedic service in our center to be evaluated for his left hand agenesia. Physical examination revealed a grade 3/6 systolic ejection murmur at the mid-right sternal border, 2ndreinforced cardiac sound and 3rdcardiac sound. Pulses were normally palpable in the neck and left arm but were weak in the right arm and lower limbs.
The echocardiogram initially diagnosed double aortic arch with severe aortic coarctation, bicuspid aorta, pulmonary hypertension, an atrial septal defect and systolic left ventricular dysfunction.
Interrupted right aortic arch is a rare congenital heart disease with only a few cases published in the literature. Most of them are classified as type B.

Methods: case report, in order to delineate the anatomic details, the patient underwent computed tomography and catheterization both with angiogram. The studies showed interruption of the aortic arch between the right common carotid and right subclavian arteries.

Results: Surgical repair included end-to-side anastomosis between the ascending and descending aorta, bilateral PDA ligation, and left subclavian anastomosis to the left innominated artery. Postoperative underwent uneventfully, he spent 10 days in the ICU and was trasferred to other department to continue studies and follow up by other specialties. Endoscopy service evaluated the patient, finding abscense of signs of air ware compression due to the aortic anastomosis.

Conclusions: The Interrupted right aortic is rare congenital heart disease in which the use of echocardiography a computed tomography in concert proved helpful in these cases to provide comprehensive three-dimensional understanding of vascular and airway anatomy. It is decisive when planning the surgical strategy to have complimentary studies that allows achieving as less comorbidities as possible.

References:

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Type B Interrupted Right Aortic Arch: Diagnostic and Surgical Approaches Tarek Alsaied, MD, MSc Kevin Friedman, MD Marco Masci, MD David M. Hoganson, MD Christopher W. Baird, MD Tal Geva, MD Published:July 15, 2018

Keyword: *Interrupted aortic arch, Interrupted right aortic arch, Pediatric cardiovascular surgery*

ID: 101

Topic:

Cardiovascular Surgery > Congenital heart surgery

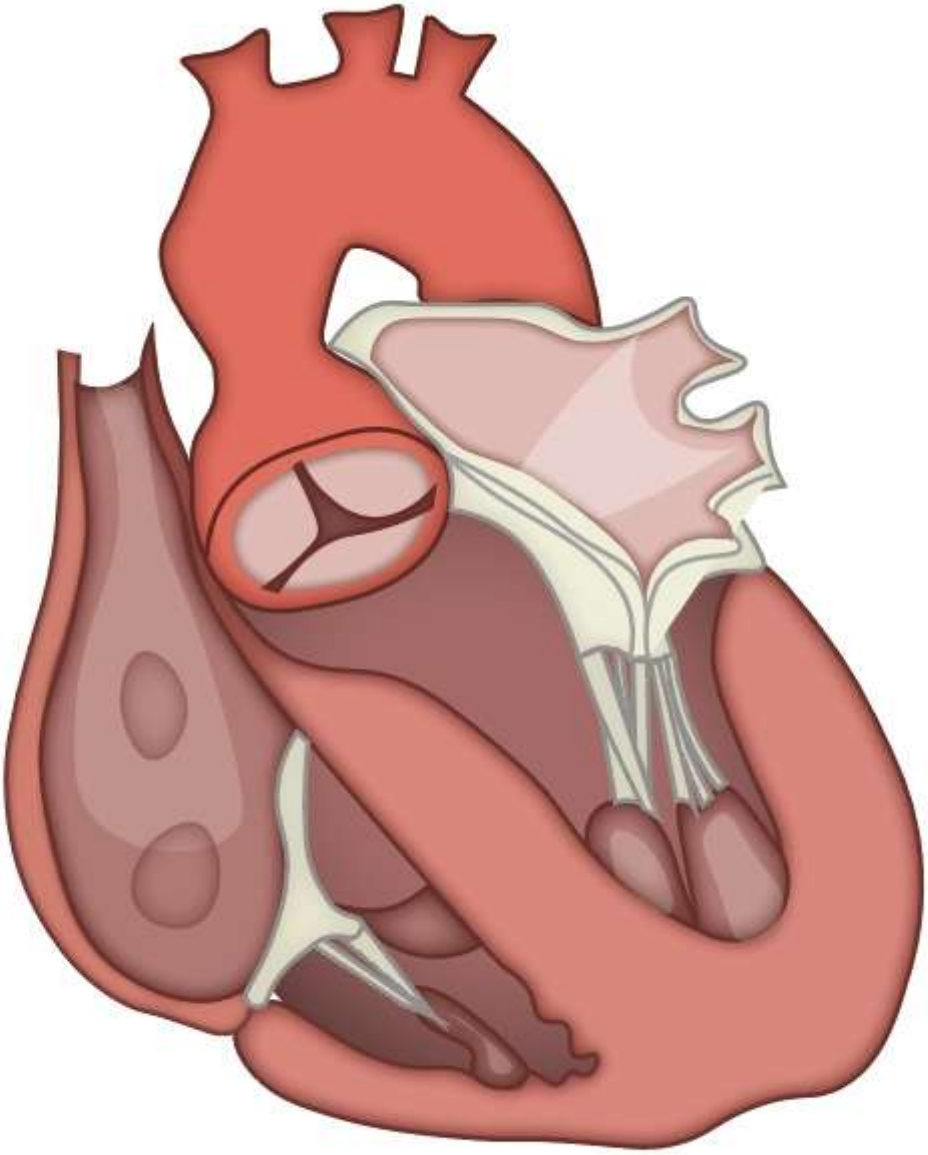
Presentation Type:

Oral Presentation

Five Years Surgical Experience In Aortoplasty In Patients With Supravalvular Aortic Stenosis

MD Carolina Cambiaso* , MD Rosso Andres , MD Willy Conejeros parodi , MD Garrido Manuel
Hospital Gutierrez, Buenos Aires, argentina

Background: Supravalvular aortic stenosis is a rare congenital cardiac defect that is frequently associated with genetic syndromes, characterized by hypertrophy of the aortic muscular layer at the sinotubular level, resulting in a supravalvular narrowing with mean gradients exceeding 30 mmHg and left ventricular hypertrophy, which leads to angina, syncope, dyspnea, and functional class abnormalities which represent the surgical indications. Different surgical approaches exist, being Doty and Brom the techniques utilized in our service
Methods: A retrospective study was conducted involving the review of medical records of patients undergoing surgery between January 2019 and January 2024
Results: Out of 1028 surgical procedures performed within a 5-year period, only 3 were for supravalvular aortic stenosis, accounting for 0.29%. The 3 patients had a genetic syndrome associated, with an age range between 8 and 16 years and a weight range between 19 and 45 kg. Preoperative echocardiograms showed mean gradients at the sinotubular junction ranging from 46 to 93 mmHg, and clinically, they presented with angina and functional class II and III. In two of these patients the Brom technique was used, and the other one underwent the Doty one. They had an average of 2.3 days in the intensive care unit and 13.3 total hospitalization days; 3.3 days of inotropes with a mean immediate postoperative vasoactive inotropic score of 13.8 and 8 at 24 hours; an average of 0.66 days of mechanical ventilatory support and 5.6 days of drainage. None required reoperations, pacemaker placement, or experienced infectious complications within 30 days post-surgery, all showing a functional class I in cardiological follow-ups with an average aortic gradient follow-up of 15 mmHg.
Conclusions: Supravalvular aortic stenosis is a rare condition with severe clinical repercussions and cardiac function impairment. Failure to undergo surgical treatment poses a significant life-threatening risk to the patient. Currently, aortic root reconstruction using these surgical techniques has proven to be an effective method, associated with minimal complications, and allows for long-term improvement in the quality of life for these patients.



Keyword: *Congenital, Supravalvular aortic stenosis, Single center experience, Congenital heart disease, surgical experience*

ID: 22

Topic:

Cardiovascular Surgery > Other

Presentation Type:

Oral Presentation

A RARE CASE OF CARDIAC MYXOMA ORIGINATING FROM THE MITRAL VALVE PRESENTING WITH ST-ELEVATION MYOCARDIAL INFARCT: ESTABLISH A DIAGNOSIS FROM THE SURGERY TABLE

MD PUTRA IMANULLAH[*] [1] , MD ABINISA INAYA TAIM[2] , MD FILIANMI DYOSPAMA PATANDIANAN[2] , MD PENDRIK TANDEAN[2] , MD JAYARASTI KUSUMANEGARA[3]

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[2] Department of Cardiology and Vascular Medicine, Hasanuddin University, Makassar, Indonesia

[3] Department of Cardiothoracic and Vascular Surgery, Hasanuddin University, Makassar, Indonesia

Background: Mitral valve mass has numerous differential diagnosis such as infectious vegetation, papillary fibroelastoma, or very rarely, cardiac myxoma. It is important to differentiate these masses from other valvular lesions as management would be vastly different. The diagnosis commonly achieved through epidemiological and multimodality imaging approach. However, the definite diagnosis requires histologic examination in challenging scenarios, and histopathological characterization remains the diagnostic gold standard.

Case Summary: A 69-year-old male was admitted to cardiac emergency unit with chest pain. Further examinations revealed he was with ST-Elevation Myocardial Infarct Inferoseptal Wall and Pulmonary Oedema. Transthoracic echo revealed a severe mitral regurgitation with an oscillating mass originating from anterior mitral leaflet size 13 mm x 10 mm, these finding suggestive of infective endocarditis. However blood culture examination results were negative. The mitral valve mass was treated as infective endocarditis, but routine evaluation showed no symptom improvement. Coronary angiogram showed 3 vessels coronary artery disease with SYNTAX II score 22. It was decided to undergo a bypass surgery concomitant with mass resection and mitral valve replacement. Histopathologic examination later revealed that the findings of the tissue mass were suitable for a cardiac myxoma.

Conclusions: We reported a rare case of an oscillating valvular mass originating from anterior mitral leaflet presenting as STEMI suspected due to coronary artery embolization. Surgical procedure was done and histopathological examination revealed the mass to be a myxoma.

Video link: https://youtu.be/CoOQeKjrf0U

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Keyword: *myxoma, valvular mass, acute myocardial infarction, cardiac surgery*

Oral Presentation Session

What is New In Aortic Valve Surgery?

Date: 07.06.2024 Time: 08:45 – 09:45 Hall: 5

ID: 88

Topic:

Cardiovascular Surgery > Heart valve repair

Presentation Type:

Oral Presentation

Early-to-Mid-Term Results of the Aortic Valve Neocuspidization for Rheumatic Aortic Valve Disease

Prof. MOHAMMED SANAD* , MD MOHAMMED GABR , MD HATEM BESHIR
MANSOURA UNIVERSITY

OBJECTIVES: There has been a widespread in aortic valve neocuspidization with autologous pericardium recently, but there is limited data in rheumatic heart disease. We reviewed our experience. METHODS: A total of 33 patients (22 men, 66.7%) with rheumatic aortic valve disease (mean age: 39.36±10.81 years) underwent aortic valve replacement between June 2019 and October 2022. The mean Euro Score II was 0.96± 0.17%. RESULTS: The most common pathology was isolated severe stenosis (14 paMents, 42.4%), with bicuspid morphology in 11 patients (33.3%). One patient (3%) had concomitant coronary artery bypass grafting. The mean cardiopulmonary bypass and aortic clamp times were 151±24.26 and 127±21.05 minutes respectively. No perioperative mortality or stroke. One patient who developed significant aortic regurgitaMon, underwent aortic valve replacement prior to discharge. The pre-discharge average peak/mean gradients were 12±3.7/6±2 mmHg respectively. Follow-up was complete (mean: 31.54 ± 12.94 months). Two late mortalities (6%): one due to endocarditis with root abscess and another due to COVID-19. One patient (3%) needed a permanent pacemaker one year later. Overall survival at 1-, 2-, and 4-years were 97%, 97% and 94% respectively and freedom from reoperation was consistent at 97%. The peak/mean gradients remained low at 1- and 3-year follow-up (12±2.7 mmHg/4.8±1.7 mmHg, and 10.14±4.02/4.4±2.3 mmHg respectively). Overall freedom from at least moderate regurgitation at 4-years was 97%. CONCLUSIONS: Our data shows promising results for this procedure in those with rheumatic valve pathology. The hemodynamic data is satisfactory and the early-to-mid-term results are encouraging, however long-term data is needed to determine durability.

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Keyword: *Ozaki, Aortic valve replacement, Aortic valve neocuspidization, Rheumatic heart disease, Rheumatic aortic valve disease*

ID: 69

Topic:

Cardiovascular Surgery > Aortic valve surgery

Presentation Type:

Oral Presentation

Comparison of procedure Ozaki with a biological prosthesis in patients with a small aortic annulus: a multicenter retrospective study

MD Bakytbek Kadyraliev*
Россия, город Пермь

Abstract

Replacement of the aortic valve (AV) in patients with a small aortic annulus has a high risk of prosthesis-patient mismatch (PPM). PPM significantly affects the hemodynamic and functional capabilities of AK, morbidity and mortality in the postoperative period. The gold standard for the treatment of AV diseases is AV prosthetics, but there are also alternative methods, such as neocuspidalization of AV using the method(AVNeo).

Objective:compare the immediate and medium-term results of AV prosthetics using the method (AVNeo) and AV prosthetics with a biological prosthesis in patients with a small aortic annulus.

Materials and methods:a retrospective multicenter study was conducted of 309 patients with a narrow fibrous ring (< 21 mm) who underwent surgery during the period from February 2010 to December 2021. AVNeo was performed in 153 patients and 156 patients. After performing "pseudorandomization" (propensity score matching) 92 patients : 46 patients in the AVNeo group and 46 patients in the biological prosthesis group. The primary endpoint was hospital mortality. The following secondary endpoints were evaluated: postoperative complications and medium-term outcomes (three-year overall survival and freedom from AV re-surgery). up period was 36 months.

Results

Hospital mortality among studied patients did not differ: in the AVNeo group –2 (4,3) and 1 (2,2) in the Bioprosthesis group, p=1,0. Statistically significantlygroupsdiffered in the duration of surgery (275.9±34.2 min in the AVNeo groupand 285.8±37 min in the Bioprosthesis group, p<0.4), cardiopulmonary bypass (98 min in the AVNeo group and 115 min in the Bioprosthesis group, p<0.3), and compression (80 min in the AVNeo group and 93 min in the group of Bioprostheses, p<0.7). There were no significant differences in postoperative complications: wound surface infection (3 (6.3) in the AVNeo group and 1 (2.2) in the bioprosthesis groupp=0.617) kidney injury(1 (2.2) in the AVNeo group and 0 in the bioprosthesis group, p=1.0), stroke (1 (2.2) in the AVNeo group and 2 (4.3)in the

bioprosthesis group, p=1.0), resternotomy for bleeding (0 in the bioprosthesis groupAVNeo and 2 (4.3) in the bioprosthesis group, p=0.495). The peak and average pressure gradient on the AC after surgery was statistically significantly higher in the bioprostheses group compared to the AVNeo group (32 vs. 12 mmHg, p<0.001 and 20 vs. 6 mmHg, p<0.001). three-year overall survival rate was 83% in the groupAVNeo and 92.5%, in the bioprosthesis group, p=0.23; three-year freedom from re-operation-96.4% in the AVNeo group and 97.1%, in the bioprosthesis group, p=0.27.

Conclusions:In the control groups, the time of surgery, cardiopulmonary bypass and aortic clamp significantly differed in favor of the group of bioprostheses. Echocardiographic parameters at discharge showed a better result in favor of the AVNeo group.

ID: 75

Topic:

Cardiovascular Surgery > Minimally invasive aortic valve surgery

Presentation Type:

Oral Presentation

J-sternotomy For AVneo

MD Dzhokhar Khadiev , MD Ally Aziz , MD Artur Mikulyak* , Prof. Vladlen Bazylev
Federal Center For Cardiovascular Surgery, Penza, Russia

BACKGROUND. One of the new techniques for aortic valve replacement is Ozaki procedure. This method allows the formation of an aortic valve with excellent hemodynamic characteristics and a low rate of reoperation both in the early and late periods. Minimally invasive cardiac surgery is widespread in modern cardiac surgery. Despite some difficulties associated with the limitation of the surgical working field, mini J-sternotomy is one of the most commonly used approaches in aortic valve surgery. According to studies, mini-access has a good cosmetic effect and has a number of advantages over full sternotomy in terms of in-hospital and long-term outcomes.

METHODS. In this single-center retrospective study, we compared the clinical results of the Ozaki procedure using the mini approach (Ozaki Mini group, n=30) and full sternotomy (Ozaki Full group, n=112). Due to the differences between the groups in clinical and demographic parameters, to ensure maximum comparability, they were computerized using the PSM (Propensity Score Matching) method, as a result of which 2 groups of 30 patients each were formed. The primary end points of the study were 30-day mortality from any cause and significant postoperative events (myocardial infarction, stroke). Additional categorical outcomes included new-onset atrial fibrillation and renal failure, resternotomy, prolonged (>24 hours) mechanical ventilation, and mediastinitis/sternal instability. Secondary end points were the duration of the operation, the time of myocardial ischemia and cardiopulmonary bypass, blood loss, and the need for transfusion of donor blood components.

RESULTS. There were no significant differences between the groups in 30-day mortality and significant postoperative events (MI, stroke). The duration of surgery and cardiopulmonary bypass was longer in the mini-access group (303 minutes versus 260 minutes, p=0.007 and 139 versus 126 minutes, p=0.024, respectively). The groups did not differ in the time of myocardial ischemia. In the mini-access group, there was less blood loss in the ICU and total blood loss (250 ml vs. 600 ml, $p < 0.001$ and 650 ml vs. 965 ml, $p < 0.001$, respectively). There were no cases of conversion to full sternotomy in the mini-access group.

CONCLUSIONS. The Ozaki procedure can be performed within a J-ministernotomy without increasing the risk of mortality and other significant complications.

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Keyword: *Ozaki procedure, Minimally invasive surgery*

ID: 77

Topic:

Cardiovascular Surgery > Aortic valve surgery

Presentation Type:

Oral Presentation

"Patient-Prosthesis Mismatch" after aortic valve replacement with mechanical prostheses.

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Background: The hemodynamic characteristics of implantable prostheses directly affect the results of surgery, in some cases leading to the development of the prosthesis-patient mismatch syndrome (PPM), especially in patients with a narrow fibrous ring. The frequency of this syndrome after aortic valve replacement reaches 34.2%. The development of new and modification of existing models of mechanical prostheses makes it possible to reduce the incidence of PPM, regardless of the size of the fibrous ring.

Methods. In a retrospective study, the results of aortic valve prosthetics were analyzed in 83 patients, of which 43 (51.8%) patients had mechanical prostheses of landing size 19 and 21 mm (group 1, studied), and 40 (48.2%) prostheses of size 23 and 25 mm (group 2, control). The risk of PPM was assessed by the indexed effective area of the prosthesis opening (IEOA). The discrepancy of the mismatch to the patient was defined as severe with IEOA <0.65 cm2/m2, moderate – 0.65-0.85 cm2/m2. The average age of patients did not significantly differ, and was 57.9±14.9 years in group 1 and 57.6+13.3 years in group 2. The maximum gradient before surgery in the study and control groups was significantly different: 85.8±27.9 and 68.5±28.3 mmHg, respectively. The average gradient also differed significantly: 48.8±17.6 and 38.4±15.6 mmHg, respectively. The prostheses were implanted in the supraannular position in all cases.

Results. The time of CBP and the time of aortic occlusion in the study group (152+35.9min and 99+27.7min) did not significantly differ from the control group (143+25.9min and 95+21min).

The peak gradient after surgery in the study and control groups did not reveal significant differences: 20.8±7.2 and 16.3±4.7 mmHg, respectively. The average gradient also did not differ significantly: 10.2±4.1 and 8.5±2.9 mmHg, respectively. The IEOA in both groups were expected to show a significant difference, but in both groups there was no severe mismatch syndrome, moreover, in the vast majority the indicators were higher than 0.85 cm2/m2.

Conclusions. The analysis of long-term results in terms of up to 5 years shows that low-profile double-leaf mechanical prostheses are effective for any size of the fibrous ring and provide adequate values of IEOA, reducing the risk of severe mismatch to a minimum.

ID: 2

Topic:

Cardiovascular Surgery > Minimally invasive aortic valve surgery

Presentation Type:

Oral Presentation

Aortic valve replacement by Mini-J sternotomy in patient with BMI more than 31.

Assoc. Prof. Mikhail Fomenko* , Prof. Yuri Schneider , Assoc. Prof. Victor Tsoi
Cardiovascular Surgery

Background: So, today in world practice aortic valve replacement is performed by median sternotomy, minimally invasive approaches and transcatheter methods. But each technique has limitations and advantages, and impossible to generalize one technique for all patients, considering individual surgical features in each patient. Another problem is any benefit for aortic valve replacement by mini-J sternotomy in obese patients. The aim of study was to evaluate outcomes of aortic valve replacement performed through mini-J sternotomy compared with full sternotomy in obese patients.

Methods: Between October 2012 to December 2023, in our Center was performed 761 operations - isolated aortic valve replacement. Aortic valve replacement by mini-J sternotomy performed in 263 cases (34.5%). Body mass index (BMI) was more 31 in 63.5% cases (167 patients) and in 36.9% cases (97 patients) BMI was more 35. The mean was 67.8 ± 12 years. In study prevailed female: 57.4%. Mean peak gradient on aortic valve was 74.2 ± 19.8 mm Hg. Art. Mean EuroScore II was 2.6 ± 0.5%.

Results: Hospital mortality was 0.6% (1 patient). Operations relation complications: complete atrioventricular block, interventricular septal defect - not significantly differ (p = 1.0). Mean duration of operation and on pump time was: 205.9 ± 20.9 and 65.5 ± 12.5 minutes. Mean follow-up period was 61.1 months (95% CI 51.6 – 66.4). The survival rate was 99.2%, 94.4% and 89.3%%. The freedom from thromboembolic events was 100%, 95.5% and 92.3%.

Conclusion: Aortic valve replacement by mini-J sternotomy in obese patients is safety and effective procedure who demonstrates good mid-term results.

Keyword: *Mini-J sternotomy, aortic valve, heart valve replacement*

ID: 26

Topic:

Cardiovascular Surgery > Heart valve repair

Presentation Type:

Oral Presentation

Tricuspid Valve Laceration and Aorta-Right Ventricular Fistulization Repair in a Patient Who Underwent Aortic Valve Replacement Seventeen Years Ago

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Necmettin Erbakan Universty Cardiovascular Surgery

Objective: Reoperation cardiac surgery cases are highly challenging and may be associated with morbidity and mortality. In this study, we present a case with dyspnoea for 2 months after aortic sac replacement 17 years ago. Echocardiography showed moderate-to-severe tricuspid regurgitation and subaortic ventricular septal defect, which were thought to be caused by the first operation. There was also moderate mitral regurgitation. We would like to share the different diagnosis and successful surgery of the case.

Methods: A 63-year-old male patient had dyspnoea for about 3 months. His past medical history included hypothyroidism, Coumadin-induced gastrointestinal bleeding 2 months ago and mechanical aortic valve replacement 17 years ago. Echocardiography revealed a functional prosthetic valve in the aortic valve position, moderate mitral regurgitation, moderate to severe tricuspid regurgitation and ventricular septal defect. Transesophageal echocardiography (TEE) showed a prosthetic valve in the aortic valve position and a pouch-shaped cystic structure under the tricuspid valve in the right ventricle. Severe regurgitation was observed through this structure towards the right ventricle. It was thought to be associated with the subaortic region (colour transition between left ventricle and right ventricle) and mitral regurgitation was evaluated as eccentric second degree. Surgical decision was made in the Cardiology-Heart and Vascular Surgery council. Right atriotomy was performed after bicaval and aortic cannulations. A laceration approximately 1 cm in length was observed on the septal leaflet of the tricuspid valve and was repaired with 5/0 prolene suture. Aortic-right ventricular fistulisation was observed on the noncoronary leaflet of the aortic valve and repaired with primary plegitated suture. Mitral valve was then accessed through interatrial septotomy. The posterior leaflet was resected subtotally and the anterior leaflet was resected completely. 31 no carbomedics optiform mitral valve was replaced. Intraoperative TEE was performed and normalisation of the fistula and valvular insufficiency was observed.

Results: The patient's laceration of the tricuspid valve and aorta-right ventricular fistula were thought to have resulted from his first operation. Symptoms were probably aggravated by an increase in mitral regurgitation. Postoperative control echocardiography was performed. No pathology was observed and the patient was discharged on the 10th postoperative day with healing.

Conclusion: Reoperation cardiac surgery cases may present with various pathologies. Anatomical neighbourhoods should be well known and care should be taken during the first operation to avoid secondary problems. Intraoperative TEE evaluation is important for successful surgery. Different procedures may be required during surgery according to the pathology.

Keyword: *Reoperation, mitral valve replacement, tricuspid valve laceration, aorta-right ventricular fistula*

ID: 19

Topic:

Cardiology > Diseases of aorta

Presentation Type:

Oral Presentation

Partial Sternotomy Versus Full Sternotomy During Hemiarch Repair For Ascending Aortic Aneurysm

MD Dmitri Panfilov*, MD Boris Kozlov
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BACKGROUND: Partial sternotomy approach is increasingly used for the treatment of ascending aortic aneurysms. Objective of the study was to analyze early outcomes of hemiarch repair using partial sternotomy in patients with ascending aortic aneurysm.

METHODS: From January 2020 to December 2023, a total of 116 patients received ascending aortic replacement with concomitant hemiarch repair in our centre. Among them, 87 patients had ascending aortic aneurysm. Patients were divided into 2 groups depending on surgical approach: full sternotomy (FS, n=54) and partial sternotomy (PS, n=33). Pre-, intra- and postoperative data were analyzed.

RESULTS: Overall in-hospital mortality was 2 (3.7%) vs. none in FS group and PS group, respectively (P=0.564). There was no permanent and temporary cerebral neurological deficit in both groups. The rate of postoperative respiratory failure, acute kidney injury was 5.6% versus 3% (P=0.061) and 9.3% versus none (P< 0.001) in FS group and PS group, respectively. Re-exploration for bleeding was required in 1 (1.9%) FS patient and in 1(3%) PS patient (P=0.238).

CONCLUSION: Ascending aortic replacement with concomitant hemiarch repair for ascending aortic aneurysm through partial sternotomy is an effective and safe approach with acceptable early outcomes.

Keyword: *hemiarch repair, Partial sternotomy, full sternotomy*

Oral Presentation Session

Experiences in Minimally Invasive Coronary Surgery

Date: 07.06.2024 Time: 10:00 – 11:00 Hall: 5

ID: 79

Topic:

Cardiovascular Surgery > Coronary artery disease - CABG surgery

Presentation Type:

Oral Presentation

ENDOSCOPIC LIMA HARVESTING FOR MINIMALLY INVASIVE CABG

MD Dmitry Khvan* , MD Khava Agaeva , MD Dmitry Sirota , MD Maksim Zhulkov , MD Alexandr Makaev , Prof. Alexander Bogachev-Prokophiev , Prof. Aleksandr Chernyavskiy

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BACKGROUND.

Minimally invasive coronary artery surgery offers many benefits to patients today. However, this is a challenge for the surgeon and requires the highest level of skill. The left internal mammary artery (IMA) remains the key conduit for revascularization of the left anterior descending artery. Harvesting of the IMA of appropriate length, without steal syndrome and excess traction of the ribs is an important and technically challenging step. Endoscopic harvesting of the IMA facilitates this step and becomes an optimal option for minimally invasive coronary artery bypass grafting.

METHODS.

This is a single-center retrospective cohort study. We analyzed the data of 364 patients, who underwent minimally invasive coronary artery bypass grafting MIDCAB and MICS CABG. 165 (45.3%) patients with LIMA endoscopic harvesting were included in study. The primary end-point was freedom from major adverse cerebrocardiovascular events (MACCE).

RESULTS.

Minimally invasive coronary artery bypass grafting was performed in all patients. Median age was 62 years, body mass index was 28,7 and 71,5 % were male. Diabetes mellitus was diagnosed in 22,4% of patients. The mean operation time was 205 ± 10 min. LIMA was not damaged in this cohort. There was no conversion to sternotomy or to on-pump procedure. Reoperation for bleeding was in 1,6%. Myocardial infarction, PTCI and stroke were in 0,5%,

1,6% and 1% of patients respectively. There was no in-hospital mortality. 4-years survival rate was 95,1% and freedom from MACCE 87,1%.

CONCLUSION.

Endoscopic harvesting of the IMA is feasible and safe approach with good long-term results. It should be performed at centers with considerable experience in minimally invasive bypass surgery. This technique facilitates minimally invasive coronary surgery.

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Keyword: *endoscopic harvesting, internal mammary artery, MIDCAB, MICS CABG, coronary artery bypass grafting*

ID: 91

Topic:

Cardiovascular Surgery > Coronary bypass surgery

Presentation Type:

Oral Presentation

Thoracoscopic Assistance in MIDCAB Procedure

MD Kirill Kozirin*

A.V. Vishnevsky National Medical Research Center of Surgery, Moscow, Russian Federation

BACKGROUND To analyze effectiveness of thoracoscopic assistance at MIDCAB procedure in patients with isolated LAD stenosis.

METHODS 514 patients with left anterior descending artery (LAD) lesion were enrolled in the study: 139 of them underwent revascularization by direct vision via left anterior minithoracotomy (MIDCAB), and 375 patients underwent MIDCAB procedure with thoracoscopic assistance.

Indications for surgery were hemodynamically significant stenosis or occlusion of LAD (with high-risk or impossibility of PCI), high-grade angina, positive stress test in asymptomatic patients. Clinical characteristics in both groups had no significant differences.

In the second group thoracoscopic assistance were used to pleuroscopy, pericardioscopy and left internal mammary artery harvesting. In both group LIMA to LAD anastomosis were performed by direct vision.

RESULTS Both methods have demonstrated high efficacy and safety. All patients underwent off-pump LIMA-LAD grafting via MIDCAB. Good patency of the grafts were confirmed with flowmetry in at the OR. There were no deaths, MACCE, repeated revascularization in the in-hospital period. The average in-hospital stay was 7± 1,9 days. Blood loss was 240+ 57 ml, ICU length of stay was 16±3.9 hrs.

There were statistical differences in in-hospital and 1-month follow up results: operation time in the second group was shorter (181±34 min in the first group and 138±26 min in the second group). There were 8 conversions to sternotomy(5,7%) in the first group, mainly because of LIMA damage. There were 4 conversions to sternotomy (1%) in the second group . We suppose that the difference in conversions rate (p=0,03) were caused by better thoracoscopic visualization. At 1-month follow-up the incidence of wound complications were 12 cases in the first group (8,6%) (caused by retraction injury) and 3 cases in the second group (0,8%) (p=0,001).

CONCLUSIONS It should be noted that MIDCAB with thoracoscopic assistance have better results than MIDCAB by direct vision. We consider thoracoscopic assistance as a part of MIDCAB technique.

ID: 59

Topic:

Cardiovascular Surgery > Minimally invasive CABG

Presentation Type:

Oral Presentation

Is Quality Assured? Assessing Minimally Invasive Coronary Artery Bypass Grafting with Graft Angiography

MD Taiki Ito* , MD Shun Watanabe
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BACKGROUND: Minimally invasive coronary artery bypass grafting has been increasingly adopted throughout the world. Although the 2018 EACTS/ESC guidelines do not make any formal recommendation regarding minimal-access surgery, recent studies have shown equivalent rates of complications and mortality compared to full sternotomy. However, it remains uncertain whether equivalent quality of anastomosis can be achieved without sternotomy.

METHODS: We studied 20 cases of minimally invasive coronary artery bypass grafting with 43 anastomoses (6 cases of MIDCABG and 14 cases of MICS CABG) performed by a single surgeon at our institution. All surgeries were performed off-pump, via a left anterior mini-thoracotomy in the fifth intercostal space, located in the infra-mammary fold underneath the nipple. The standard strategy for graft selection involved the use of bilateral internal thoracic arteries, with proactive use of the gastroepiploic artery for the right coronary artery. In all cases, intraoperative pulsatility indexes (PIs) and diastolic filling percentage (DF%) was measured for flow assessment. Postoperative graft angiography was also performed to all 20 cases by a cardiologist and the worst appearance in four-plane views were visually determined subjectively.

RESULTS: The grafts used in MICS CABG included LITA in 14 cases, GEA in 10 cases, RITA in 8 cases, and SVG in 2 cases. Average number of anastomoses for MICS CABG was 2.6 ranging from 2 to 5. Intraoperative assessment of coronary arteries revealed a mean PI of 1.51±0.61 and DF% of 81.6±13%. Postoperative graft angiography showed excellent graft with unimpaied runoff in 95% (41 anastomoses), stenosis reducing caliber >50% in 2% (1 anastomosis), and occlusion in 2% (1 anastomosis). Angiographic flow pattern was completely antegrade in 91% (39 anastomoses) and competitive in 7% (3 anastomoses). All competitive flow grafts were anastomosed to a coronary artery with stenosis of 75% or less. No complications occurred related to the coronary angiography.

CONCLUSIONS: Minimally invasive coronary artery bypass grafting demonstrated favorable outcomes in detailed evaluations of the anastomosis. Based on the anastomosis results, it is reasonable anticipate long-term graft patency in MIDCAB/MICS CABG, and further investigation is warranted to assess the precise long-term outcomes.

Keyword: *Minimally invasive coronary artery bypass grafting, MIDCABG, Bypass graft angiography*

ID: 60

Topic:

Cardiovascular Surgery > Minimally invasive CABG

Presentation Type:

Oral Presentation

MICS CABG: HOW WE DO IT

MD Irakli Kiladze* , Assoc. Prof. Igor Zhbanov , MD Georgi Revishvili , MD Vadim Uryuzhnikov , MD Armen Martirosyan

Petrovsky National Research Center of Surgery (Russian Federation, Moscow)

Surgery as a whole is based on the desire to optimize its results, which can be achieved by minimizing the traumatism of this operation. And in particular, the use of new minimally invasive methods is preferable with an increased risk of complications associated with artificial blood circulation, sternotomy and manipulation on the aorta. Objective: to compare the immediate results of patients operated according to the classical method through median sternotomy and patients operated through left-sided mini-thoracotomy, and to identify the advantages of one method over the other. Methods: The study group consisted of 90 patients who underwent CABG via leftsided mini-thoracotomy (group A). Control group B included 104 patients after isolated CABG via median sternotomy. The average age of patients was 63,8±7,2 years in group A and 59,9±8,1 years in group B. The average left ventricular ejection fraction (LV EF) was 58,2±9,9% in group A and 55,7±9,1% in group B. In group A 27,8% patients and 39,4% in group B had previously performed coronary angioplasty. Results: The difference in the average duration of minimally invasive (251±88 min) and traditional (243±62,2 min) CABG was unreliable. The majority of patients in both groups operated without CPB — 92,5% in group A and 89,4% in group B. The revascularization index in the study groups was 2,6±0,9 and 3,1±0,85. The complex and longer harvesting of two IMA through a mini-step at the stage of mastering MICS CABG technology explains the less frequently performed BIMA CABG in group A (41,3%) compared to group B (71,1%, $p<0,05$). Both intraoperative (283±92 ml vs. 527±172,2 ml) and postoperative drainage blood loss (205±50 vs. 350±46 ml) was significantly less in group A. Patients after minimally invasive CABG were more quickly transferred to independent breathing (mean ventilator time 123±38,1 min vs. 274,4±62,8 min after traditional CABG, $p<0,05$). In the absence of significant differences in the duration of stay in cardiac intensive care, patients returned home faster after minimally invasive CABG (7,1±2,1 days after surgery versus 8,5±2,2 days in group B, $p<0,05$).

Conclusion: The results obtained show that multiple CABG via left mini-thoracotomy is not accompanied by an increase in the frequency of perioperative complications and an increase in hospital mortality. Already at the stage of mastering such operations, it becomes obvious that MICS CABG technology in most patients does not limit the required volume of surgery, and as experience accumulates, it allows using two IMA to achieve autoarterial myocardial revascularization.

Keyword: *CABG, left-sided mini-thoracotomy, BIMA CABG.*

ID: 65

Topic:

Cardiovascular Surgery > Surgical treatment of AF

Presentation Type:

Oral Presentation

The Results Of Simultaneous Cox Maze V Procedure In Patients With Concomitant Atrial Fibrillation Who Undergo Coronary Artery Bypass Grafting

Prof. Amiran Revishvili , Prof. Vadim Popov* , MD Egor Malyshenko , MD Maksim Anishchenko , MD Natalia Popova , MD Kirill Kozyrin

A.V. Vishnevsky National Medical Research Center of Surgery, Moscow, Russian Federation

BACKGROUND. Simultaneous surgical treatment of various forms of atrial fibrillation (AF) during coronary artery bypass surgery (CABG) is an important issue in cardiovascular surgery.We use simultaneous Cox Maze V procedure for AF treatment in patients who undergo CABG in our center. Aim: to assess the results of Cox Maze V procedure for AF treatment in patients who undergo CABG.

METHODS. A prospective single-center trial included 105 patients with CAD and AF. Patients were randomized into 2 groups – patients with paroxysmal AF (group I, n=53) and non-paroxysmal AF (group II, n=52). Patients underwent on-pump CABG with additional Cox Maze V procedure. The Cox Maze V procedure was performed without aortic cross-clamping using parallel perfusion before CABG. Primary endpoints included arrhythmia recurrence, sinus rhythm, MACCE and secondary endpoints included CPR, cross-clamping aorta, surgery, ventilation time and time of ICU stay, pacemaker implantation.

RESULTS. There were no differences in the types and frequency of complications. During hospitalization, 2 (3.8%) deaths were documented in group II due to multiple organ failure. There were no cases of MACCE in both groups. The combination of AF/AFl was more often observed in group II - 15 (28.8%) versus 7 (13.3%), p=0.05. The rate of AF recurrence was significantly higher in group II - 14 (26.9%) versus 6 (11.3%), p=0.049. By the end of hospitalization, sinus rhythm had 100% and 90.4% patients in groups I and II, respectively (p=0.02). There were no significant differences in secondary endpoints. The cumulative freedom from AF/AFL was 100% and 97% in groups I and II in 1 year of follow up; 96.1% and 91.4% in 2 years of follow up; 90.9% and 78.7% in 3 years of follow up (Logrank Test, p=0.07). Cumulative freedom from MACE was 90.2 and 100% in 3 years of follow-up (Logrank Test, p=0.23). Permanent pacemaker implantation wasn't required either in short or long-term follow-up.

CONCLUSION. The Cox Maze V procedure for concomitant AF did not didn't significantly affect the follow up period, which may reflect its sufficient safety. The results of concomitant Cox Maze V procedure allow us to recommend this strategy for simultaneous AF treatment in CABG.

Keyword: *Cox Maze V, AF treatment, CABG, cumulative freedom from AF/AFL*

ID: 150

Topic:

Cardiovascular Surgery > Coronary bypass surgery

Presentation Type:

Oral Presentation

Impact of the right coronary artery bypass grafting on the development of atrial fibrillation after coronary artery bypass grafting: a retrospective study

Prof. seyhan yılmaz[*] [1] , MD Ertan Aydın[2] , MD Elvan Tekir Yılmaz[3] , MD Sabür Zengin[4] , MD Abdullah Çelik[4]

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Objective: Previous studies suggest that the location of coronary artery disease cannot independently predict atrial fibrillation after coronary artery bypass grafting, but with little information, it has also been thought that simultaneous right coronary endarterectomy may cause this rhythm problem. In our study, we aimed to evaluate the effect of right coronary artery bypass grafting on early postoperative atrial fibrillation.

Material-Methods: Patients who underwent elective on-pump coronary artery bypass grafting operations in our hospital were included in the study and patients who had undergone different open heart surgery, and patients who had previously undergone open heart surgery were not included in the study. The total patients included in the study were compared as Group.1: patients who developed postoperative atrial fibrillation and Group.2: patients who did not develop postoperative atrial fibrillation, in terms of right coronary artery bypass grafting and other follow-up parameters.

Results: The mean age of a total of 158 patients included in the study was determined as 63.25±10.07 (44-85 age range). Demographic data of the patients are shown in Table 1. Postoperative atrial fibrillation developed in 43 of the patients and the operative data of the patients are shown in Table 2.

Conclusion: We think that the frequency of postoperative atrial fibrillation development may be higher in cases where right coronary artery bypass grafting is performed, as it may play a role in processes related to the conduction system and right ventricular dysfunction, and multicenter studies with a large number of patients would be beneficial on this subject.

Table 3. Comparison of the group's perioperative data

Variable	AF Group n=43	Non-AF Group n=115	P value
Age (years)	64.48±9.53	62.79±10.27	0.479
Male gender	0.79±0.41	0.74±0.43	0.248
DM	0.58±0.49	0.54±0.49	0.410
Mean number of distal anastomoses	4.07±1.05	3.82±0.81	0.081
Mean number of right coronary artery anastomoses	0.86±0.35	0.75±0.43	0.001
CPB duration (minutes)	144.76±39.06	129.81±36.06	0.383
Aortic clamp duration (minutes)	100.37±31.74	89.10±28.61	0.763
Preoperative EF	54.83±8.86	55.98±8.11	0.399
Preoperative Hgb (g/dl)	12.94±1.75	13.21±1.81	0.962
Preoperative CRP (mg/l)	11.63±17.63	12.41±16.05	0.552

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Keyword: *coronary artery bypass grafting, atrial fibrillation, right coronary artery*

ID: 155

Topic:

Cardiovascular Surgery > Coronary bypass surgery

Presentation Type:

Oral Presentation

Impact Of Blood Salvage On Early Outcomes In Elective Coronary Artery Bypass Grafting

MD Adem Reyhancan , MD Mürsel Büyükadalı , Assoc. Prof. Orkut Güçlü* , Assoc. Prof. Serhat Hüseyin , Prof. Suat Canbaz

Department of Cardiovascular Surgery, Trakya University

Objectives: Various methods have been tested to minimize the need for transfusion due to early and late adverse events. Our aim was to investigate the impact of using a cell saver in elective coronary artery bypass grafting in the postoperative period.

Methods: Patients who underwent elective coronary bypass surgery at our clinic between January 2022 and March 2023 were included in this study. The study was designed retrospectively. Patients were divided into two groups depending on whether or not the Cell Saver was used during the operation. The two groups were compared with regard to postoperative adverse events.

Results: A total of 120 patients (86 males, 34 females, mean age: 63.1 ± 9.8 years; range 38 to 87 years) underwent elective coronary artery bypass surgery at our clinic. The data of all patients were analyzed retrospectively. Fifty-two patients whose operations were performed with the Cell Saver were designated as Group 1 and 68 patients as Group 2. In group 1, the amount of drainage in the six hours after surgery was significantly higher than in group 2 (p=0.012). While pneumonia occurred more frequently, acute kidney injury and acute cerebrovascular accidents were less frequent in group 1 than in group 2, but these results were not statistically significant. In addition, the rates of new-onset atrial fibrillation were similar in the groups (p=0.980).

Conclusion: Although the Cell Saver reduced the need for blood transfusion, no significant benefit was found for postoperative outcomes.

Oral Presentation Session

Practices in Surgery for Congenital Heart Defects

Date: 07.06.2024 Time: 11:15– 12:15 Hall: 5

ID: 80

Topic:

Cardiovascular Surgery > Congenital heart surgery

Presentation Type:

Oral Presentation

Coronary lesions insignificantly affect survival after truncus repair, except for postoperative extracorporeal life support: a single-center study

MD Murat Uzdenov[*] [1] , MD Fatos Ballazhi[1] , Prof. Johannes Kroll[1] , Prof. Martin Czerny[1] , Prof. Brigitte Stiller[2]

[1] Department of Cardiac and Vascular Surgery, University Heart Hospital, Freiburg, Germany

[2] Department of Pediatric Cardiology, University Heart Hospital, Freiburg, Germany

Background:

Truncus arteriosus is often associated with coronary anomalies. We detected coronary artery issues in patients undergoing truncus arteriosus repair, assessed how these issues influence mortality, and investigated the effectiveness of surgical interventions for treating coronary lesions.

Methods:

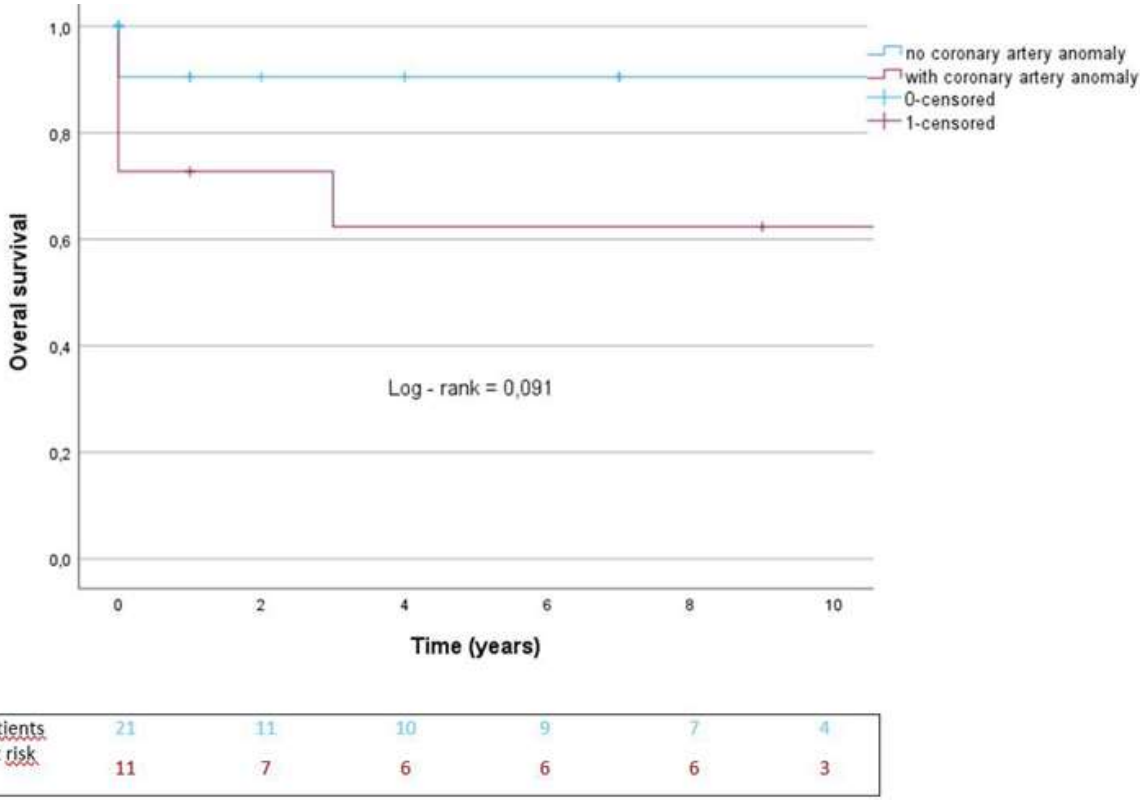
A retrospective review identified 32 patients with truncus repair (2002-2022). Coronary lesions were categorized as ostial stenosis, single ostium, intramural or juxtacommisural course. Survival analysis characterized survival after truncus repair and studied the association of coronary lesions and mortality.

Results:

Among 32 patients with truncus repair 11 patients (34,4%) had at least 1 coronary lesion. Median OP age was 16 days in the coronary lesion group and 24 days in the other group (p=0.481), median OP weight was 3 kg, congenital syndromes diagnosed in 12 (25%) patients in both groups. Other preoperative characteristics including cardiac anatomy and comorbidities were similar. Median bypass and cross clamp time was longer in the coronary lesion group, but not statistically significant. Contegra® 12 mm was the most common type of right ventricle – pulmonary artery conduit (66.7%). Réparation à l'ètage ventriculaire

(REV) procedure was performed in 8 (25.9%) patients. Two patients underwent supplementary coronary procedures.

Median follow-up time was 44 [1-164] months, with no significant difference between groups (p=0,845). Chest remained open in 21 (65.6%) patients (p=0,864), and 15.6% of patients required postoperative extracorporeal life support (ECLS), with a significantly higher proportion of coronary lesion group needing it (36.4% vs 4.8%, p= 0,037). We found no significant difference in the incidence of postoperative bleeding, intensive care and hospital stay as well as overall survival (p=0,091).



Conclusion:

Coronary artery anomalies are a common finding in truncus patients, present in 34.4% of our study group. The most frequent observed lesions were intramural and juxtacommisural course. In our limited group, coronary lesions have minimal impact on survival, except for increased postoperative ECLS implantation; however, further validation may require a larger sample.

Keyword: *truncus arteriosus, coronary anomaly, congenital cardiac surgery*

ID: 108

Topic:

Cardiovascular Surgery > Adult congenital heart disease

Presentation Type:

Oral Presentation

Continuous Long-Term Evaluation of Heart Rate Variability in Adults Following Surgical Repair for Cyanotic Congenital Heart Disease

MD Mathieu Suleiman*
Department of Cardiac Surgery - University Hospital Erlangen

Continuous Long-Term Evaluation of Heart Rate Variability in Adults Following Surgical Repair for Cyanotic Congenital Heart Disease

Mathieu N. SULEIMAN[1], Felix PIERINGER[1,2], Ann-Sophie KAEMMERER-SULEIMAN[1], Peter EWERT[2], Oliver DEWALD[1], Annika FREIBERGER[2], Michael HUNTGEBURTH[2], Fritz MELLERT[1], Nicole NAGDYMAN[2], Rhoia NEIDENBACH[3], Fabian von SCHEIDT[2], Harald KAEMMERER[2], Sebastian FREILINGER[2], Frank HARIG[1]

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[3] Vienna Doctoral School of Pharmaceutical, Nutritional and Sport Science, Vienna, Austria

Background: Heart rate variability (HRV) is a recognized non-invasive metric used to assess cardiac autonomic nervous activity and overall health in general cardiology. Nevertheless, there is a scarcity of research on HRV in adults with congenital heart defects (CHD). This study aims to investigate the utility of prolonged, continuous HRV monitoring in evaluating the overall health status of adults with cyanotic CHD.

Methods: This prospective study enrolled 45 adults (40% female, with a mean age of 35.2 ± 9.2 years, ranging from 19 to 58 years) who had undergone cardiac surgical repair. HRV parameters were derived from continuous 24-hour measurements utilizing a Bittium Faros 180 sensor (Bittium Corp., Oulu, Finland).

Results: Postoperative patients with transposition of the great arteries (TGA) (n = 18) achieved significantly higher values of standard deviation of NN intervals (SDNN) (175.4 ± 59.9 ms vs. 133.5 ± 40.6 ms; p = 0.013) compared with patients with other conotruncal anomalies (n = 22). Comparing patients with TGA after a Senning-Brom or Mustard operation (n = 13) with all other heart surgery patients (n = 32), significantly higher HRV parameters were found after atrial switch (root mean square of successive RR interval differences: 53.6 ± 20.7 ms vs. 38.4 ± 18.3 ms; p = 0.019; SDNN: 183.5 ± 58.4 ms vs. 136.3 ± 45.3 ms; p = 0.006). A higher SDNN was also measured after Senning-Brom or Mustard operations than after Rastelli operations (n = 2) (SDNN: 183.5 ± 58.4 ms vs. 84.5 ± 5.2 ms; p = 0.037). When comparing atrial switch operations (n = 3) with Rastelli operations, the SDNN value was significantly shorter in the Rastelli group (p = 0.004).

Conclusions: Our findings indicate that continuous monitoring of HRV could potentially function as an indicator of cardiac autonomic dysfunction in adults who have undergone surgical repair for cyanotic CHD. The presence of impaired cardiac autonomic nervous activity might correlate with a heightened risk of adverse reactions among CHD patients who have undergone surgical repair. Consequently, the ongoing assessment of HRV patterns and trends over time could offer deeper insights into the dynamic alterations in autonomic regulation and disease progression, as well as the impact of lifestyle changes or treatments. Given the inherent variability in heart rate among individuals, HRV holds promise as a valuable tool for evaluating intra-individual disease progression and could contribute to the advancement of personalized medicine approaches. Nonetheless, further research is warranted to elucidate the underlying mechanisms and fully exploit the potential of HRV analysis in optimizing medical care for adults with CHD.

ID: 135

Topic:

Cardiovascular Surgery > Congenital heart surgery

Presentation Type:

Oral Presentation

Use Of Intraoperative Hemoadsorption Device In Pediatric Patients With Tetralogy of Fallot And Severe Pulmonary Stenosis

Prof. Mustafa KARAÇELİK[*] [1] , MD Canan SALMAN ÖNEMLİ[2] , MD Ömer Faruk GÜLAŞTI[1]
[1] Department of Pediatric Cardiac Surgery, University of Health Sciences, Dr. Behçet Uz Child Disease And Pediatric Surgery Training and Research Hospital, Izmir, Turkey
[2] Department of Anesthesiology and Reanimation, İzmir City hospital

OBJECTIVE:

Systemic inflammatory response syndrome (SIRS) is a common complication after pediatric congenital heart surgery, which can cause microcirculation disorder through capillary leakage after cytokine release and cause organ dysfunction. The incidence of SIRS was 22.4% for the first 24 hours and 34.5% for 72 hours after cardiac surgery (1). Postoperative SIRS can significantly prolong the weaning of mechanical ventilation and the length of intensive care unit (1,2). Ischemia-reperfusion injury, long CPB duration, mechanical hemolysis, low age and body weight, and the use of large amounts of fresh frozen plasma during the operation may trigger SIRS in CPB in pediatric patients (1,2).

The hemoadsorption device can be connected to renal replacement therapy machines, extracorporeal membrane oxygenator or cardiopulmonary bypass equipment (3). Cytosorb is a hemoadsorption device but there is no consensus on the effectiveness (4). In this presentation, we tried to share the effects we observed of Cytosorb, which we used intraoperatively in 4 pediatric patients with tetralogy of Fallot.

CASE REPORT: We operated on four 1-year-old patients with tetralogy of Fallot using intraoperative Cytosorb. After induction of general anesthesia, we intubated and performed arterial and central catheterization. We performed BIS and NIRS monitoring. Demographic and intraoperative data are seen in Table 1. Patients who are hemodynamically stable after the operation, we were intubated and taken to the Cardiac Surgery Intensive Care Unit. There were no intraoperative complications in the patients. Postoperative examinations revealed a decrease in albumin and platelet levels. No organ dysfunction was observed in the postoperative period. No mortality occurred during intensive care or hospitalization.

CONCLUSIONS:

It has been reported that Cytosorb protects the vascular barrier by removing pro-inflammatory cytokines and thus provides hemodynamic stabilization, has a positive effect

on acid-base balance and reduces lactate value (3). It has been determined that less renal replacement therapy is needed when used intraoperatively (1). We think that the use of Cytosorb will be beneficial since pediatric patients are in the risk group for SIRS due to immature organ functions and the inflammatory situation will increase further with long-term CPB.

References:

1) Boehne M, Sasse M, Karch A et al. Systemic inflammatory response syndrome after pediatric congenital heart surgery: incidence, risk factors, and clinical outcome. J Card Surg. 2017;32(2):116-25.
2) Plathier EC, Mendes V, Verdy F et al. First hemoadsorption during cardiopulmonary bypass in neonate with complex cardiac malformation. Annals of Clinical Case Reports 2022;7:1-2.
3) Kutnik P, Borys M. Applications of Cytosorb in cilinical practice. Journal of Pre-Clinical and Clinical Research 2019;13(4):162-166.
4) Becker S, Lang H, Barbosa CV et al. Efficacy of CytoSorb: a systematic review and meta-analysis. Critical Care 2023;27:215.

Keyword: *Cytosorb, Intraoperative, Infant, Tetralogy of Fallot*

ID: 62

Topic:

Cardiovascular Surgery > Adult congenital heart disease

Presentation Type:

Oral Presentation

Single-Stage Surgical Treatment of a Young Patient with Aortic Coarctation, Ascending Aortic Aneurysm, Bicuspid Aortic Valve and VSD

MD İlker Hasan Karal , MD Emrah Ereren* , MD Aşkın Kılıç , MD İlayda Danişmaz
Samsun University Faculty of Medicine Cardiovascular Surgery Department

BACKGROUND

The coexistence of aortic coarctation, ascending aortic aneurysm, bicuspid aortic valve and VSD may rarely be diagnosed until adulthood. We present a single-stage surgical treatment of a young patient with aortic coarctation, ascending aortic aneurysm, bicuspid aortic valve and VSD.

METHODS

A 24-year-old male patient, who was followed up for a long time due to VSD and bicuspid aorta and complained of fatigue, was diagnosed with 56mm dilatation in the ascending aorta. A vascular exam revealed the femoral pulses were weak. There was a gradient of 40 mmHg between the upper and lower extremities blood pressure. CT-angiography revealed severe postductal aortic coarctation. Detailed echocardiography revealed that the patient also had a perimembranous VSD with a diameter of 5 mm.

RESULTS

Innominate artery- descending aorta grafting, Bentall operation and VSD closure operation were performed in the same session with median sternotomy. Since there were many septations on the bicuspid aortic valves, mechanical valve replacement was performed.The patient was extubated on the same day and was discharged in full recovery on the 7th postoperative day.

CONCLUSIONS

The best surgical approach for patients with aortic coarctation and additional surgical cardiovascular disorders operated on in adulthood is controversial. The patient underwent a one-stage procedure in which the ascending aorta and aortic valve were replaced, the VSD was closed, and the coarctation was bypassed with an extra-anatomical graft. Extra anatomical graft between the ascending aorta and descending aorta is a good solution in the treatment of these cases.

References:

Thorac Cardiovasc Surg. 2013 Jun;61(4):327-9.
Kyobu Geka. 2017 Sep;70(10):851-854.

Keyword: *VSD, Bicuspid Aortic valve, Aortic Aneurysm, Aortic Coarctation*

ID: 74

Topic:

Cardiovascular Surgery > Aortic valve surgery

Presentation Type:

Oral Presentation

Long-term results of the Ross operation in adults

Assoc. Prof. Soslan Enginoev[*1], Assoc. Prof. Igor Chernov[2], MD Aliaksandr Ziankou[2], Assoc. Prof. Muminat Dzhambieva[3], Assoc. Prof. Nargiz Ramazanova[3], Assoc. Prof. Madian Mohamed Hassan[3], Assoc. Prof. Vladimir Kolesnikov[2]

[1] Federal center for cardio-vascular surgery, Astrakhan, Russian Federation; Astrakhan State Medical University, Astrakhan, Russian Federation

[2] Federal center for cardio-vascular surgery, Astrakhan, Russian Federation

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Aim: to analyze the experience performing the Ross procedure in adult patients.

Material and methods: The retrospective study included 206 patients with AK pathology (154 men (74.8%)/52 women (25.2%)). Inclusion criteria: patients who underwent the Ross operation from 2009 to 2019, the patient's age is 18 years and older. Exclusion criteria: none. The median age was 35 [26–44] years. Infective endocarditis as an AV dysfunction was diagnosed in 56 (27.2%) patients, and bicuspid AV in 125 (60.7%) patients. The median follow-up period was 94 [42–115] months.

Results: combined interventions were performed in 38 (18.4%) cases. Modified techniques were applied in 23.3% of cases. The median duration of surgery was 220 [195-255] min, cardiopulmonary bypass - 138 [123-155] min, myocardial ischemia 115 [103-127] min. Hospital mortality was 0.5%. In the early postoperative period, implantation of a permanent pacemaker was indicated in 5 (2.4%) patients due to conduction disturbances. 9 (4.4%) patients developed perioperative myocardial injury, the number of strokes was 2 (1%). Ten-year overall survival, freedom from reoperation on a pulmonary autograft, freedom from reoperation on a pulmonary homograft was 95.6%, 87.8%, 96.5%, respectively. By the end of the observation period, the median of the peak and mean gradient on the lung autograft was 6 [4-8] mm Hg. and 3 [2-5] mm Hg., and aortic regurgitation ≥2 degree was detected in 34 (17.8%) patients.

Conclusion: The Ross procedure is a safe alternative to AV replacement in experienced hands with acceptably low in-hospital mortality and excellent long-term outcomes.

Keyword: *Ross operation, aortic valve replacement*

ID: 143

Topic:

Cardiovascular Surgery > Congenital heart surgery

Presentation Type:

Oral Presentation

Pediatric Arcus Aorta Surgery: Precision in Practice

MD Fatih Yiğit[*] [1] , MD Ergin Arslanoğlu[2] , MD Shiraslan Bakhshaliyev[3]
[1] kartal koşuyolu training and research hospital
[2] cemil tasçıoğlu city hospital
[3] Liv bona dea hospital

BACKGROUND:

Pediatric aortic arch reconstruction stands at the forefront of surgical innovation, representing a critical advancement in addressing congenital heart defects. As a pivotal procedure in pediatric cardiac surgery, its outcomes profoundly impact the quality of life and long-term prognosis of young patients. However, despite advancements in surgical techniques and perioperative care, challenges persist in achieving optimal results.In this research, we delve into the intricate landscape of pediatric arcus aorta reconstruction, examining not only the technical intricacies of the procedure but also the nuanced outcomes that shape the field. By synthesizing current research findings and clinical experiences, we aim to illuminate the successes, limitations, and ongoing debates surrounding this vital aspect of pediatric cardiac care.

METHODS:

Patients who underwent arcus aortic reconstruction between June 2021 and January 2024 were included in the study. The procedure was performed by placing an X clamp under antegrade cerebral perfusion. Autologous pericardium was used as patch material.

RESULTS

21 patients were included in the study. The ages of the patients included in the study ranged between 3 and 276 days, and the average was calculated as 43.76 ± 73.28. The weight of the patients ranged between 2.30 and 6.40 kilograms, and the average was calculated as 3.42 ± 1.24 kilograms. 11 of the patients were male (52.3%). Mortality was calculated as 9.5%. Ecmo was required in 1 patient (4.7%).Balloon angioplasty was performed in 1 (4,7%) patient.

CONCLUSİON:

From the optimization of surgical approaches to the management of postoperative complications, every facet of pediatric arcus aorta reconstruction demands meticulous attention and continual refinement. Through comprehensive analysis and critical reflection, we endeavor to provide insights that not only inform clinical practice but also inspire further innovation in the pursuit of improved outcomes and enhanced quality of life for pediatric patients undergoing aortic arch reconstruction.

References:

Yildirim, O. and Suzan, D. (2020). Arcus aorta reconstructions in neonates and early infants. Koşuyolu Heart Journal, 23(2), 122-127. https://doi.org/10.5578/khj.69781
Yilmaz et al. (2006) "Single-stage repair of adult aortic coarctation and concomitant cardiovascular pathologies: a new alternative surgical approach" Journal of cardiothoracic surgery (2006) doi:10.1186/1749-8090-1-18

Keyword: *pediatric arcus surgery, congenital heart, arch reconstruction*

ID: 145

Topic:

Cardiovascular Surgery > Aortic valve surgery

Presentation Type:

Oral Presentation

Subaortic Stenosis in Adults: Patients' Characteristics and Results After the Operation.

Assoc. Prof. Dilşad Amanvermez Şenarslan* , Prof. Funda Yıldırım , Prof. Ömer Tetik
Manisa Celal Bayar University, Faculty of Medicine, Department of Cardiovascular Surgery

OBJECTIVE: Obstruction of the left ventricular outflow tract (LVOT) occurs in six out of 10,000 live births. The obstruction occurs mostly in the aortic valve level (71%), then in the subvalvular level (14%), and rarely in the supravalvular level (8%). Subvalvular aortic stenosis (AS) can be either a fixed stenosis resulting from a subaortic membrane or a dynamic stenosis because of hypertrophic cardiomyopathy. (1-3) There are 3 clinical subaortic stenosis types, subaortic discrete membrane, septum hypertrophy (HOCM- Hypertrophic obstructive cardiomyopathy), and fibromuscular tunnel. The study aims to evaluate the characteristics and results of adult patients operated in our tertiary health care center for subaortic stenosis.

Methods: The study involves 18 adult patients operated for subaortic stenosis. Twelve patients were operated on for subaortic discrete membrane, six patients for HOCM, and one patient for fibromuscular tunnel type between January 2012 and January 2024. The patients' data were examined retrospectively.

Results: 12 patients went to subaortic discrete membrane resection, six patients went to septum resection, and one patient went to septum resection and discrete membrane resection. Additionally, one patient needed an aortic valve replacement, one patient needed a mitral valve replacement, one patient needed ventricular septal defect repair and one patient needed patent ductus arteriosus ligation. Residual stenosis of the left ventricular outflow tract was checked by Hegar bougies and valve measurement instruments. There was no operative mortality. In the postoperative period, transaortic gradient measurements, ejection fraction, left ventricular dimensions and wall thickness were controlled by transthoracic echocardiography, and the functional capacity of the patients was evaluated at every outpatient clinic check-up. All patients' transortic gradient was decreased and they had no recurrent symptoms. None of the patients required additional intervention or reoperation.

Conclusions: A satisfactory decrease in transaortic gradient was obtained in all patients. There was a significant decrease in left ventricular dimensions, septum thickness, and ventricular wall thickness in postoperative echocardiography. There were no recurrences in the follow-up.

References:

1. Barekatain A, Fanari Z, Hammami S, Qureshi W. Subvalvular Aortic Stenosis. Del Med J. 2015;87(11):346-8.
2. Valeske K, Huber C, Mueller M, Böning A, Hijjeh N, Schranz D, Akintuerk H. The dilemma of subaortic stenosis--a single center experience of 15 years with a review of the literature. Thorac Cardiovasc Surg. 2011;59(5):293-7.
3. Devabhaktuni SR, Chakfeh E, Malik AO, Pengson JA, Rana J, Ahsan CH. Subvalvular aortic stenosis: a review of current literature. Clin Cardiol. 2018;41(1):131-136.

Keyword: *Hypertrophic cardiomyopathy, Subaortic stenosis, Surgical treatment.*

Oral Presentation Session

Perspectives in Surgery for Congenital Heart Diseases

Date: 07.06.2024 Time: 12:30– 13:30 Hall: 5

ID: 107

Topic:

Cardiovascular Surgery > Adult congenital heart disease

Presentation Type:

Oral Presentation

‘Pathfinder-CHD Registry': Updated data of a prospective, comprehensive heart failure database of adults with Congenital Heart Disease

MD Ann-Sophie Kaemmerer-Suleiman*
Department of Cardiac Surgery - University Hospital Erlangen

‘Pathfinder-CHD Registry': Updated data of a prospective, comprehensive heart failure database of adults with Congenital Heart Disease

Ann-Sophie Kaemmerer-Suleiman[1], Oliver Dewald[1], Peter Ewert[2], Annika Freiberger[2], Sebastian Freilinger[2], Frank Harig[1], Jürgen Hörer[3], Michael Huntgeburth[2], Niko Kohls[4], Luisa Lehmann[2], Fritz Mellert[1], Nicole Nagdyman[2], Robert David Pittrow[1], Leonard Bernhard Pittrow[1], Mathieu N. Suleiman[1], Elsa, Ury[2], Harald Kaemmerer[2], Fabian von Scheidt[2]

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[4]Division Health Promotion, University of Applied Sciences Coburg, Coburg, Germany

BACKGROUND AND AIM: Heart failure is a major challenge in the management of adults with congenital heart defects (CHD). It is complicated by the complexity of the underlying CHD as well as residua from previous surgical or interventional treatment. Therapeutic approaches often differ markedly from strategies applied in acquired heart disease.

The goal of this registry is to document clinical and epidemiological data, treatment approaches, and clinical outcomes of adults with CHD and heart failure based on real-world data.

METHOD: The Pathfinder-CHD Registry is a prospective, observational, web-based heart failure registry established in 2022 in Germany. Adults with CHD and all forms of manifest heart failure, previous heart failure, or at significant risk for future heart failure from abnormal ventricular function or anatomy are included.

RESULTS: Since November 2022, n=1,529 patients (mean age 37.4 ±17.3 years; 47.5% female) met inclusion criteria and gave consent to participate in this registry with longitudinal follow-up.

Of the patients included, n=562 (36.6%) had 'complex heart anomalies' including univentricular hearts, AV-valve atresia, congenitally corrected transposition of the great arteries, transposition of the great arteries, truncus arteriosus, or Ebstein´s anomaly. n=436 patients (28.5%) had 'right-sided heart anomalies' including tetralogy of Fallot, pulmonary atresia, double outlet right ventricle, and pulmonary valve disease. 'Left-sided heart anomalies' (n=181, 11.8%) encompassed aortic valve disease, aortic coarctation, and interrupted aortic arch.

As the primary diagnosis, n=1000 (65.4%) patients had a cyanotic CHD.

The registry provides comprehensive documentation of the underlying congenital heart defects and type of heart failure as well as medical, surgical, and/or interventional treatments, comorbidities, and outcomes.

CONCLUSION: Containing comprehensive data on CHD-associated heart failure, the Pathfinder-CHD Registry database will help to evaluate disease progression, risk factors, and efficacy of different treatment strategies in the long term. The registry promotes the goal of evidence-based, personalized treatment and helps to provide predictive models to effectively address the challenges of adults suffering from CHD and heart failure.

ID: 20

Topic:

Cardiovascular Surgery > Congenital heart disease

Presentation Type:

Oral Presentation

Outcomes of Complete Repair of Mixed-type Total Anomalous Pulmonary Venous Return

MD Mohannad Dawary[*] [1] , MD Fareed Khouqeer[1] , MD Ziad Issa[1] , MD Faisal Alshamdin[2] , MD Louai Alkhalaf[1] , Prof. massimo griselli[3]

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[2] AlJouf Cardiac center/Prince Mohamed bin Abdulaziz medical city

[3] King Abdullah bin Abdulaziz University Hospital

Background: Total Anomalous Pulmonary Venous Connection (TAPVC) has an incidence of 0.7-1.5% amongst congenital heart disease with a wide spectrum of complex anatomic and therapeutic challenges. TAPVC is classified into cardiac, supra-cardiac, infra-cardiac, or mixed-type depending on the pattern of pulmonary venous (PV) drainage. Typical median survival if unrepaired is 2 months with 50% mortality in first 3 months of life, thereby demonstrating the urgency of recognition and intervention. Mixed-type TAPVC has a higher mortality.

Methods: We describe encountered anatomic variations of mixed type TAPVC and the surgical outcomes in case series from 2 centers. Mixed-type TAPVC has been classified based on pattern of PV drainage. Type I refers to '2+2' drainage of venous pairs, type II refers to '3+1', and type III refers to all other variants. 6 patients (43%) had Type I "2+2" drainage; 2 patients had 2 supra-cardiac and 2 cardiac connections and 4 patients had 2 infra-cardiac connections and 2 cardiac. 4 patients (29%) had Type II "3+1" drainage. 3 patients had 3 cardiac and 1 supra-cardiac variants and one had rare supra-cardiac PV combination. 4 patients (29%) had Type III morphology. 2 patients of them had 3+2 anatomy with 3 supra-cardiac and 2 cardiac connections, both of which included 3 right-sided pulmonary veins. The remaining 2 patients had unique anatomy, one with tri-level attachment to cardiac, supra-cardiac, and infra-cardiac and the last patient with all supracardiac PV drainage but in a "3+1+1" pattern. Literature review and retrospective chart review of 14 cases, description of preoperative imaging, anatomic findings and confirmation at surgery, surgical technique, and outcomes were reported.

Results and Conclusions: statistical analisys was limited due to small patient population. In previous publications, mixed-type TAPVC has higher mortality, with univariate analysis of mixed type versus cardiac type with statistically significant hazard ratios of 2.88 in previous study and mortality as high as 42-50%. We achieved improved results, with 79% overall survival and no intraoperative mortality. Both patients who had complex intracardiac lesions (1 with ventricular septal defect and 1 with tetralogy of Fallot) ultimately died. 29% of patients developed PV obstruction on echocardiography follow-up with 3 requiring intervention with cardiac catheterization.

ID: 39

Topic:

Cardiovascular Surgery > Pediatric cardiac surgery

Presentation Type:

Oral Presentation

A novel triple-patch repair technique in complete atrioventricular septal defect

Assoc. Prof. Emrah Şişli*

Section of Paediatric Cardiovascular Surgery, Department of Cardiovascular Surgery, Osmangazi University Faculty of Medicine, Eskişehir, Turkey

BACKGROUND: In complete atrioventricular septal defect (CAVSD) repairs, residual left-sided AV valve regurgitation (AVVR) is one of the most challenging morbidities with short- and long-term consequences leading to multiple hospital re-admissions and re-operations. The outcomes in this regard comprises high recurrence rates which has yet to be satisfactorily achieved today. We aimed to present the short-term preliminary outcome of our novel triple-patch repair (TPR) technique in CAVSD repair.

METHODS:

The whole procedure is performed through traditional approach through right atriotomy. The common AVV is saline tested for confirmation of the Rastelli type and coaptation zones. Left-sided cleft is determined and suspended with a 5.0 polypropylene. The superior and inferior bridging leaflets are divided according to the chordal attachments. Following suturing of the inferior curved edge of the VSD patch, the right-sided bridging leaflets are attached to the upper edge of the VSD patch via mattress sutures. The same mattress sutures are passed firstly through the right side of a 3-5 mm wide strip of an additional patch and secondly through the atrial septal patch, respectively (**Figure-1A**). The left-sided bridging leaflets are then sutured to the left side of the strip patch, followed by repair of the left-sided cleft.

RESULTS: In a 6-month-old boy weighing 6.8 kg with the diagnosis of CAVSD, Rastelli type-C (**Figure-2A**), double patch repair was performed which was deemed unsuccessful due to moderate-to-severe left-sided AVVR detected on intra-operative epicardial echocardiography. Cardiopulmonary bypass (CPB) was re-established and the above-mentioned novel technique was applied (**Figure-1B**). The duration of aortic cross clamp (ACC) and CPB were 132 min and 180 min, respectively. In intra-operative post-CPB echocardiographic evaluation, the AVVR was nil in the right and trivial in the left. While the postoperative course was uneventful with mild inotropic support, the ICU and hospital stays were four days and 12 days, respectively. In the third-month transthoracic echocardiography, while the left-sided AVVR was trivial, there was no right-sided AVVR (**Figure-2B**).

CONCLUSIONS: The logic behind the TPR technique is elimination of the inadequate abalienation of the partitioned left- and right sided bridging leaflets with the lateral leaflets lost by the suture bites. Aside from a considerable higher ACC and CPB times than that of expected, the immediate- and short-term outcomes of the TPR technique showed promising results in regards to freedom from AVVR. The topic merits further comparative results in a larger patient series with longer duration of follow-up data.

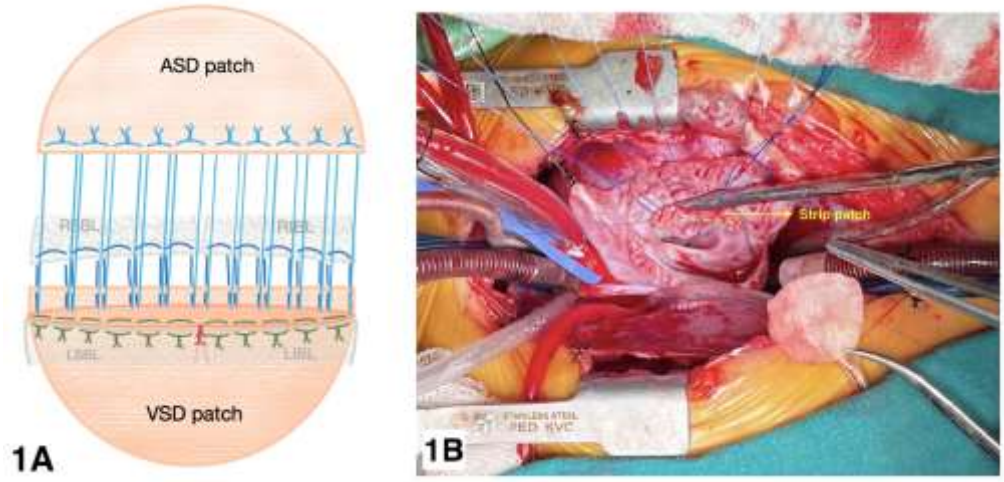

Figure 1. Surgical depiction (1A) and intraoperative photograph (1B) of repair. Note that the yellow dashes in figure 1B represents the connection of left-sided bridging leaflets with the strip patch.
Abbreviations: RSBL: right superior bridging leaflet, RIBL: right inferior bridging leaflet, LSBL: left superior bridging leaflet, LIBL: left inferior bridging leaflet

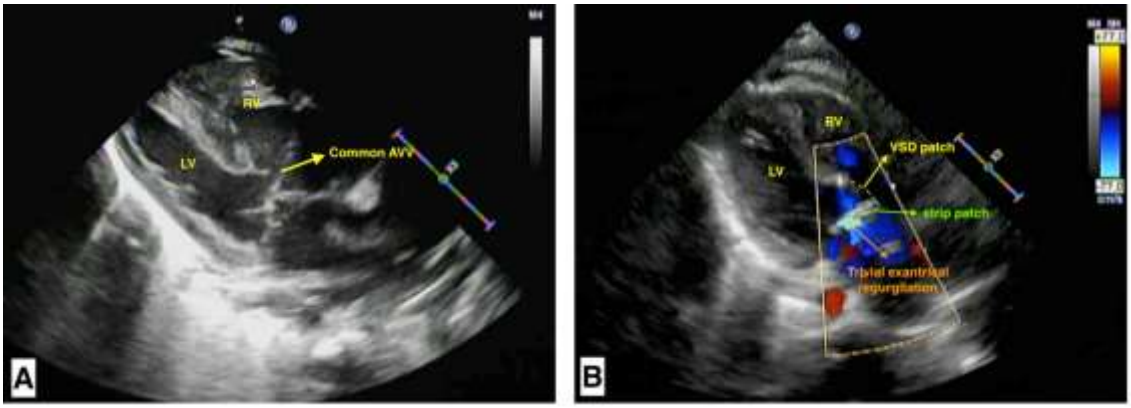

Figure 2. Preoperative (A) and postoperative third month (B) transthoracic echocardiographic images. Note that there is trivial exantrical regurgitation in left-sided AV valve.

Keyword: *Complete atrioventricular septal defect, Surgical repair, Novel technique*

ID: 55

Topic:

Cardiovascular Surgery > Medical and surgical treatment of heart failure

Presentation Type:

Oral Presentation

Post MI Ventricular Septal Defect Repair After a Month, Successful Outcomes Despite Long Wait

MD Huseyin Demirtas[1] , Assoc. Prof. Abdullah Özer[1] , MD Subhan Mammadov[2] , MD Mehmet Burak Gülcan[* 1] , Prof. Gülten Tacoy[3]

[1] Gazi University Hospital, Department of Cardiovascular Surgery

[2] Medicana International Hospital, Ankara

[3] Gazi University Hospital, Department of Cardiology

Objective

VSD is the rare mechanical complication of acute myocardial infarction (AMI). Transthoracic and transesophageal echocardiogram are proper diagnostic tools to identify. Surgery is required, but too much early surgery has a high mortality risk. Medical therapy for heart failure until the surgery is an appropriate approach.

Methods

There is only one patient in our study, because our study is a case report. It is about a rare clinical entity regarding post MI VSD. Thus it has a novel complication currently.

Results

Our study is about a 74-year-old female patient with post-MI VSD. Attractive point of our case is 30 days duration before the surgery. Eventually, the patient underwent to the surgery, and procedure was accomplished. She has discharged a week after the operation by walking. We aim to contribute to the literature with our unique case.

Conclusion

In conclusion, VSR is a rare and serious complication of AMI which is accompanied by a very high mortality despite the evolution of medicine. In order to avoid this complication, the best attitude would be to act upstream by establishing an early diagnosis of AMI and treating it in time. Thus, pandemic and wars in the world shows us clearly that surgical and interventional therapies of VSD remains its importance. Thus, these rare clinical entities important to contribute to the literature. In this respect, we believe that our study is important in terms of bridging time to the surgery and its size, technique, and success. Duration before the surgery, 30 days, makes our study unique; there is not such a long period before the surgery in the literature.

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Ibanez B, James S, Agewall S, Antunes MJ, Bucciarelli-Ducci C, Bueno H, et al. 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation. Eur Heart J. 2018 Jan 7;39(2):119–77.
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Papalexopoulou N, Young CP, Attia RQ. What is the best timing of surgery in patients with post-infarct ventricular septal rupture? Interact Cardiovasc Thorac Surg. 2013 Feb;16(2):193–6.

Keyword: *Ventricular Septal Rupture, ST Elevation Myocardial Infarction, Myocardial Infarction, Heart Septal Defects, Ventricular, Sternotomy*

ID: 144

Topic:

Cardiovascular Surgery > Pediatric cardiac surgery

Presentation Type:

Oral Presentation

"Bridging the Gap: Innovative Approaches in Treating Tetralogy of Fallot with Absent Pulmonary Valve Syndrome"

MD Fatih Yiğit[*] [1] , MD Ergin Arslanoğlu[2] , MD Shiraslan Bakhshaliyev[3]
[1] Kosuyolu Trainning and Research Hospital
[2] Cemil Tascioglu City Hospital
[3] Liv Bona Dea Hospital

BACKGROUND AND AIM:Tetralogy of Fallot with absent pulmonary valve syndrome is a complex congenital heart defect associated with significant morbidity and mortality rates.The syndrome is characterized by features such as massively dilated main and left pulmonary arteries, as seen in echocardiograms, and can be associated with other anomalies like obstructed totally anomalous pulmonary venous connection Additionally, the absence of the left pulmonary artery is observed in a subset of cases. Furthermore, the syndrome can present challenges postoperatively, with cases of tracheobronchial anomalies possibly due to airway compression from dilated pulmonary arteries secondary to severe pulmonary regurgitation. In some instances, dilatation of the main pulmonary artery can lead to compression and obstruction of the tracheobronchial tree.
METHOD:Constructing a pulmonary valve using the right atrial appendage is not a standard procedure in cardiac surgery. The pulmonary valve is typically located between the right ventricle and the pulmonary artery, responsible for regulating blood flow from the heart to the lungs. In cases of congenital heart defects like tetralogy of Fallot, where pulmonary valve dysfunction is common, surgical repair may involve techniques like pulmonary valve replacement with right atrial appendage.
RESULTS:Two patients who underwent complete correction of the right atrial appendage due to absent pulmonary valve between 2021 and 2024 were included in the study. Two patients, aged 6 months (5.6 kg, male) and 8 months (7 kg, female), were admitted to the service 5 and 7 days postoperatively, respectively. They were discharged on postoperative days 9 and 17. Arrhythmia (JET) was observed in the 6-month-old patient in the early postoperative period.
CONCLUSIONS:In conclusion, tetralogy of Fallot with absent pulmonary valve syndrome is a rare and severe form of congenital heart disease that requires careful management and monitoring due to its assoc iated complications and high mortality rates in the operative period.

References:

Hosseinpour AR, González-Calle A, Adsuar-Gómez A. Using the right atrial appendage to

construct a pulmonary valve in hearts with tetralogy of Fallot. Eur J Cardiothorac Surg. 2021 Jul 30;60(2):438. doi: 10.1093/ejcts/ezab054. PMID: 33564839.
Onan IS, Ergün S, Özturk E, Çelik EC, Ayyıldız P, Onan B. Early results of neopulmonary valve creation technique using right atrial appendage tissue. J Card Surg. 2020 Oct;35(10):2640-2648. doi: 10.1111/jocs.14860. PMID: 33043664.

Keyword: *Fallot tetralogy, absent pulmonary valve, right atrial appendage valve, congenital heart surgery*

VALVE SUMMIT

Aortic Alchemy: CurrentStatus on Aortic Valve Repair

Date: 07.06.2024 Time: 13:00– 14:00 Hall: 3

ID: 11

Topic:

Cardiovascular Surgery > TAVI

Presentation Type:

Oral Presentation

The 8-year experience of the using synthetic transcatheter aortic valve

Prof. Vladlen Bazylev , MD Andrey Voevodin* , MD Ivan Potopalsky , MD Alyona Kuznetsova , MD Mihir Patel

Federal Center of Cardiovascular Surgery

Objective. To study the clinical and hemodynamic results of transcatheter implantation of the aortic valve with synthetic (polytetrafluoroethylene) leaflets up to 8 years.

Methods. The valve is a balloon-expandable stent containing three PTFE leaflets. Since 2016, 450 implantations have been performed. We used femoral and apical approaches. All patients had severe aortic stenosis; majority were high surgical risk.

Results. In-hospital results: mortality 5%, stroke 1%, pacemaker 2 %. Echo data: mean gradient 5.4 mm Hg; moderate AR due to paravalvular leak 2%; transvalvular leak – non. Follow up: 8-yaers survival 71.3%; mean gradient 9.3 mm Hg; moderate AR due to paravalvular leak 1%; transvalvular leak 1%.

Conclusion. The results of the research are comparable with the known clinical studies of transcatheter aortic valves.

ID: 167

Topic:

Cardiovascular Surgery > Minimally invasive mitral valve surgery

Presentation Type:

Oral Presentation

Perceval bioprosthetic valve implantion in elderly patients who have ascending aortic aneurysm with or without bicuspid aortic valve.

Prof. Ömer Faruk Doğan[*] [1] , MD Özgür Çoban[1] , MD Hasan Karademir[2] , MD Met Kubilay Kasap[3]

[1] Adana City Hospital

[2] Adana City Research and Training Hospital

[3] Adana city research and training hospital

Background: The aim of our study was to compare the short- and medium-term clinical outcomes after perceval biological valve implantation in elderly patients with ascending aortic aneurysm.

Methods:Our cohort is composed 49 patients who underwent aortic valve implantation using with sutureless Perceval S or Perceval Plus valve. Twenty out of 49 patients had an ascending aortic aneurysm with or without bicuspid aortic valve. (40.8%) (group 1). The remaining patients had serious aortic stenosis (group 2). Concomitant cardiac surgeries in both groups were CABG, mitral valve repair, and tricuspid valvuloplasty. The patients in both groups have similar characteristics. Transesophageal echocardiography and 3-D computed tomography were performed preoperatively for each case. In group 1, longitudinal aortotomy was performed 1cm away from aortic cross clamp and incision continued until sinotubular junction. After than, an aortic wall incised laterally for using wrapping tubular graft. Thanks to this aortic incision, we clearly demonstrated an aortic valve , calcifications, and coronary arteries. Fisrtly, we exited aortic valve, all calcifications debris. A guiding suture in each valve sinus, 2–3 mm under the leaflet hinge point, perpendicular to the annulus were placed. The 120° distribution of the sutures can be ensured by using the sizers, as they have reference spokes which are distributed at 120°. We sutured Dacron tubular vascular graft. We measured aortic size using a special designed sizer of Perceval valve. If there was an enlarged aortic annulus (more than XL Perceval sizer), we narrowed the annulus using pledgetted 4/0 polypropylene suture using commisures of of aortic valve. Three 4/0 polypropylene suture were inserted according to preoperative planning of Perceval placement. Preoperative surgery was planned according to measures of 3-D CT. Distal part of Dacron graft was anastomosed in supracoronary position, and 3 previously placed guiding sutures were passed through the graft.

We used traditional insertion method of Perceval through the graft. Proximal anastomosis of graft was sutured to the aorta. Vascular graft was wrapped using an aortic wall. In the second group, we performed surgery using a traditional method. Intraoperative and

postoperative parameters were studied in order to compare clinical results in the early after surgery. We also compared clinical results in both groups in the mid-term follow-up period.

Results:One patient died in group 2 because of LOS (3.4%). Cerebrovascular event was detected in 1 patient in group 2 (3.4%). No valve implantation related complications such as atrioventricular block, heart failure, valvular regurgitation were seen after surgery in both groups. The median duration of surgery were 153 min., and 113 min., in group 1, and in group 2, respectively ($p < 0.001$), group 2 has significantly shorter ECC time (69± 18 min vs 98± 44min $p < 0.001$). The postoperative gradients in group 1 and group 2 were 17± 4.4 mmHg vs 18.3± 3.8 mmHg, respectively. TTE showed that the postoperative effective orifice area in both groups were similar. At the end of follow-up period, group 1 and group 2 patients had NYHA class I-II. The rates of readmission because of cardiac reason were 5% in group 1, and 5.4% in group 2, respectively.

Conclusions:Ascending aortic aneurysm or bicuspid aorta are not contraindications of Perceval bioprosthetic valve use. Our technical approaches in Perceval aortic valve replacement in elderly seems to be safe and feasible. We provides excellent early and mid-term clinical outcomes which provides a better effective orifice area.

Keyword: *Perceval valve implantation, Aortic aneurysm, Bicuspid aortic valve*

Oral Presentation Session

Ablation Strateries And Outcomes

Date: 07.06.2024 Time: 13:45– 15:05 Hall: 5

ID: 9

Topic:

Cardiology > Cardiac imaging – Echocardiography

Presentation Type:

Oral Presentation

Left Atrial Appendage Depth Predicts Thrombus Formation in Atrial Fibrillation

MD Muge Akbulut* , MD Bilge Naz Ateş
Ankara University

BACKGROUND: Atrial fibrillation (AF) increases the risk of stroke by 4- to 5-fold among all age groups. The assessment of thromboembolism risk in patients with AF is mainly based on the CHA_2DS_2VASc score. However, the CHA_2DS_2VASc score has only modest performance in predicting the risk of ischemic stroke associated with AF. Lately, novel parameters related to LAA morphology and function are of interest in predicting the thromboembolic risk in AF. In the present study, we aimed to investigate the relationship between certain LAA morphological parameters and LAA thrombi. **METHODS:** We prospectively involved 21 patients with either persistent or paroxysmal AF undergoing trans-esophageal echocardiography (TOE) prior to either planned cardioversion or pulmonary vein isolation. All patients underwent a comprehensive trans-thoracic and trans-esophageal echocardiographic examination with a GE E9 ultrasound machine. The three-dimensional (3D) full volume images with electrocardiogram (ECG) gating were derived for each patient. The frame rate was set to 20-30 frames/second in the full-volume mode. LAA measurements were performed using the multiplanar reconstruction mode. Maximum (Dmax) diameter of the LAA orifice, the area of the LAA orifice were measured from the short-axis view. LAA depth was measured as the longest distance from the orifice to the tip of LAA, from the long-axes views (Figure 1). Statistical analyses were conducted with the Statistical Package for Social Sciences (SPSS) software, version 10.0. **RESULTS:** The baseline demographic and clinical characteristics of the patients are presented in Table 1. The TOE characteristics of the patients are shown in Table 2. A correlation analysis was performed in order to determine the correlation between thrombus and morphometric parameters of LAA. The maximal LAA depth was significantly associated to both LAA SEC grade and thrombi. None of the other LAA morphometric parameters were related to LAA thrombi formation. **CONCLUSIONS:** In this prospective, observational study, we aimed to evaluate the relationship between the morphometric parameters of LAA and thrombi, using 3D trans-esophageal echocardiography. We demonstrated that maximal LAA depth was significantly associated with the grade of SEC and thrombi in LAA.

Table 1. Demographic and Clinical Characteristics of Patients.

Age [years] [mean±SD]	69,8±10,5
Sex [female, %]	8 [38,1%]
Diabetes Mellitus [%]	11 [52,4%]
Hypertension [%]	4 [19%]
Atherosclerotic heart disease [%]	15 [71,4%]
Heart Failure [%]	16 [76,2%]
eGFR [mean±SD]	68,5±19,4
Plt [$x10^9$/L]	40±45,4
WBC [$x10^9$/L]	8,7±2
Hb [gr/dL]	12,2±2,3
TC [mg/dL]	156,1±40,9
NT-proBNP [pg/mL]	4480,3±6892,7
CHA_2DS_2VASc score [mean±SD]	3,1±1,3
EF, % [mean±SD]	52,±15,2
TR jet velocity (m/sec)	2,6±0,5
LA (mm)	46,1±5,6
MR - Mild - Moderate	 9 [45%] 11 [55%]
TR - Mild - Moderate - Severe	 7 [35%] 7 [35%] 6 [30%]

SD; standard deviation, eGFR; estimated glomerular filtration rate, Plt; platelet count, WBC; white blood cell count, Hb; hemobglobin, TC; total cholesterol, NT-proBNP; N-terminal pro brain natriuretic peptide, EF; ejection fraction, TR; tricuspid regurgitation, LA; left atrium, MR; mitral regurgitation, TR; tricuspid regurtigation.

Table 2. TOE measurements of the patients.

LAA depth (mm)	23,7±5
LAA OD (maximum) (mm)	22,68±5,96
LAA orifice area (maximum)	3,26±1,55
LAA orifice area (minimum)	2,53±1,1,53
LAA Δ orifice area	0,83±0,0,56
LAA SEC - Mild - Moderate - Severe	 17 [81%] 1 [4,8%] 3 [14,3%]
LAA thrombus	2 [9,5%]

LAA; left atrial appendage, OD; orifice diameter, SEC; spontaneous echo contrast.

References:

1. Hindricks G, Potpara T, Dagres N, et al. 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery [EACTS]: The Task Force for the diagnosis and management of atrial fibrillation of the European Society of Cardiology [ESC] Developed with the special contribution of the European Heart Rhythm Association [EHRA] of the ESC [published correction appears in Eur Heart J. 2021 Feb 1;42[5]:507] [pub
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Kurzawski J, Janion-Sadowska A, Sadowski M. Left atrial appendage function assessment and thrombus identification. Int J Cardiol Heart Vasc. 2016;14:33-40. Published 2016 Dec 10. doi:10.1016/j.ijcha.2016.11.003

Keyword: *left atrial appendage, atrial fibrillation, 3D trans-esophageal echocardiography*

ID: 83

Topic:

Cardiology > Transcatheter ablation for tachyarrhythmias - Ventricular tachycardia

Presentation Type:

Oral Presentation

Zero-fluoroscopic catheter ablation for ventricular tachycardia in patient with left ventricular assist device: first known case.

MD Oleg Sapelnikov* , MD Dmitrii Cherkashin , MD Darin Ardus , MD Igor Grishin , MD Aleksei Kulikov , MD Anna Vereschagina , Prof. Tatiana Uskach

National Medical Research Center of Cardiology named after Academician E.I. Chazov

Background: Management of arrhythmias in patients with left ventricular assist devices (LVAD) remains challenging. The impact of ventricular tachycardia (VT) may significantly affect the hospitalization period and mortality.

Methods: We present our first case of VT zero-fluoroscopic ablation in patient with electrical storm after LVAD implantation.

Results: A 60-year-old male with ischemic cardiomyopathy presented with VT-storm 5 days after HeartMate III implantation. ICD interrogation showed recurrent VT and repeated ICD shocks despite antiarrhythmic therapy. Septum puncture was performed under intracardiac echocardiography guidance. A PentaRay diagnostic electrode was inserted through the mitral valve into the left ventricle (LV). Mechanically fast VT with a heart rate of 200-230 bpm was induced while hemodynamics with a working LVAD remained stable. Activation and voltage mapping of the LV on VT was performed. High-frequency noise occurred when the electrodes contacted with the inflow cannula of the device, so, they were filtered manually. Site of interest was in the anterolateral part of the LV above the inflow cannula. Sites of late potentials were marked and the ablation of the indicated zones was performed using a SmartTouch electrode (ablation index 700-750) with parameters of 40 W, irrigation of 30 ml/min. Slowed ventricular conduction and termination of VT were observed. Additional VT was induced with a heart rate of 150-160 bpm via ventricular programmed stimulation. Repeated activation mapping on VT was performed. Additional ablation in the specified region was conducted – we received termination of VT and restoration of sinus rhythm with a heart rate of 75-80 bpm. Additional ablation was performed around the perimeter of the pump cannula. It's worth noting that the procedure was performed without fluoroscopy. As the result, no VT recurrence occurred in 6 months follow-up according to the interrogation.

Conclusions: Current case demonstrates successful non-fluoroscopic ablation for VT following LVAD implantation, its feasibility and safety.

Keyword: *ventricular tachycardia, catheter ablation, left ventricular assist device, heart failure, zero-fluoroscopy*

ID: 112

Topic:

Cardiology > Cardiac resynchronization therapy

Presentation Type:

Oral Presentation

Effect of PNI Malnutrition Score on Cardiac Implantable Electronic Device Surgery Outcomes

MD Serdar Söner*
SBU Gazi Yaşargil Education and Research Hospital, Diyarbakır, Turkey

Abstract

Background: Cardiac implantable electronic device (CIED) surgeries are becoming more common in parallel with the increase in life expectancy. PNI score is a score used in the evaluation of malnutrition and is a scoring system that is thought to have an impact on outcome in heart failure patients. Our aim in this study was to investigate the effect of patients' PNI score on MACE after CIED surgery.

Methods: Our research was conducted with a multicenter retrospective design. Between January 2011 and May 2016, 1676 patients who underwent CIED surgery (reimplantation, system upgrade, generator replacement, pocket revision, or lead replacement) at two cardiac centers in Turkey were evaluated. Patients were divided into 3 groups according to PNI scores. Patients with a PNI score <35 were evaluated as group 1 (severe malnutrition), 35-38 as group 2 (moderate malnutrition), and >38 as group 3 (normal).

Results: There were 449 patients in the severe malnutrition group, 470 in the moderate malnutrition group, and 757 in the normal group. The average age of the patients was 62.9±14 years and the female sex ratio was 40% (671). No significant difference was observed between the groups in terms of HT ($p = 0.055$), DM ($p = 0.088$), AF ($p = 0.158$), coronary artery disease ($p = 0.066$), heart failure (0.351). MACE rates were 6.9% (31) in group 1, 4% (19) in group 2, and 3.6% (27) in group 3 ($p=0.022$). No significant difference was observed between the groups in terms of hematoma, infection and pneumothorax.

Conclusion: The MACE rate was observed to be significantly higher in CIED surgeries in patients with moderate and severe malnutrition with low PNI scores. No significant difference was observed in terms of complications. PNI score may be predictive of MACE in patients planned for CIED surgery.

Keyword: *Cardiac implantable electronic devices, MACE, PNI score*

ID: 113

Topic:

Cardiology > Transcatheter ablation for tachyarrhythmias - Ventricular tachycardia

Presentation Type:

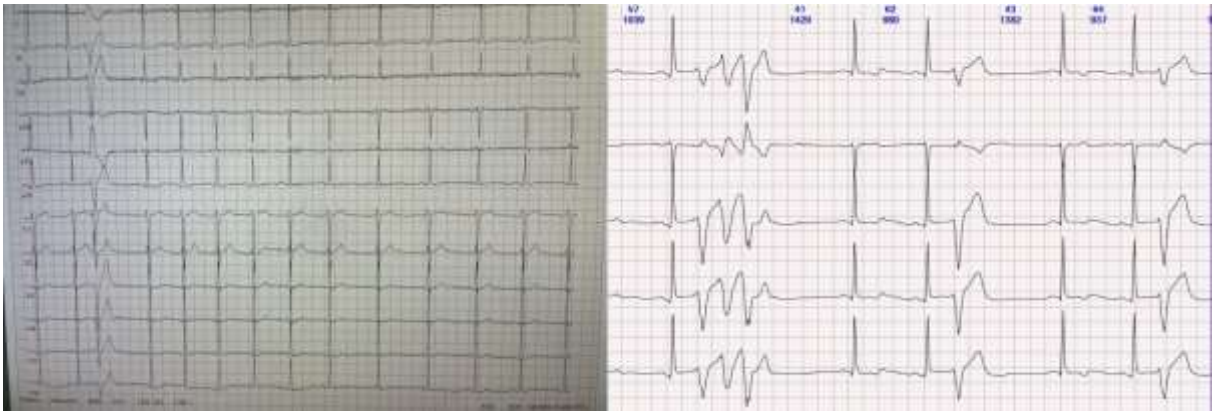
Oral Presentation

Sudden cardiac risk mitigation in a patient with short-coupled PVCs: A Case Report

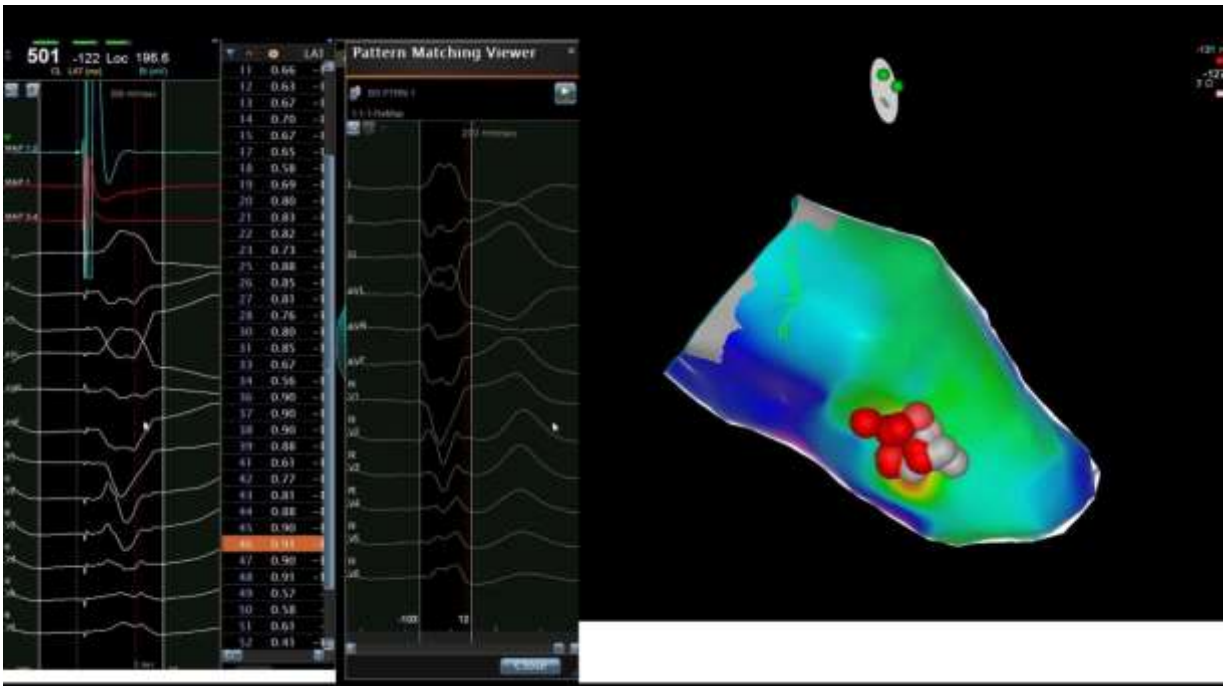
MD Gültekin Günhan Demir* , MD Kamil Gülşen , MD Serdar Demir
Kartal Koşuyolu Yüksek İhtisas Eğitim ve Araştırma Hastanesi

Introduction
Short-coupled premature ventricular contractions (PVCs) originating within the Purkinje network and Moderator Band were previously shown to be associated with malignant ventricular arrhythmias and sudden cardiac death. However, there is no clear evidence or recommendation for management of patients who have PVCs with short-coupling intervals.
Case Report
We report the case of a 30-year-old male with palpitations and short-coupled PVC on an ECG. The patient had no history of cardiac arrest or syncope. Recordings of 24-hour Holter monitoring revealed a burden of 1800 PVCs with frequent couplets and triplets, consistent with the R-on-T phenomenon. The PVC coupling interval was 304 milliseconds. PVC morphology on 12-lead ECG suggested moderator band as site of origin. Echocardiographic examinations revealed no structural abnormalities. Cardiac MR imaging was also negative for structural heart disease or fibrosis. Exercise stress testing was negative for ischemia and ventricular arrhythmia. Potential risks and treatment options were discussed with the patient, who refused implantable cardioverter defibrillator (ICD) treatment. Oral bisoprolol was initiated but ineffective. Considering the symptoms and malignant features of PVCs, we decided to attempt catheter ablation despite the low PVC burden. Colored mapping with CARTO under the guidance of pace mapping was created. A maximum matching of 91percent was achieved around the moderator band region. Extensive ablation of the maximum matching area was performed which successfully suppressed PVCs. The patient was asymptomatic in the follow-up period with no PVCs in control 24-hour Holter recording.
Discussion
PVCs are usually considered benign in the absence of structural heart disease; however, their association with life-threatening arrhythmias is not uncommon. Several risk factors associated with non-benign characteristics of PVCs have been defined, such as increased PVC burden, underlying structural, ischemic/electrical disease, complex PVCs, non-outflow tract origin and short coupling interval. The workup in our patient revealed no abnormalities as risk factors for SCD, except for a short coupling interval. Although the coupling-interval in our patient was 304 ms, a recent review investigating the extended follow-up of short-coupled idiopathic VF demonstrated that even “not-so-short” coupling intervals ≥ 350 ms were found in almost 20% of patients with idiopathic VF. Decision-making is relatively easy when it comes to patients with ventricular arrhythmias and a history of cardiac arrest or syncope. However, a large area of uncertainty exists in patients without cardiac arrest or

syncope as it was the case in our patient. Therefore, the risk of sudden death should be thoroughly investigated in each patient to determine curative treatment while avoiding unnecessary medical and device therapies, especially in the young patient population.



Twelve-lead ECG and Holter recordings of the patient indicating PVC morphology and short coupling-interval.



Twelve-lead ECG showing matching percentage and PVC morphology during pace-mapping in the CARTO mapping system.
Ablation lesions performed around moderator band under pace-mapping guidance are also shown.

References:

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ID: 124

Topic:

Cardiology > Transcatheter ablation for tachyarrhythmias - Ventricular tachycardia

Presentation Type:

Oral Presentation

UTILIZATION OF CORONARY VENOUS ETHANOL ABLATION FOR INTRAMURAL VENTRICULAR ARRHYTHMIAS IN TWO DIFFERENT SCENARIOS: A TWO-CASE REPORT

MD Emir Baskovski , MD Irem Cenan Buyukcakir* , Prof. Timucin Altin , Prof. Omer Akyurek
Ankara University, Faculty of Medicine, Department of Cardiology, Demirlibahçe, Düğün Sk. No:8, 06340 Mamak, Ankara, Turkey

Background: Catheter-based radiofrequency ablation is a recommended treatment modality for various ventricular arrhythmias.However, challenging sites that may not be accessible due to anatomical reasons, as well as intramural sites, where radiofrequency energy penetration may be limited, pose challenges that limit the success rate of radiofrequency ablation. Ethanol ablation may be an alternative option for treatment of ventricular arrhythmias that are not amenable to treatment by radiofrequency ablation.

Case presentation: This report describes two cases of successful venous alcohol ablation for refractory ventricular tachycardia to standard RF ablation procedure. In the first case, a patient with a ventricular tachycardia originating from intramural outflow tract, having failed an endocardial ablation, underwent a successful ethanol ablation of the annular vein with over the wire balloon system and monorail balloon system. In the second case, we describe a patient with a history of transcathater aortic valve replacement and premature ventricular complexes originating from intramural outflow tract. Radiofrequency ablation in this patient was limited by both the far-field appearing signals and the proximity prosthetic valve to the site of these signals. Theferore, this patient also underwent successful ethanol ablation of annular vein with the over the wire system after venography of coronary sinus. No complications were observed in both patients. Both patients had an arrhythmia-free follow-up.

Conclusions: Coronary venous ethanol ablation may be a safe and successful technique for ablation of intramural ventricular arrhythmias in different clinical scenarios.

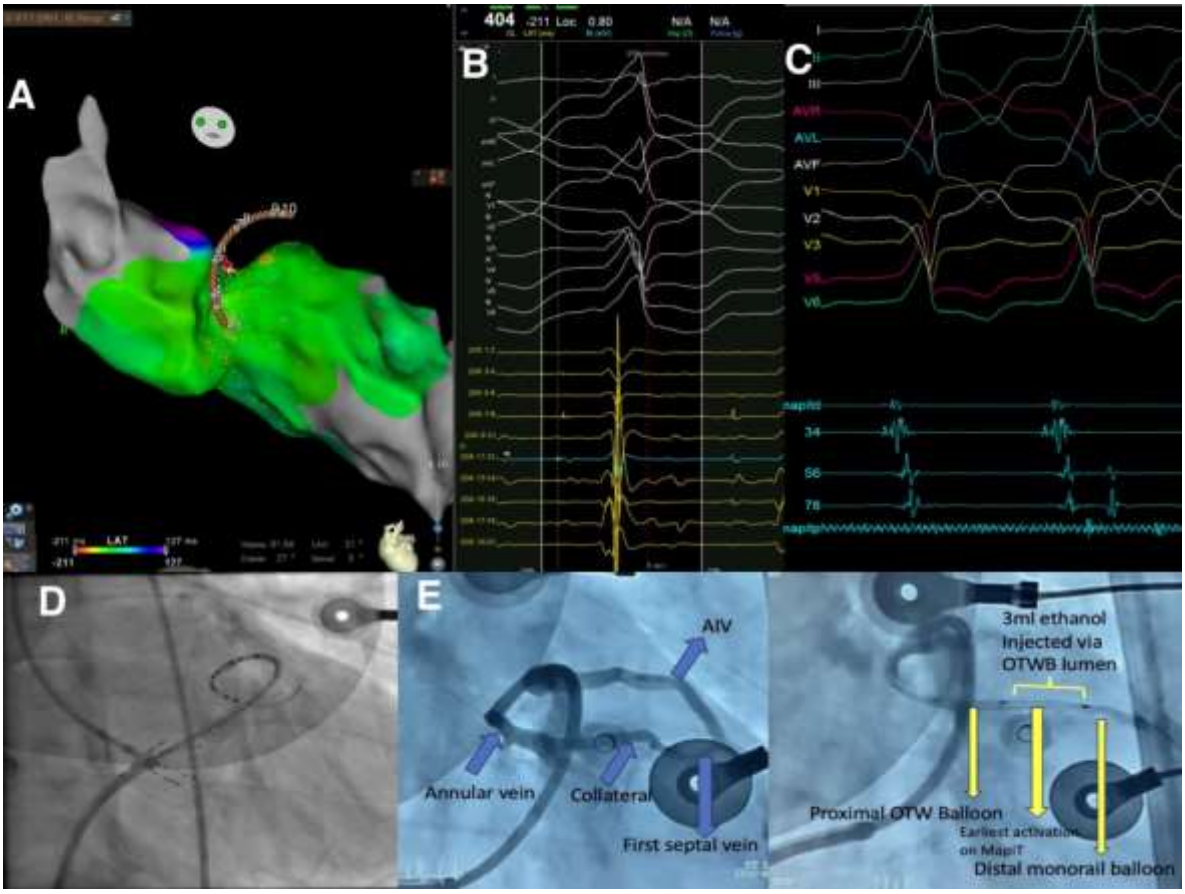

Figure 1.Endocardial activation map of supravalvular and subvalvular LVOT with Carto 3 (Biosense-Webster, CA, USA) electroanatomic mapping system. B. Earliest endocardial signal is a far-field signal. Extensive ablation at that site did not suppress the arrhythmia. C. Coronary venography revealed an annular vein with a collateral to the first septal vein. Map-iT catheter revealed 50msec precocity (electrodes 3-4) in the collateral (D). Utilizing a double balloon technique with monorail balloon placed distally, 3ml of ethanol was injected via lumen of the proximally placed over-the-wire balloon. Within 10 minutes complete elimination of the arrythmias was observed.

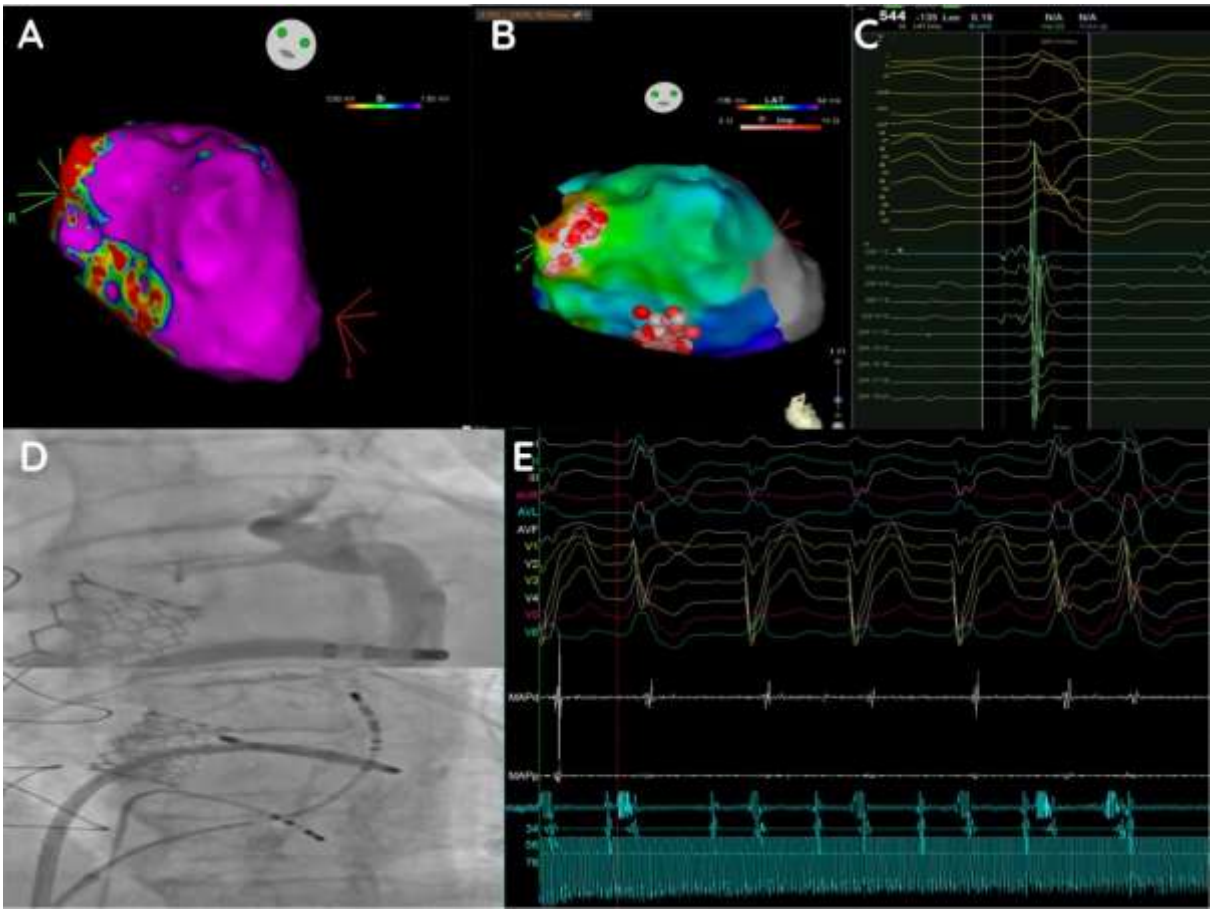

Figure 2. A. Endocardial bipolar voltage map revealed a discreet area of low voltage in the inferior LV, probably arising due to a previous myocardial infarction. B. Activation map of the targeted PVC revealed some far-field activation immediately beneath the prostetic aortic valve. Also shown are the lesions both in the inferior low voltage area where the scar modification was performed and in the subvalvular LVOT where early far-field (C) activation was observed. Endocardial ablation failed to suppress the PVC. D. Coronary sinus venography showed an annular vein, which was cannulated by Map-IT catheter. The distal bipolar signals were 52msec, pre-QRS. 3ml ethanol injected over a over-the-wire balloon lumen completely suppressed the arrhythmia.

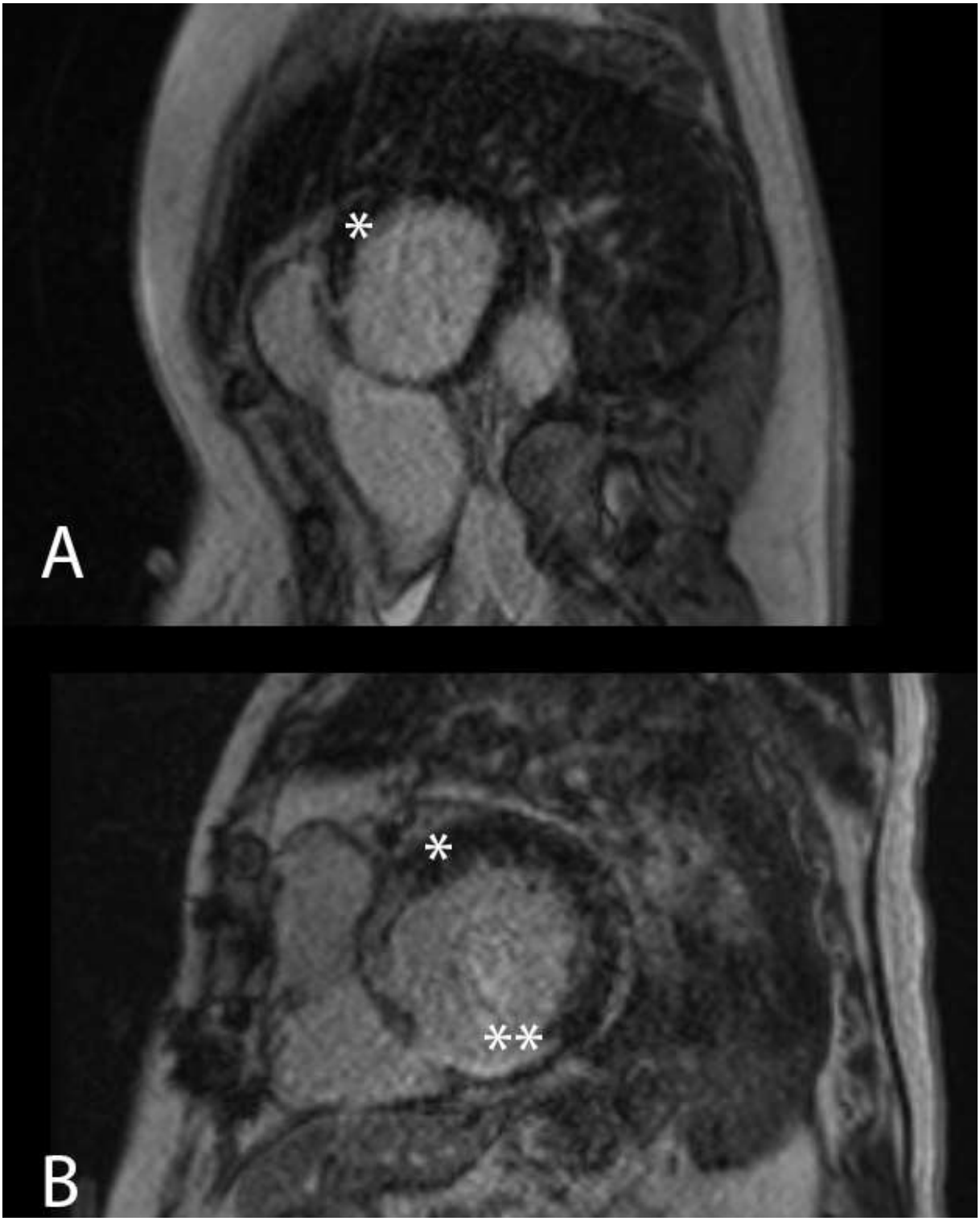

Figure 3. Cardiac magnetic resonance imaging in patients after ethanol ablation. A. The first case showed a minimal gadolinium enhancement in the basal anterior septum marked by asterix (*). B. The second case demonstrates two discreet areas of late gadolinium enhancement. The first area, marked by a single asterix (*) is gadolinium enhancement in the basal anteroseptum. The second area, marked by a doble asterix (*) is the transmural gadolinium enhancement in the inferior wall due to previous myocardial infarction and scar homogenization with radiofrequency ablation.

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Keyword: *Coronary venous ethanol ablation, ventricular arrhythmias, ethanol ablation, radiofrequency ablation*

ID: 137

Topic:

Cardiology > Management of atrial fibrillation

Presentation Type:

Oral Presentation

Impact of preoperative left ventricle diastolic disfunction on 2-year atrial fibrillation recurrence after catheter ablation.

MD Aykun Hakgör*

Istanbul Medipol University, Medipol Mega Hospital, Dept. of Cardiology, Istanbul, Turkey.

Background: In the last decade, catheter ablation methods have been widely used in the treatment of patients with both paroxysmal and non-paroxysmal atrial fibrillation (AF).[1,2] Despite increased operator experience and improved device technologies, AF recurrence is still frequently encountered. Although various predictors of AF recurrence after catheter ablation have been demonstrated in different series to date, the effect of preoperative left ventricular diastolic dysfunction (LVDD) on prognosis has not yet been clearly established.[3,4,5] In this study, we investigated the effect of the presence and degree of LVDD determined echocardiographically before AF ablation on AF recurrence.

Methods: The study included 554 patients who underwent cryo (n=491, 63%) and radiofrequency (n=63, 11.4%) ablation for paroxysmal (n=387, 69.9%) and non-paroxysmal (n=167, 30.1%) AF between 2016 and 2021 at a tertiary center. The study population was retrospectively divided into 3 groups according to the presence and degree of LVDD by transthoracic echocardiography (TTE) performed before the procedure: without LVDD, grade 1 and 2 LVDD, and grade 3 LVDD, respectively. The primary endpoint of the study was AF recurrence at 2-year follow-up after a 3-month blanking period subsequent to successful catheter ablation.

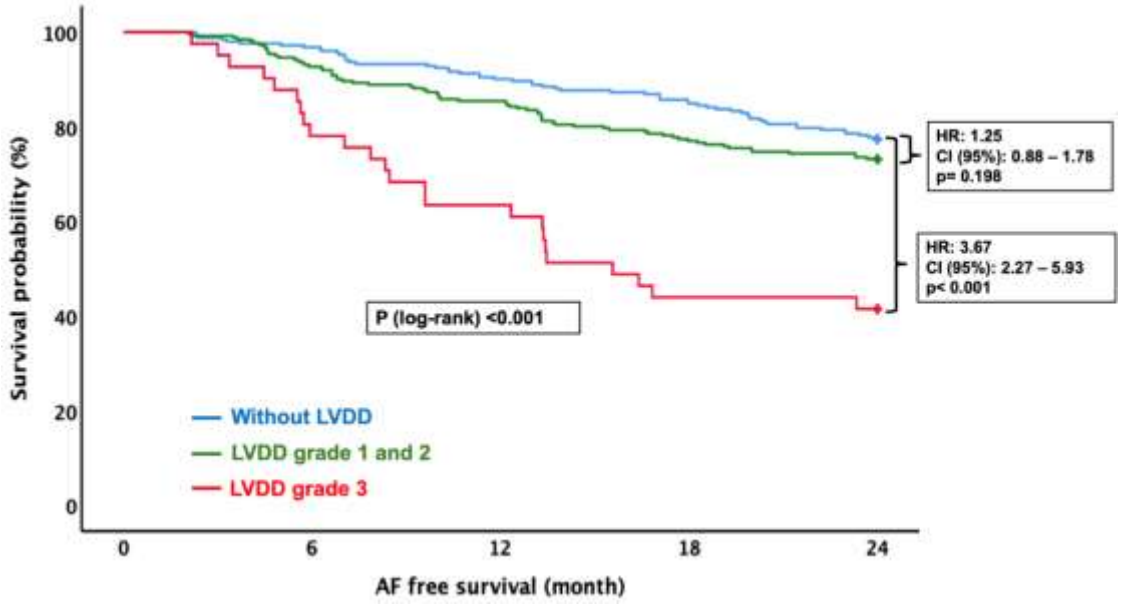
Results: The comparison of clinical and echocardiographic characteristics and AF recurrence rates of patients divided into 3 groups according to LVDD is given in Table-1. AF recurrence rates were similar between the groups without LVDD and those with grades 1 and 2 LVDD (22.6% vs. 26.8%) and significantly higher in the group with grade 3 LVDD (58.5%).

Table-1: Clinical characteristics and outcomes of the patient population based on echocardiogarphically assesed left ventricle diastolic disfunction.

	Without diastolic disfunction	Grade 1 and 2 diastolic disfunction	Grade 3 diastolic disfunction	p
Age	55.8±9.8	58.8±10.1	63.9±6.3	<0.001
Female sex	92 (36.5%)	128 (49%)	20 (48.8%)	0.013
BMI (kg/m^2)	25.8±4.6	27.1±5.1	28.8±4.1	<0.001
GFR (mL/min/1.73m^2)	91.6±20.7	84.6±21.5	70.4±29.2	<0.001
Hypertension	145 (57.5%)	207 (79.3%)	32(78%)	<0.001
Coronary artery disease	62 (24.6%)	115 (44.1%)	18 (43.9%)	<0.001
HFrEF (≤40%)	39 (15.5%)	51 (19.5%)	7 (17.1%)	0.479
DM	64 (25.4%)	68 (26.1%)	6 (14.6%)	0.282
Smoking	61 (24.2%)	105 (40.2%)	14 (34.1%)	0.001
COPD	18 (7.1%)	41 (15.7%)	3 (7.3%)	0.006
OSAS	7 (2.8%)	12 (4.6%)	1 (2.4%)	0.498
Prior stroke	14 (5.6%)	20 (7.7%)	3 (7.3%)	0.624
CHA_2DS_2-VASc score	1.91±1.45	2.71±1.38	2.73±1.28	<0.001
HAS-BLED score	1.15±0.88	1.75±0.91	2.07±0.84	<0.001
NOAC Vit-K antagonist None	188 (74.6%) 14 (5.6%) 50 (19.8%)	205 (78.5%) 19 (7.3%) 37 (14.2%)	32 (78%) 3 (7.3%) 6 (14.6%)	0.482
Cryoablation RF ablation	229 (90.9%) 23 (9.1%)	222 (85.1%) 39 (14.9%)	40 (97.6%) 1 (2.4%)	0.021
Paroxismal AF Non-paroxismal AF	201 (79.8%) 51 (20.2%)	174 (66.7%) 87 (33.3%)	12 (29.3%) 29 (70.7%)	<0.001
EF (%)	58.7±10.4	57.1±11.3	58.1±10.3	0.207
LA diameter (mm)	39.4±5.3	41.1±5.7	44.1±5.8	<0.001
LA diameter ≥40 mm	96 (38.1%)	138 (52.9%)	27 (65.9%)	<0.001
LVED diameter (mm)	47.9±6.1	48.3±6.7	47.7±5.9	0.723
LVES diameter (mm)	32.1±8.6	33.3±9.3	33.1±10.1	0.288

Left ventricular hypertrophy	40 (15.9%)	77 (29.5%)	29 (70.7%)	<0.001
AF recurrence	57 (22.6%)	70 (26.8%)	24 (58.5%)	<0.001

According to a multivariate Cox-regression analysis to identify independent predictors of AF recurrence in the examined population, a left atrial diameter of ≥40 mm [adjusted HR:3.38, CI 95% (2.34 - 4.87), p<0.001], non-paroxysmal AF [adjusted HR:1.44, CI 95% (1.02 - 2.02), p=0.034] and grade 3 LVDD [adjusted HR:2.74, CI 95% (1.66 - 4.53), p<0.001] were found to be statistically significant variables. When the AF-free survival probability curves generated with the Kaplan-Meier method were analyzed, it was clearly observed that the grade 3 LVDD group differed significantly from the other two groups at 24 months [p (log-rank) <0.001] (Figure-1).



Conclusions: In patients who are planned to undergo catheter ablation for AF, the pre-procedural TTE showing grade 3 but not grade 1 and 2 LVDD seems to be an emerging factor that decreases long-term treatment efficacy. This may guide clinicians in patient selection and determination of prognosis.

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Keyword: *atrial fibrillation, catheter ablation, outcome, diastolic disfunction*

ID: 156

Topic:

Cardiology > Transcatheter ablation for tachyarrhythmias - Atrial fibrillation

Presentation Type:

Oral Presentation

Clinical Results of Radiofrequency Catheter Ablation in Atrial Fibrillation Recurrence Cases After Cryoballoon Pulmonary Vein Isolation.

MD Fatih Erkam Olgun* , Prof. Fethi Kılıçaslan
Istanbul Medipol University

Background: Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia. Cryoballoon ablation (CBA) is a safe and efficient method for pulmonary vein isolation (PVI) in the treatment of AF. Compared with radiofrequency catheter ablation (RFCA), PVI with CBA has been shown to have shorter procedure time and similar atrial tachyarrhythmia-free follow-up time. Various studies have shown that recurrence rates after CBA are approximately 25% in patients with paroxysmal AF and approximately 30% in patients with persistent AF. RF has been shown to be the preferred energy source over CBA when patients require repeat AF ablation procedures.

Objective: The aim of this study is to retrospectively screen patients who had recurrence after CBA and underwent RFCA and to investigate their clinical outcomes.

Methods: This retrospective single-center study enrolled patients who had recurrence after CBA and underwent RFCA from 2020 to 2022. All interventions were performed under general anesthesia with uninterrupted oral anticoagulation (OAC) and transoesophageal echocardiography (TEE) was performed on patients who were in AF on the day of the procedure. All procedures were performed under the guidance of a fluoroscopic, three-dimensional electro-anatomical mapping system (CARTO3, Biosense-Webster) and TEE if needed. Single transeptal puncture (TSP) was performed and after the TSP a deflectable long sheath (AgilisTM, Abbott Medical) was placed in the left atrium (LA). PentaRay (Biosense-Webster) mapping catheter was employed to reconstruct the LA, pulmonary veins (PVs), and bipolar voltage mapping was performed. An irrigated, contact force RF catheter (ThermoCool SmartTouch, Biosense Webster) was positioned in the LA and if reconnection was seen, PVs were re-isolated. All patients underwent non-PV ablation involving the LA roof, LA bottom, LA posterior wall, cavotricuspid isthmus (CTI). Mitral isthmus, superior vena cava, coronary sinus, left atrial appendage (LAA), atrial tachycardia (AT) ablation was performed at the discretion of the operator. Ablation lesions have been delivered to achieve an ablation index value of 450 on the posterior wall and 500–550 on anterior segments. Acute procedural success was defined as electric isolation of PVs, confirmed by entrance and exit block and a line of bidirectional block when linear ablations were performed. After ablation procedure, figure of eight suture was applied without protamine administration. Patients were discharged with OAC and class I or III antiarrhythmic drug treatment on the

day after the procedure after checking there were no signs of pericardial effusion by transthoracic echocardiography. Patients were followed up at the 1st week, 1st month, 6th month,1st year and 2nd year with anamnesis, physical examination, 12-lead electrocardiogram and 24-hour rhythm holter if necessary. An episode of AF lasting at least 30 seconds will be defined as a relapse.

Results: We included 41 patients (age 58±12.4 years, 32% females,) with AF (18 paroxysmal; 43.9%) who had recurrence after CBA and underwent RFCA. Baseline characteristics of study population are summarized in Table 1. The average time from CBA to RFCA was 39.54±24.23 months. PV reconnection was not observed in 29 (70.7%) patients. AT ablation was performed in 10 patients (24.4%). In 4 patients (9.8%), the LAA was isolated and the LAA closure device was placed. Pericardial effusion that did not require drainage was observed in 1 patient (2.4%). During clinical follow-up, arrhythmia-free patients were 75.6% at 12 months and 65.9% at 24 months. Clinical parameters are summarized in Table 2.

Table 1. Baseline Characteristics and Laboratory Findings

Variables	(n=41)
Baseline characteristics	
Age (years), mean (SD)	57.51±12.38
Gender (female), n (%)	13 (31.7%)
Diabetes Mellitus, n (%)	5 (12.2%)
Atrial fibrillation (paroxysmal), n (%)	18 (43.9%)
Hypertension, n (%)	28 (68.3%)
Hyperlipidemia, (%)	23 (56.1%)
Coronary Artery Disease, n (%)	20 (48.8%)
Congestive Heart Failure, n (%)	5 (12.2%)
Cerebrovascular Disease, n (%)	3 (7.3%)
Chronic Renal Disease, n (%)	2 (4.9%)
Thyroid Dysfunction, n (%)	5 (12.2%)
Current Smoker, n (%)	3 (7.3%)
Body Mass Index(kg/m^2)	27.31±4.12
Left ventricular ejection fraction (%; SD)	60.98±5.76
Left atrial diameter (mm), mean (SD)	43.37±8.49
CHADVASC Score, mean (SD)	2.21±1.95
HASBLED Score, mean (SD)	1.04±0.83
Laboratory Findings	
Creatinine (mg/dl; SD)	0.92±0.17
WBC (x10^3 /µL; SD)	7.83±2.31
Hemoglobin (g/dL; SD)	14.04±1.83
Platelets (x10^3 /µL; SD)	260.78±90.50
ALT(U/L)	22.85±8.30
AST (U/L)	19.61±8.68
Medications	
NOAC, n (%)	39 (95.1%)
Warfarin, n (%)	2 (4.9%)

*Continues variables are reported (mean±SD). Categorical variables are reported n(%).
Abbreviations: ALT; Alanine transaminase, AST; Aspartate transaminase, NOAC; Novel oral anticoagulants, WBC; White Blood Cell.

Table 2: Procedural Parameters and Follow Up

Pulmonary Vein Reconnections	(n=41)
Left Superior PV, n (%)	6 (14.6%)
Left Inferior PV, n (%)	2 (4.9%)
Left Common PV, n (%)	1 (2.4%)
Right Superior PV, n (%)	4 (9.8%)
Right Inferior PV, n (%)	5 (12.2%)
PV non-reconnection, n (%)	29 (70.7%)
Non PV Trigger Ablation, n (%)	
Posterior Wall Isolation, n (%)	41 (100%)
Roof Line, n (%)	41 (100%)
Bottom Line, n (%)	41 (100%)
Mitral Isthmus Line, n (%)	27 (65.9%)
CS Isolation, n (%)	5(12.2%)
SVC Isolation, n (%)	9 (21.9)
CTI Ablation, n (%)	41 (100%)
LAA Isolation, n (%)	4 (9.8%)
AT ablation, n (%)	10 (24.4%)
Complications, n (%)	
Pericardial tamponade, n (%)	0 (0%)
Pericardial effusion, n (%)	1 (2.4%)
Access site complications, n (%)	2 (4.9%)
Follow Up, n (%)	
Recurrence at 6 months, n (%)	7 (17.1%)
Recurrence at 12 months, n (%)	10 (24.4%)
Recurrence at 24 months, n (%)	14 (34.1%)

Categorical variables are reported n (%).
Abbreviations: AT; Atrial Tachycardia, CS; Coronary Sinus, CTI; Cavotricuspid Isthmus, LAA; Left Atrial Appendage, PV; Pulmonary Vein, SVC; Superior Vena Cava.

Conclusion: CBA as the first procedure in AF patients and RFCA in case of recurrence may be feasible, safe and effective treatment.

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Keyword: *Atrial fibrillation; Cryoballoon ablation, Radiofrequency catheter ablation*

ID: 157

Topic:

Cardiology > Arrhythmias and antiarrhythmic therapy

Presentation Type:

Oral Presentation

Marshall Vein Ethanol Alcohol ablation in Different Groups of Arrhythmia Patients: A Single Center Experience

MD Emir baskovski , MD Şeyhmus Atan* , Prof. Ali Timuçin Altın , Prof. Ömer Akyürek , MD İrem Müge Akbulut Koyuncu , Prof. Eralp tutar

Ankara üniversitesi, Tıp Fakültesi, Kardiyoloji ABD, Ankara

INTRODUCTION: The vein of Marshall (VOM) is an embryologic remnant of the left superior vena cava. It is involved in the pathogenesis of AF and perimitral atrial tachycardia as a pathway for parasympathetic and sympathetic innervations that modulate the electrophysiologic properties of atrial tissue and contribute to the maintenance of AF. Ethanol infusion with retrograde balloon cannulation into the vein of Marshall produces local ablation, eliminates AF triggers and innervation in the vein of Marshall, and facilitates mitral isthmus ablation. VOM alcohol ablation in combination with pulmonary vein isolation is recommended in patients with persistent AF. The aim of this study was to determine the indications for VOM ablation in our center and to investigate the success of VOM alcohol ablation.

METHODS: Marshall vein anatomy was defined by coronary sinus venography. In the presence of appropriate vascular structure, the vein of Marshall was crossed with a 0.014 wire and cannulated with an OTW balloon (1,5-2mm) followed by 96% Ethanol injection (dosing at the discretion of the operator). Additional mapping/ablation was performed as per clinical indication.

FINDINGS: Marshall vein alcohol ablation was planned in 43 patients between March 2022 and April 2024 in our center. VOM was not visualized in 5 patients (12%). In 6 (14%) patients, although the coronary sinus was cannulated, the VOM could not be cannulated either due to abscene of the vessel, or due to challenging anatomy such as acute take-off angle or thin diameter. In 1 patient, alcohol injection was not performed because of dissection in the VOM. Of the 31 patients who underwent alcohol ablation of the VOM, 16 (37%) were women. Sixteen (37%) of the patients had persistent AF, 10 (23%) had recurrence after ablation, and 6 (14%) had atrial tachycardia. The mean amount of ethanol used per patient was 8.7 cc. No procedure-related complications were observed in any of the patients who underwent VOM ablation.

CONCLUSIONS: The benefit of radiofrequency catheter ablation in patients with persistent AF does not have a strong level of evidence and recurrence after ablation is more frequent in

this group of patients. Different ablation techniques have been tried to restore sinus rhythm in this group of patients. VOM ablation has recently become increasingly prominent among these techniques. However, literature data are insufficient for its introduction into routine practice. In the VENUS study, the addition of VOM ablation to catheter ablation was shown to reduce the recurrence of AF or atrial tachycardia at 6 and 12 months among patients with persistent AF compared with catheter ablation alone. Further studies are needed to evaluate long-term efficacy. In this study, we aimed to demonstrate the successful VOM ablation in addition to radiofrequency catheter ablation in our center.

References:

Valderrábano M, Peterson LE, Swarup V, et al. Effect of Catheter Ablation With Vein of Marshall Ethanol Infusion vs Catheter Ablation Alone on Persistent Atrial Fibrillation: The VENUS Randomized Clinical Trial. JAMA. 2020;324(16):1620–1628. doi:10.1001/jama.2020.16195

Keyword: *Ablation, Alcohol, Peristan AF, VOM*

IACCS

Challenges in Congenital CardiacSurgery: Video Session

Date: 07.06.2024 Time: 15:15– 16:25 Hall: 4

ID: 13

Topic:

Cardiovascular Surgery > Congenital heart disease

Presentation Type:

Oral Presentation

From Minimally Invasive Pulmonary Artery Banding And Trans-Catheter Pulmonary Valve Replacement To Minimally Invasive Pulmonary Valve Replacement

Prof. Massimo Griselli*
King abdullah bin Abdulaziz University Hospital Riyad Saudi Arabia

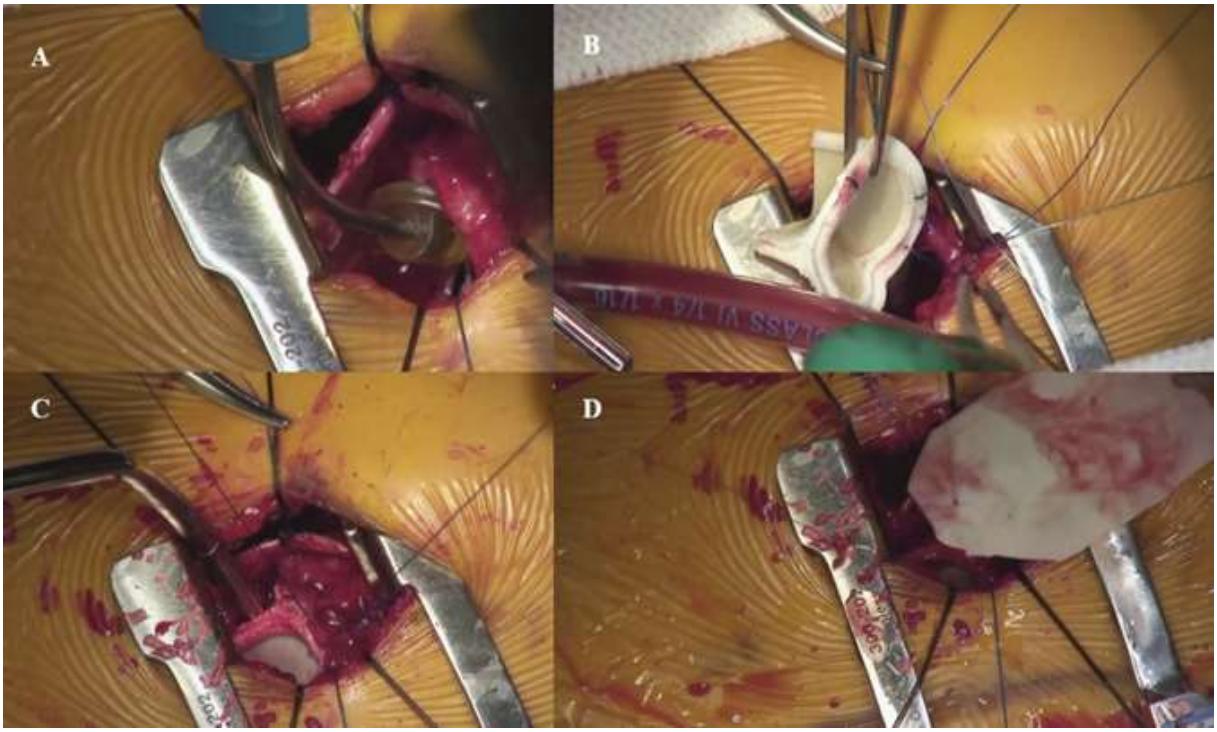
BACKGROUND: Trans-catheter pulmonary valve replacement (PVR) has recently become very common with limited morbidity and hospital stay. This approach is offered to patients who require only PVR, or in those patients who need additional work in the pulmonary artery (PA) branches or closure of residual intra-cardiac shunts. Conventional surgery is preferred in those cases requiring extensive pulmonary branch arterioplasty, repair of other cardiac valves or closure of intra-cardiac shunts not amenable to trans-catheter closure. Limitation of trans-catheter approach is the size of available valves. Several patients who need PVR are those with Tetralogy of Fallot treated with trans-annular patch, resulting in the right ventricular outflow tract and MPA much larger than available valves. Therefore, these patients are referred for surgery. The author spent two years at King Faisal Specialty Hospital in Riyadh where he was introduced to minimally invasive MPA banding through a small left anterior thoracotomy to provide a 'landing zone' for interventional cardiologist to deploy trans-catheter pulmonary valve. This 'hybrid' approach was extremely successful and performed regularly, and the author imported this approach to the current Institution.

METHODS: Patients were prepared in hybrid suite for redo cardiac surgery. On our second case, we found difficulty to encircle the MPA due to its size and fragility. We attempted an anterior plication, but MPA was still wider for trans-catheter valves. Therefore, we moved to the surgical suite where we instituted CPB by upsizing femoral vascular access used by cardiologists. As there was no intra-cardiac shunt, we explored the possibility of implanting the pulmonary valve from the mini anterior thoracotomy and we were able to complete it easily.

RESULTS: Another six primary PVRs using this mini-anterior thoracotomy approach and peripheral femoral CPB have been performed successfully. All procedures were successful.

TEE confirmed excellent valve function with no peri-valvar leaks. Mean hospital stay was much shorter than traditional sternotomy (Mean = 3 days), without complications.

CONCLUSIONS: This novel approach for surgical PVR can be offered to select patients resulting in shorter hospital stays and recovery. We aim to perform more complex cases even in patients with intra-cardiac shunts or branch pulmonary artery stenosis, with initial interventional cardiac catheterization followed by minimally invasive PVR. A thorough review of all preoperative imaging is paramount in deciding the feasibility of the operation and the location of the incision to allow complete visualization of the pulmonary artery and the pulmonary valve



Oral Presentation Session

What Is New In Non-Invasive Electrocardiology

Date: 07.06.2024 Time: 15:20– 16:40 Hall: 5

ID: 168

Topic:

Cardiology > Electrocardiography and non-invasive electrocardiology

Presentation Type:

Oral Presentation

Evaluation of Repolarization Parameters in Patients with Ankylosing Spondylitis

Assoc. Prof. Seçkin Dereli*
Ordu University Faculty of Medicine Department of Cardiology

Introduction:

Ankylosing spondylitis (AS) is associated with an increased cardiovascular (CV) morbidity compared to the general population. The heightened risk of CV involvement in AS is likely multifactorial, including accelerated atherosclerosis due to inflammation, and cardiac inflammation manifesting as aortitis and conduction abnormalities. CV functions are affected in 10-50% of patients with AS. It has been shown that patients with AS have sympathetic and parasympathetic dysfunctions. QT prolongation is a significant risk factor for torsades de pointes and ventricular fibrillation. The aim of this study is to investigate the repolarization parameters in patients with AS.

Materials and Methods:

Patients diagnosed with AS who had high-quality standard ECGs were retrospectively included in the study. A total of 28 AS patients and 20 healthy controls were included in the research. Patients with electrolyte imbalances, bundle branch block, coronary artery disease, heart failure, thyroid disease, and chronic kidney disease were excluded from the study. A 12-lead ECG was performed on all patients. The ECG was recorded at an amplitude of 10 mm/mV and a speed of 25 mm/s. The demographic and clinical parameters of the patients are shown in Table 1. QT was measured in all leads. The longest QT value was taken for the QTc calculation. QTc was calculated using Bazett's formula ($QTc = QT/\sqrt{RR}$).

Results:

No differences were found in terms of clinical features and laboratory parameters (Table 1). However, regarding electrocardiographic parameters, measurements of QT, QTc, QTd, and QTcd in AS patients were statistically significantly higher compared to the control group,

while the RR interval in AS patients was found to be significantly lower than that of the control group.

Discussion:

Cardiac involvement can occur in patients with AS without significant cardiac symptoms. In this study, we found that repolarization parameters were significantly higher in AS patients compared to the healthy control group. As a result of this study, it was concluded that AS patients should be closely monitored for cardiac arrhythmias, even if they are asymptomatic. However, larger clinical studies are needed.

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Keyword: *Ankylosing Spondylitis, Arrhythmia, Repolarization*

ID: 31

Topic:

Cardiology > Stroke prevention in atrial fibrillation

Presentation Type:

Oral Presentation

INCIDENCE OF SILENT BRAIN INJURY IN PACEMAKER IMPLANTED PATIENTS WITH ATRIAL HIGH-RATE EPISODES

MD Ahmet Cinar[*] [1] , Assoc. Prof. Omer Gedikli[1] , MD Muhammet Uyanik[2] , Prof. Bahattin Avci[3]
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Purpose: Atrial high rate episodes (AHRE) are tachyarrhythmia attacks that can be detected by implantable cardiac devices. In the European Society of Cardiology (ESC) 2020 AF guideline, AHRE is defined as ≥ 175 bpm for the device-programmed rate criterion and ≥ 5 minutes for the duration criterion. AHRE has been shown to be one of the predisposing factors of AF and stroke. However, the relationship between AHRE and SBI has not been clarified yet. Neuron spesific enolase (NSE) is a valid biomarker for quantifying the volume of neuronal damage. In this study, we aimed to evaluate the incidence of silent brain injury (SBI), defined as elevated NSE levels in AHRE detected patients.

Method: Between January 2021 and June 2022, 80 patients who underwent routine pacemaker control, met the inclusion and exclusion criteria, and had AHRE detected in their permanent pacemaker records were included in the Ondokuz Mayıs University Faculty of Medicine Cardiology Arrhythmia Polyclinic. For the control group, patients who had a permanent pacemaker and did not have AHRE or any other arrhythmia were included. Of patients with AHRE detected in the last 6 months and those who had an AHRE attack within the last 72 hours were examined.

Results: Individuals included in the study were divided into subgroups according to AHRE duration. Group 1 (non-AHRE) 80 (50.0%), Group 2 (AHRE lasting <5 min) 24 (15.0%), Group 3 (≥5 min - <1h) 33 (20.6%), 19 (11.9%) patients in Group 4 (lasting ≥1 h - <24 h) and 4 (2.5%) patients in Group 5 (lasting ≥24 h). There was a statistically significant difference in NSE median values between groups (p=<0.001). In Mann Whitney U test with Bonferronni correction, the median values of all other groups were significantly different from each other (p=<0.001). In the correlational analysis, there was a statistically significant positive relationship between AHRE duration and NSE values (r=0.842; p=<0.001). Additionally, there was correlation between AHRE duration and age (r=0.235; p=0.036), CHA2DS2-VASc score (r=0.226, p=0.044) and LA diameter (r=0.300; p=0.007). NSE levels were positively correlated with AHRE duration (r=0.842; p=<0.001) and LA diameter (r=0.242; p=0.030).

Conclusion: AHRE duration was longer in patients with advanced age, increased CHA2DS2-VASc score, and increased LA diameter. This may play a role in explaining the underlying pathophysiological changes in AHRE before AF develops. Since NSE levels are related to LA diameter as well as AHRE duration, it can be thought that increasing LA diameter contributes to the development of thrombus.

ID: 33

Topic:

Cardiology > Arrhythmias and antiarrhythmic therapy

Presentation Type:

Oral Presentation

Effect of Dapagliflozin on Arrhythmia in Patients with Heart Failure and ICD

Assoc. Prof. Sabri Seyis*
Mersin Şehir Hastanesi

Background: Heart failure (HF) patients with an implantable cardioverter-defibrillator (ICD) face a high risk of ventricular arrhythmias and sudden cardiac death. Dapagliflozin, a sodium-glucose cotransporter 2 (SGLT2) inhibitor, has shown promise in reducing cardiovascular mortality, though its effects on arrhythmias in HF are not fully understood. This study assesses dapagliflozin's impact on the frequency of ventricular arrhythmias and the necessity for ICD shocks in HF patients, enhancing our understanding of its cardiovascular benefits.

Methods: In this retrospective cohort analysis, we evaluated 74 HF patients with ICDs before and after initiating dapagliflozin treatment. Eligibility required an ICD implantation for at least three months, age over 20, and an ejection fraction ≤35%. Exclusions were prior SGLT2 inhibitor use, treatment interruption, known dapagliflozin allergy, specific medical conditions, and certain treatments affecting arrhythmia. We collected data on ventricular arrhythmias and ICD shocks six months pre- and post-dapagliflozin initiation. Statistical methods included descriptive statistics, normality tests, and appropriate group comparison tests, utilizing Jamovi and JASP software with significance set at $p<0.05$.

Results: No significant difference was found between the number of shocks observed in the 6-month follow-up before dapagliflozin treatment and the number of shocks observed in the 6-month follow-up after dapagliflozin treatment ($p=0.754$). Also, VT episodes were similar($p=0.453$). Patients who developed shock and VT episodes after dapagliflozin treatment had significantly higher CRP levels, and lower ejection fraction and eGFR levels compared to those without shock development.

Conclusion: Dapagliflozin treatment in heart failure patients with ICDs has no adverse effects on arrhythmia episodes and ICD shock therapy. This aligns with the broader literature indicating dapagliflozin's role in reducing heart failure events and cardiovascular deaths without specifically addressing its impact on ICD shock occurrences.

Table 1. Shock Incidence Before and After 6 Months of Dapagliflozin Therapy in Heart Failure Patients with Implantable Defibrillators

	Shock at 6-Month Follow-up After Dapagliflozin		p-value
	No (n=62)	Yes (n=12)	
Shock at 6-Month Follow-up Before Dapagliflozin			
No	56 (90.3)	4 (33.3)	0.754
Yes	6 (9.7)	8 (66.7)	

Table 2. Ventricular Tachycardia Episodes Before and After 6 Months of Dapagliflozin Treatment in Heart Failure Patients with Implantable Defibrillators

	VT Attack at 6-Month Follow-up After Dapagliflozin		p-value
	No (n=57)	Yes (n=17)	
VT Attack at 6-Month Follow-up After Dapagliflozin [‡]			
No	52 (91.2)	2 (11.8)	0.453
Yes	5 (8.8)	15 (88.2)	

Keyword: *Heart Failure, Dapagliflozin, Implantable Cardioverter Defibrillator, Ventricular Arrhythmias, SGLT2 Inhibitors*

ID: 96

Topic:

Cardiology > Electrocardiography and non-invasive electrocardiology

Presentation Type:

Oral Presentation

The Effect of Parkinson's Disease on the PR Interval to P wave Ratio

MD Unal Ozturk , Prof. Onder Ozturk*

Health Sciences University of Turkey, Diyarbakır Gazi Yasargil Education and Research Hospital, Department of Neurology, Diyarbakir, Turkiye

Background: PD is a neurodegenerative disorder characterized by motor and nonmotor symptoms. Among these non-physical symptoms, the incidence of autonomic nerve function symptoms is higher, such as cardiovascular, gastrointestinal, genitourinary tract dysfunction. Cardiovascular dysfunctions such as orthostatic hypotension, decreased heart rate variability and arrhythmias have been frequently seen in Parkinson's disease (PD) patients. Cardiovascular physiological analyses showed that electrocardiography (ECG) abnormalities in PD patients. Mochizuki H et al demonstrated the prolongation of the PR interval in PD. Causes of the PR prolongation are sympathetic system abnormality. The purpose of this study is investigate the effect of PD on the PR Interval to P wave ratio

Methods: Twenty six PD patients and twenty three control cases retrospectively registered in this study. Diagnosis of PD was performed in accordance with the definition criteria for PD of the United Kingdom Parkinson's Disease Society Brain Bank. 12-lead electrocardiogram (ECG) recorded from the patient records. Calculated ECG parameters are heart rate, RR, P, QRS, QT, PR/P. All cases had sinusal rhythm.

Results: Among PD patientss, 17 cases were female (65 %). The mean age of PD patients are 76.11±10.30 years. Age, glucose, urea, eGFR were significantly higher in Parkinson's disease group than healthy group. Total protein, albumin, hemoglobin were significantly lower in Parkinson's disease group than healthy group (Table 1). Heart rate was significantly lower in Parkinson's disease group than healthy group. PR, QT, QTc, PR interval / P wave were significantly higher in Parkinson's disease group than healthy group (Table 2).

Conclusion: In this study, we found that PR interval / P wave ratio was significantly higher in Parkinson's disease group than healthy group.

Table 1: Demographic and clinical parameters of the study groups.

Variables	Parkinson disease patients (n=26)	Control group (n=23)	p value
Age (year)	76.11 ± 10.30	35.91 ± 9.27	<0.001
Gender (F/M)	17/9	12/11	0.394
Glucose (mg/dL)	144.19 ± 61.92	91.52 ± 16.11	<0.001
Urea (mg/dL)	44.84 ± 18.48	27.26 ± 7.88	<0.001
Creatinine (mg/dL)	0.76 ± 0.23	0.72 ± 0.12	0.453
eGFR (ml/minute/1.73m2)	77.0 ± 16.30	92.34 ± 16.82	<0.001
Sodium (mmol/L)	138.96 ± 3.03	139.54±1.99	0.445
Total protein (g/L)	66.33 ± 8.66	76.27 ± 2.79	0.003
Potassium (mmol/L)	4.25 ± 0.45	4.33 ± 0.32	0.478
Albumin (g/L)	37.0 ± 6.12	43.95 ± 2.49	<0.001
Magnesium (mg/dL)	1.97±0.19	1.80±0.44	0.207
Calcium (mg/dL)	9.37 ± 0.48	9.19 ± 0.52	0.233
Hemoglobin (g/dL)	13.13 ± 1.52	14.52 ± 1.77	0.009
Leucoytes (/10^3/uL)	7.75±2.05	8.42±1.59	0.230

F: Female, M: Male, eGFR: Estimated glomerular filtration rate

Table 2: ECG parameters of the study groups

Variables	Parkinson disease patients (n=26)	Control group (n=23)	p value
Heart rate (beats/min)	72.37 ± 17.64	84.60 ± 13.06	0.010
P wave duration (ms)	106.04±10.56	99.12 ± 15.94	0.086
PR interval (ms)	184.43 ± 28.16	156.16 ± 23.22	0.006
QT interval (ms)	431.66 ± 45.65	346.47 ± 29.15	<0.001
QTc interval (ms)	472.5 ± 37.6	409.63 ± 28.3	<0.001
P wave / PR interval	1.78 ±0.24	1.52±0.29	0.023

QTc: Corrected QT

References:

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Keyword: *Parkinson’s disease, ECG, PR interval / P wave*

ID: 97

Topic:

Cardiology > Electrocardiography and non-invasive electrocardiology

Presentation Type:

Oral Presentation

Assessment of T-wave Axis in Multiple Sclerosis Patients

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BACKGROUND: Multiple sclerosis (MS) disease of central nervous system, resulting in autonomic dysregulation. Some electrocardiographic changes have been reported in MS patients that can lead to arrhythmia. The T-wave axis is relatively novel ventricular repolarization parameters that appear more reproducible than the QTc-interval measurement. It can be measured as its spatial orientation, which needs computerized vectorcardiographic reconstruction from the standard 12-lead ECG signals, or as its projections on the frontal plane, which is simpler and easily obtainable. T-wave axis has also been demonstrated to predict cardiovascular morbidity and mortality in clinical and in general populations. Therefore, the aim of this study was to investigate the assessment of T-wave axis in MS patients

METHODS: Twenty seven multiple sclerosis patients and twenty five healthy cases were registered. Patients were divided into 2 groups (Group 1; MS patients, Group 2; Healthy control). Demographic, clinical, and laboratory data for all patients were recorded. Standard resting 12-lead ECGs were recorded digitally (Schiller Cardiovit AT-102 G2, Feldkirchen, Germany) and response frequencies at 25 mm/s paper speed and 10 mm/mV amplitude. T-wave axes were analyzed automatically.

RESULTS: The demographic and clinical parameters of the MS patients and the control cases are shown in Table1. Age, creatinine, sodium, calcium, leucocyte were signficantly higher in Healthy control than MS patients. However, there was no significant difference between the two groups with according ECG parameters. T-wave axes was not significantly different between the groups (Table 2).

CONCLUSIONS: In this study, we found that, there is no significant difference between groups according to T-wave axes.

Table 1: Clinical and biochemical variables of cases

Parameter	**Multiple Sclerosis Patients (n=27)**	**Control group (n=25)**	**p Value**
Age (year)	29.41±3.61	37.35±9.57	<0.001
Gender (F/M)	16/11	14/11	0.946
Creatinine (mg/dL)	0.60±0.12	0.72±0.11	0.002
eGFR (ml/minute/1.73m2	92.34±13.5	94.67±14.8	0.781
Glucose (mg/dL)	92.74±14.72	92.61±17.01	0.977
Calcium (mg/dL)	9.08±0.58	9.63±0.61	0.002
Potassium (mmol/L)	4.29±0.33	4.29±0.32	0.974
Sodium (mmol/L)	137.81±1.77	139.48±1.80	0.002
Hemoglobin (g/dL)	13.66±2.06	14.37±1.68	0.232
Leucocyte (10^3 / µL)	6.80±1.92	8.12±1.66	0.018
Platelet (10^3 / µL)	246.78±61.74	280.30±71.70	0.093

F: Female, M: Male, eGFR: Estimated glomerular filtration rate

Table 2: Electrocardiographic variables of cases

Parameters	**Multiple Sclerosis Patients (n=27)**	**Control group (n=25)**	**p Value**
RR (ms)	698.59±55.55	738.65±97.20	0.075
P wave duration (ms)	98.33±12.07	105.17±12.42	0.055
PR duration (ms)	136.33±22.02	149.04±23.37	0.054
QRS duration (ms)	85.11±12.90	87.34±7.57	0.469
QT duration (ms)	351.37±13.93	351.47±25.61	0.985
T-wave axis	33.81±20.94	38.34±11.79	0.362

References:

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Keyword: *Multiple sclerosis, ECG, T-wave axis*

ID: 127

Topic:

Cardiology > Transcatheter ablation for tachyarrhythmias - Supraventricular tachycardia

Presentation Type:

Oral Presentation

POSTOPERATIVE INCISIONAL ATRIAL FLUTTER. ELECTROPHYSIOLOGICAL DIAGNOSTICS AND INTERVENTIONAL TACTICS

MD Kenzhebek Bizhanov[*] [1] , MD Akmoldir Sarsenbayeva[2] , MD Adil Baimbetov[3]

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Purpose of the study: due to the rapid growth rate of open heart surgeries, more aggressive surgical tactics for treating heart lesions and long-term survival of patients, the increasing relevance of treatment of postoperative tachycardia, the frequency of which reaches 45-55%. The use of electroanatomical systems has opened new horizons in the occurrence of such tachycardias, but the problem of long-term ablation and recurrence of tachycardias has traditionally been encountered in every electrophysiology laboratory.

Materials and methods: Intracardiac electrophysiological study (IC EPS) and radiofrequency ablation (RFA) using an electro-anatomical mapping system were performed on 51 patients with incisional tachycardia and 54 patients with isthmus-dependent atrial flutter (AF) after surgical correction of heart defects. Ablation of all potential reentry circles was performed, all scars were connected to each other and to the anatomical obstacle. In patients with typical atrial flutter, all macro-re entry substrates are also ablated. Intracardiac electrophysiological study (IC EPS) and radiofrequency ablation (RFA) using an electro-anatomical mapping system were performed on 51 patients with incisional tachycardia and 54 patients with isthmus-dependent atrial flutter (AF) after surgical correction of heart defects. Ablation of all potential reentry circles was performed, all scars were connected to each other and to the anatomical obstacle. In patients with typical atrial flutter, all macroreentry substrates are also ablated.

Results: in patients with atypical atrial flutter, circles were predominantly associated with “scars” along the anterolateral wall of the right atrium; in 12 patients, tachycardia was ectopic in nature. In patients with isthmus-dependent AF, a “scar” extending to the inferior vena cava was identified, which is an additional anatomical barrier to the sustainable maintenance of AFL. Bicyclic AF was detected in 21 cases, in 9 patients it was associated with the circulation of the activation wavefront around the tricuspid valve and around the scar field. In the remaining patients, the circulation of excitation occurred with the capture of

scars. During the follow-up, the effectiveness of ablation of tachycardias involving the lower isthmus of the heart was 94%, and in other cases 91%.

Conclusions: Electroanatomical mapping is undoubtedly the “gold standard” for the treatment of postoperative tachycardias. Multiple scar fields, altered anatomy and electrophysiology of the atria, impaired hemodynamics, as well as sinus node dysfunction create a constant readiness of “operated hearts” for the occurrence of several circles in one patient. Therefore, to increase the effectiveness of ablation, it is necessary to eliminate not only the existing re entry circle, but also all putative circles of tachycardia, including in patients with isthmus-dependent AF.

Keyword: *INCISIONAL ATRIAL FLUTTER, electrophysiological study, radiofrequency ablation (RFA), Electroanatomical mapping, supraventricular tachycardia*

ID: 130

Topic:

Cardiology > Cardiac pacing for bradyarrhythmias

Presentation Type:

Oral Presentation

Comparison of the quality of life of patients who underwent implantation of leadless and conventional pacemaker

MD Akmoldir Sarsenbayeva[*] [1] , MD Adil Baimbetov[2] , MD Kenzhebek Bizhanov[3]

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Purpose: to compare the quality of life of patients after implantation of various types of pacemakers, depending on the invasiveness of the intervention.

Materials and methods: Patients who underwent implantation of a single-chamber pacemaker between December 2018 and March 2022 were included in the study. We used the SF-36 questionnaire to assess quality of life at baseline and at 6 and 12 months follow-up. We also used a questionnaire consisting of 36 questions and 4 specific questions related to the implantation procedure.

Results: A total of 44 patients were included (22 - leadless; 22 - conventional). There were no differences in baseline characteristics between groups except age (mean age 43.5 years).

After 9 months of follow-up, patients in the leadless pacemaker group showed significantly higher scores in physical function (47 vs. 32; P<0.001), physical function (53 vs. 37; P=0.004), and mental health (67 vs. 52; P=0.017). even after adjusting for covariates. Pacemaker-related discomfort and physical limitations were significantly lower in the leadless pacemaker group.

Conclusion: Use of leadless pacemakers is associated with better quality of life, less activity limitation due to surgical discomfort, and less emotional distress. However, currently the use of leadless pacemakers in Kazakhstan is limited due to their high cost.

Keyword: *pacemaker, leadless pacemaker, conventional pacemaker*

Oral Presentation Session

Surgical Management of Atrial Fibrillation: Pitfalls and Practical Issues

Date: 07.06.2024 Time: 16:50– 17:50 Hall: 5

ID: 63

Topic:

Cardiovascular Surgery > Surgical treatment of AF

Presentation Type:

Oral Presentation

In-hospital And Long Term Outcomes Of «PULVAB» RCT

Prof. Amiran Revishvili , Prof. Vadim Popov* , MD Egor Malyshenko , MD Maksim Anishchenko , MD Natalia Popova , MD Kirill Kozyrin

A.V. Vishnevsky National Medical Research Center of Surgery, Moscow, Russian Federation

BACKGROUND. According to current data, the incidence of new onset postoperative atrial fibrillation (AF) after coronary bypass surgery (CABG) is 21-30% and worsens both short- and long-term CABG outcomes, that persuades the necessity to develop prophylaxis approaches. Aim:to evaluate the results of prophylactic strategies in new onset POAF after CABG.

METHODS. The prospective RCT «PROPHYLACTIC PULMONARY VEINS ABLATION» (PULVAB Clinical Trial NCT03857711) includes 175 patients. The inclusion criteria are the CAD without anamnesis of AF. The exclusion criteria are urgent surgery, concomitant valvular heart disease, decompensation of chronic diseases. Patients were randomized into 4 groups: I group - conventional CABG (n=45), II group - conventional CABG with administration of amiodarone (n=42), III group - concomitant CABG and RFA PV (n=45) , IV group - concomitant CABG and RFA PV with administration of amiodarone in postoperative period (n=42). Primary endpoints are incidence of POAF, sinus rhythm, freedom from MACCE. Secondary endpoints are operation time, cross-clamping time, CPB time. Bipolar RFA PV was performed without aortic cross-clamping using parallel CPB before CABG. The LAA occlusion weren't performed. There are no differences in clinical, demographic parameters, comorbidities and EchoCG parameters.

RESULTS. Preventive RFA PV did not increase time of the stages of operation: the operation time (p=0,14), CPB time (p=0,08), cross-clamping time (p=0,19). There were no incidents of in-hospital mortality. There weren't any wound complications or bleeding or perioperative MI or stroke reported. There were 18 (40%) cases of POAF in I group POAF, 14 (33,3%) cases in II group, 7 (15,5%) cases in III group, 2 (4,8%) cases in IV group, respectively. No significant difference was found when comparing the groups I and II (p=0,41), groups II and III (p=0,23), III и IV(p=0,18). Significantly lower rates of POAF relative to group I was observed in group III (p=0.025) and IV (p=0.003), that can be caused by high preventive efficiency of both stand-

alone RFA PV and the combination of RFA PV with amiodarone. By the time of discharge sinus rhythm had 95,5%; 97,6%; 97,6% and 95,5% patients in groups I, II, III и IV, respectively (p=0,21). There was no mortality incidence in 12 months- follow up. Freedom from MACCE was 91,5%, 94,5%, 98% and 98% in four groups, respectively. Freedom from AF/AFL/AAT in 12 months was 81,5%, 84,5%, 92,8% and 98% in four groups, respectively.

CONCLUSION. Stand-alone bipolar RFA PV or in combination with amiodarone as a preventive approach significantly reduces incidence of new onset AF after CABG and don't increase rates of short- and long-term complications.

Keyword: *CABG, new onset postoperative atrial fibrillation, bipolar RFA, amiodarone, PROPHYLACTIC PULMONARY VEINS ABLATION*

ID: 78

Topic:

Cardiovascular Surgery > Surgical treatment of AF

Presentation Type:

Oral Presentation

The result of left atrial appendage exclusion with thoracoscopic treatment of atrial fibrillation.

Prof. Vadim Popov*

M.D., Ph.D., Prof., Head of the Cardiac Surgery Department, A.V. Vishnevsky National Medical Research Center of Surgery, Moscow, Russian Federation

The result of the left atrial appendage amputation with thoracoscopic treatment of atrial fibrillation.

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2. Russian Medical Academy of Continuous Professional Education, Moscow, Russian Federation.

Background. The thoracoscopic technique currently occupies a leading position in the treatment of isolated forms of atrial fibrillation (AF). Amputation of the left atrial appendage (LAA), as the main site for thrombosis, is one of the stages in thoracoscopic treatment of AF. To analyze the intraoperative and hospital results of the LAA amputation with thoracoscopic treatment of AF using L-R-L technique.

Methods. The retrospective single-center study included 300 patients with various forms of AF had undergone the thoracoscopic treatment AF using the L-R-L technique and LAA amputation. The LAA amputation was performed using a surgical cutting and stitching endo-stapler. The device was installed via the Vth intercostal space on the left anterior axillary line after removal of the thoracoscopic port at the final stage of radiofrequency ablation. The study evaluated the intraoperative safety of the LAA amputation and the results of the hospital period.

Results. The mean age was 60±9.7 years, the majority of the patients (199 patients, 66.3%) were male. 124 patients (41%) had paroxysmal AF, 176 patients (59%) had nonparoxysmal AF, respectively. 245 patients (81.6%) had 2 or more points on the CHA2DS2-VASc score; 15 patients (5%) had 3 or more points on the HAS-BLED score. 28 (9.3%) patients had a history of ischemic stroke. According to intraoperative transesophageal echocardiography, the

mean size of the LAA was 17.6 x 32.5 mm. All patients underwent thoracoscopic treatment of AF using the L-R-L technique and the LAA amputation. The criteria for effective LAA closure was considered to be a residual stump <10 mm via interoperative transesophageal echocardiography. After amputation, the mean LAA stump length was 5.8 x 4.4 mm, however, in 10 patients (3.6%), mainly with a cauliflower-shaped appendage, the size of the residual stump was more than 10 mm. The technical success of the isolated LAA was 96.4%. In our series of observations, the LAA removal by endo-stapler was not associated with intraoperative and postoperative bleeding. Neither case of stroke nor TIA was observed at the in-hospital period.

Conclusion. This study shows high perioperative safety and technical success of LAA amputation during thoracoscopic treatment of AF using L-R-L technology.

Keyword: *Atrial fibrillation, Stroke, Thoracoscopy, left atrial appendage, The left atrial appendage amutation*

ID: 109

Topic:

Cardiovascular Surgery > Surgical treatment of AF

Presentation Type:

Oral Presentation

Combined minimally invasive surgical treatment of patients with isolated left anterior descending artery lesion and atrial fibrillation

MD Dmitry Bystrov[*] [1] , Prof. Roman Komarov[2] , MD Alexey Shonbin[1] , MD Boris Afonin[1] , MD Roman Sorokin[1]

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Objective. To evaluate the immediate results of combined minimally invasive surgery in patients with isolated left anterior descending artery lesions and atrial fibrillation.

Material and methods. This prospective study included 12 patients who underwent simultaneous minimally invasive coronary bypass surgery of the left anterior descending artery and thoracoscopic radiofrequency ablation of the left atrium from 2021 to 2023.

Results. The average duration of the operation was 233 ± 33 minutes. Most of the patients were transferred from the cardiac surgical intensive care unit on the first day of the postoperative period. The duration of the postoperative hospital period is 9 ± 3 days. Sinus rhythm was observed at discharge in 11 (91,6%) patients. There were no complications or fatalities. In 2 patients, a recurrence of AF occurred in the early postoperative period; in 1 patient, it was stopped due to the treatment with antiarhythmics; second patient, despite medication and 2 attempts at electroimpulse therapy, was discharged with AF. An examination 3 months after the operation showed that there were no angina or heart failure symptoms. Sinus rhythm was recorded in 9 cases (90%), and 1 patient who was discharged with AF still had a cardiac arrhythmia.

C**onclusion.** The results obtained demonstrate the successful use of a combined minimally invasive approach in the treatment of coronary heart disease and AF. The combined use of minimally invasive surgical technologies in patients with this pathology is an effective, safe and reproducible method of treatment.

Keyword: *atrial fibrillation, MIDCAB, thoracoscopic maze*

ID: 51

Topic:

Cardiovascular Surgery > Coronary bypass surgery

Presentation Type:

Oral Presentation

Multi-inflammatory Index As A Novel Predictor Of New-onset Atrial Fibrillation After Off-pump Coronary Artery Bypass Grafting

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BACKGROUND: Multi-inflammatory index (MII) is a newly developed index group composed of several inflammatory indexes including neutrophil/lymphocyte ratio (NLR), platelet/lymphocyte ratio (PLR) and systemic immune-inflammation index (SII), combinating with C-reactive protein (CRP). The prognostic and/or predictive capacity of MII has been recently examined in various cardiovascular diseases such as acute coronary syndrome, acute ischemic stroke and pulmonary embolism. However, to the best of our knowledge, there is no study examining the possible relationship between MII and atrial fibrillation (AF) in the literature. Therefore, we hypothesized that MII, a novel inflammatory indicator, could be a predictor of new-onset AF after off-pump coronary artery bypass grafting (CABG), and this study was designed to examine whether there was a possible predictive relationship between MII and new-onset AF in patients undergoing off-pump CABG.

METHODS: A total of 427 patients undergoing isolated off-pump CABG between October 2021 and December 2023 were enrolled to this retrospective observational cohort study, and divided into two groups according to the development of new-onset postoperative AF; as AF group (n=108) and non-AF group (n=319). The groups were compared in terms of basic clinical characteristics and comorbidities, operative and postoperative data as well as preoperative laboratory parameters including MII-1, MII-2 and MII-3. Following the univariate analyses, the multiple explanatory variable logistic regression analysis was conducted to determine the independent predictors of postoperative new-onset AF while the receiver-operating characteristic (ROC) curve analyses were conducted to determine the optimal cut-off values of the identified independent predictors.

MIIs were calculated using the following formulas: MII-1= NLRxCRP; MII-2= PLRxCRP; and MII-3= SIIxCRP.

RESULTS: The median values of age, length of hospital stay, platelet, neutrophil, CRP, SII, MII-1, MII-2 and MII-3 were detected to be significantly greater in AF group compared to non-AF group in the univariate analyses. In the multiple explanatory variable logistic regression analysis, MII-1, MII-2 and MII-3 were determined to be significant hematological variables, and thereby these indexes were considered as the independent predictors of postoperative new-onset AF. ROC curve analyses showed that for predicting of postoperative new-onset AF, MII-1 of 22.47 constituted the cut-off value with 62.0% sensitivity and 57.0% specificity, MII-2 of 141.77 constituted the cut-off value with 43.5% sensitivity and 76.8% specificity, and MII-3 of 5669 constituted the cut-off value with 63.8% sensitivity and 58.3% specificity.

CONCLUSION: Our study revealed for the first time in the literature that all MIIs significantly predicted new-onset AF after off-pump CABG.

Keyword: *Multi-inflammatory index, predictor, atrial fibrillation, off-pump coronary artery bypass grafting*

ID: 57

Topic:

Cardiovascular Surgery > Risk management in cardiovascular diseases

Presentation Type:

Oral Presentation

Artificial intelligence to predict preoperative biomarkers for new-onset atrial fibrillation after coronary artery surgery

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BACKGROUND

Postoperative atrial fibrillation (POAF) is a common complication after CABG with an incidence up to 40%. POAF is associated with the risk for cerebrovascular events, congestive heart failure, myocardial infarction, mortality, and prolonged hospital stay. It is important to determine the risk of POAF before surgery to take precautions. For this purpose, several studies were performed. This study aimed to determine predictors from a pool of routinely performed tests by using machine learning methods.

METHODS

The study was conducted on 100 patients (50 POAF and 50 non-POAF patients) randomly selected from 265 patients undergoing CABG. Patients with AF prior to surgery and patients with severe postoperative complications were excluded.

Diagnosis of AF was performed according to 2010 guidelines of European Society of Cardiology.

All routine laboratory results obtained at least 48 hours before surgery were collected. Data regarding demographics, echocardiography findings and perioperative measures were collected.

Machine learning models were used for comparison of data.

RESULTS

Incidence of new-onset POAF was 21.69%. The dataset represents a matrix of 100 rows and 92 columns.

Boruta Feature Selection Algorithm was used to determine the importance of features. The sorting of features is: magnesium, total iron binding capacity, albumin, hemoglobin, cardiopulmonary bypass time, glucose, left atrium size, hematocrit, phosphor, ejection fraction, cross-clamp time, calcium, uric acid and white blood cell count.

Regarding decision tree model the three most important features are Magnesium, total iron binding capacity and Albumin. Patients with values not above the threshold value of 1.2 for magnesium are AF positive and constitute 25% of the data set. The second parameter was total iron binding capacity, values greater than 442 are AF positive and constitute 12% of the data set. The Albumin threshold value is 29, values above this threshold value were AF positive and constituted 4% of the data set.

CONCLUSION

The three most effective properties were Magnesium, Total Iron Binding Capacity and Albumin.

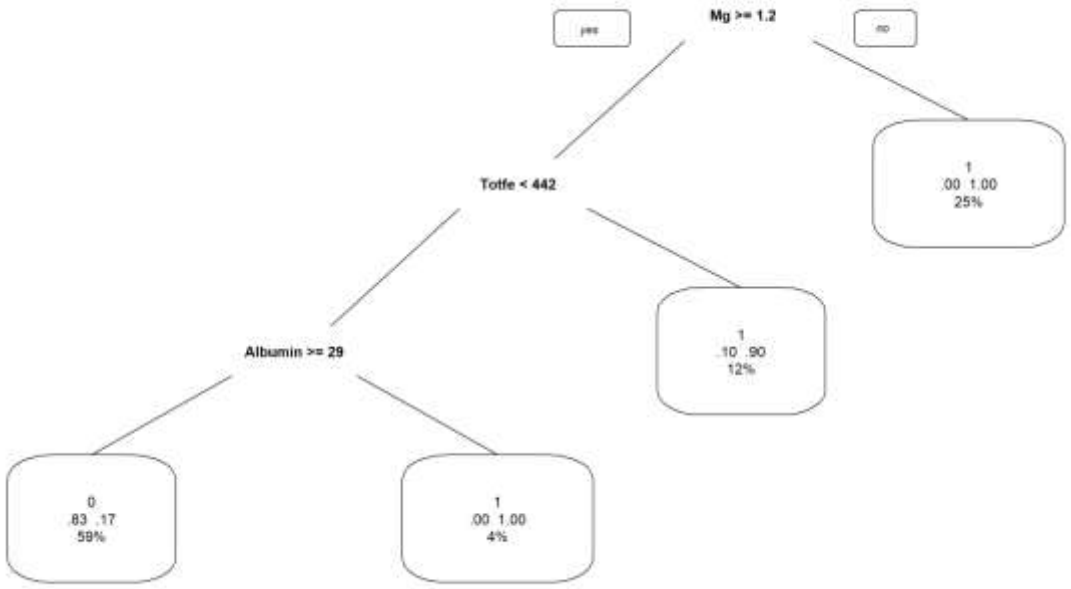
The Decision Tree algorithm correctly classified the data using threshold values. These findings may constitute an important step in identifying potential predictive features for developing AF after CABG. ML analysis with a wide range of properties could be important in avoiding poor outcome after surgery.

It was our first experience using ML models to predict AF after cardiac surgery. It was important to determine a ranking in probably effective properties. Another important finding is the threshold values of the most important properties.

TABLE of HIGHLY RANKED FEATURES:

	POAF Group	**nonPOAF Group**	**p**
Magnesium (mg/dL)	1.49 ± 0.502	1.84 ± 0.248	< 0.001
Total iron binding capacity (µg/dL)	385.26 ± 59.046	341.18 ± 61.585	< 0.001
Albumin (g/dL)	35.61 ± 6.555	42.47 ± 6.138	< 0.001
Hemoglobin (g/dL	12.35 ± 2.789	13.96 ± 1.662	< 0.001
Cardiopulmonary bypass time (min)	102.68 ± 22.886	99.24 ± 36.292	< 0.05
Glucose (mg/dL)	166.14 ± 68.246	128.04 ± 51.844	< 0.05
Left atrium diameter (mm)	38.96 ± 3.063	36.98 ± 4.744	< 0.05
Hematocrite (%)	37.34 ± 8.007	41.67 ± 4.802	< 0.05
Phosphor (mg/dL)	3.63 ± 0.875	3.04 ± 0.643	< 0.001
Ejection fraction (%)	51.92 ± 16.251	55.60 ± 8.429	> 0.05
Cross-clamp time (min)	63.58 ± 19.737	66.98 ± 32.059	> 0.05
Calcium (mg/dL)	9.32 ± 0.567	9.39 ± 0.692	> 0.05
Uric acide (mg/dL)	7.53 ± 6.121	5.32 ± 1.281	< 0.05
White blood cell count	8.40 ± 3.322	8.79 ± 2.162	> 0.05

DECISION TREE



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Keyword: *atrial fibrillation, risk prediction, caba, machine learning*

ID: 141

Topic:

Cardiovascular Surgery > Coronary bypass surgery

Presentation Type:

Oral Presentation

Radiofrequency pulmonary vein isolation for paroxysmal atrial fibrillation during isolated CABG

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BACKGROUND: Inpatient early and long-term results of radiofrequency pulmonary vein ablation for paroxysmal atrial fibrillation during isolated coronary artery bypass grafting were analyzed.

METHODS: A retrospective analysis of 148 consecutive CABGs with pulmonary vein ablation from 2011 to 2022 was performed at the Federal Center for Cardiovascular Surgery (Chelyabinsk). Patients undergoing operation with documented preoperative paroxysmal AF were included. We evaluated the efficacy and safety of simultaneous CABG and pulmonary vein ablation.

RESULTS: Hospital mortality was 0.9%. Long-term survival rate was 100%. No pacemaker implantation was required. At the time of discharge, 95.91% were free from atrial fibrillation. During follow-up, 100 patients (92.59%) were examined. The mean follow-up period was 41.7 ± 19.3 (6–88) months. The freedom from strokes was 100%. The freedom from atrial fibrillation was 96%.

CONCLUSIONS: Simultaneous pulmonary vein ablation during CABG is an efficacy and safe procedure for treatment of paroxysmal atrial fibrillation, providing a favorable in-hospital and long-term results.

Keyword: *CABG, atrial fibrillation, Radiofrequency pulmonary vein isolation*

ID: 12

Topic:

Cardiology > Preventive cardiology

Presentation Type:

Oral Presentation

Effect of Cardiac Rehabilitation on CONUT Score in Cardiac Patients

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Background: Malnutrition is common in fragile cardiac patients and is associated with an increased risk of functional impairment and mortality. The Controlled Nutritional Status (CONUT) score is known as one of the significant markers of nutritional status. The CONUT score is calculated from serum albumin level, total cholesterol and total peripheral lymphocyte count; It is an immunonutrition index that reflects protein/lipid metabolism and immune competence. Malnutrition, as assessed by the CONUT score, has been shown to be associated with worse clinical outcomes in cardiac patients.

Cardiac rehabilitation(CR) is a multicomponent rehabilitation program for cardiac patients designed to maximize secondary prevention of heart disease. It has main components such as nutritional counseling , risk factor modification , psychosocial management , patient education , and exercise training. In this context, our aim is to evaluate the change in the nutritional status of cardiac patients before and after CR through the Conut score.

Methods: It was conducted as a single-center retrospective study with 145 patients over the age of 18 who completed 30 sessions of CR and examinations of cardiac patients who were referred to the CR unit of our hospital between January 2017 and November 2018.

Results: A total number of 145 patients (55%, n:81 men) with a mean age 55.9±10.1 were enrolled for this study. (19.3%n:28) of patients have diabetes mellitus. Body mass index,systolic blood pressure and diastolic blood pressure levels were 30.1 ± 5.3 ,131.5 ±14.4mmHg, 82.3 ± 8.1 mmHg before and 29.7 ± 5.1 , 122.1 ± 14.7mmHg, 122.1 ± 14.7mmHg after rehabilitation, respectively (P<0.001) Although there was no significant difference in total cholesterol and total peripheral lymphocyte counts before and after 30 sessions of cardiac rehabilitation, a significant difference was detected in albumin and CRP levels (before CR 4.3±0.17 , 0.77±0.64 and after CR 4.5±0.52, 0.54±0.38) (P< 0.001). CONUT

score was notably reduce after rehabilitation (before CR 0.9 ± 1.1 0.0(0.0-2.0) after CR 0.2± 0.5 0.0(0.0-0.0))(P<0.001).

Conclusion: CR plays a crucial role in the cardiac patients. We conclude that CR reduces the CONUT Score, which reflects nutritional status in cardiac patients and has been shown to be associated with morbidity.

Oral Presentation Session

Understanding Coronary Artery Disease: A Multilevel Approach

Date: 09.06.2024 Time: 08:30– 09:40 Hall: 4

ID: 50

Topic:

Cardiology > Chronic stable angina pectoris

Presentation Type:

Oral Presentation

Is There Any Relation Between Atherogenic Plasma Index and Coronary Collateral Circulation

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Introduction:

The plasma atherogenic index (AIP) is calculated by the logarithm of the ratio of triglyceride (TG) to high-density lipoprotein cholesterol (HDL-C) concentrations. While previous studies have demonstrated the association of AIP with coronary artery disease (CAD), there is no relevant study investigating the relationship between AIP and coronary collateral circulation (CCC) in patients with chronic total coronary occlusion (CTO). This study aims to investigate whether there is an association between AIP and impaired collateralization in CAD patients with CTO lesions.

Method: The study included 196 patients who underwent invasive coronary angiography and had at least one CTO lesion identified. The collateral grade was determined according to the Rentrop classification system. The correlation between AIP and the grade of CCC was assessed in the study.

Results: Patients were divided into two groups based on the grade of CCC. Those with Rentrop 0 and 1 were considered to have weak, while those with Rentrop 2 and 3 were considered to have good collateral circulation. No significant difference was observed between the two groups. The calculated AIP levels in the good CCC group was found to be 0.68 (± 0.25), and in the weak CCC group, it was (± 0.30). No significant difference was observed in terms of PAI between the two groups.

Conclusion: In conclusion, a significant difference in terms of AIP and coronary collateral development was not found in this study. However, this may be attributed to a low sample size and the high level of statin usage.

	Study group (n=196)
Age	58.19 (±9.64)
Gender [(Male (%)]	160 (81.6%)
Smoker	66 (33.7%)
Hypertension	152 (77.6%)
Diabetes Mellitus	77 (39.3%)
Prior CAD	122 (62.3%)
Statin	170 (86.7%)

Table 1 : Demographics and clinical characteristics study subjects:

Characteristics	Poor CCC Group	Good CCC Group	P value
Age	57.56 (±10.90)	58.85 (±8.15)	0.35
Gender [Male (%)]	77 (77.8%)	83 (85.6%)	0.15
Smoker	38 (38.4%)	28 (28.9%)	0.15
Diabetes Mellitus	36 (36.4%)	41 (42.3%)	0.39
Hypertension	77 (77.8%)	75 (77.3%)	0.93
TC	185 (134-232)	183 (145-215)	0.89
TG	190 (134-277)	189 (124-267)	0.92
HDL-C	39.16 (±9.57)	39.96 (±10.22)	0.57
LDL-C	103.89 (±47.44)	108.79 (±41.74)	0.44
AIP	0.68 (± 0.25)	0.68 (±0.30)	0.98

CCC: Coronary collateral circulation, TC: Total cholestrol

Table: 2: Demographics and clinical characteristics of groups with poor and good CCC

Keyword: *coronary artery disease, chronic total occlusion, hyperlipidemia*

ID: 72

Topic:

Cardiology > Hypertension and antihypertensive therapy

Presentation Type:

Oral Presentation

The Effect of Ramadan Intermittent Fasting on Dipper and Non-dipper Blood Pressure Patterns in youngest-old patients with coronary artery disease: A prospective cohort study.

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Background: Divergent findings regarding the impact of Ramadan intermittent fasting on patients' blood pressure have been documented. This study aimed to evaluate the effects of Ramadan intermittent fasting on-dipping blood pressure profile (as a measure of cardiac stress) in the youngest-old (≥70 years of age) patients with coronary artery disease (with a history of percutaneous coronary intervention or coronary artery bypass graft surgery).

Methods: In this prospective cohort study, the blood pressure was determined by 24-hour ambulatory Holter monitoring at Ramadan fasting in the middle of Ramadan and the first month after Ramadan, and the blood pressures were compared. Blood pressure was assessed during the day and night-time of each subsequent day of observation.

Results: This research encompassed a cohort of 34 patients (74.5 (72.0-79.3) years, 25 (73.5%) males). 13 (38.2%) of the patients had diabetes, and 13 (38.2%) had dyslipidemia. Fasting exerted no discernible impact on standard laboratory assays (glucose, AST, ALT, creatinine, whole blood count) or lipid profile parameters. The findings of the blood pressure holter record of patients are shown in Table 1. The average 24-hour ambulatory blood pressure in the whole group was 96,5 (87,8-101,3) mmHg during Ramadan and 95,5 (86,3-101,3)mmHg after Ramadan (p=0.17). No significant differences were found in systolic and diastolic blood pressure after Ramadan fasting (respectively p=0.68, p=0.56). The average heart rate parameters only increased at night-time (p <0.001). Daytime and night-time mean values of systolic and diastolic blood pressure and mean heart rate values did not differ between periods, regardless of age or gender.

According to the evaluation of the Holter records of all-day blood pressure, fasting did not affect dipper and non-dipper patterns.

Conclusions: Intermittent fasting during Ramadan does not affect dipper and non-dipper blood pressure patterns.

Table 1. Comparison of 24-hour ambulatory blood pressure Holter findings and dipper and non-dipper patterns analysis during and after Ramadan fasting.

	Over 24-hours			Daytime (06:00-22:00 hours)			Night-time (22:00-06:00 hours)		
	During Ramadan	After Ramadan	*P value	During Ramadan	After Ramadan	†P value	During Ramadan	After Ramadan	¥P value
Average heart rate (bpm)	66,0 (58,8-74,0)	63,5 (59,5-71,3)	0,66	66,0 (58,0-74,3)	65,0 (60,5-73,3)	0,74	62,5 (56,8-72,0)	62,0 (55,8-68,0)	<0,001
Systolic average blood pressure (mmHg)	116,5 (110,5-133,3)	125,0 (114,3-131,0)	0,68	126,5 (113,5-135,3)	126,0 (114,8-133,3)	0,35	116,5 (103,8-122,5)	121,0 (105,8-126,5)	0,36
Diastolic average blood pressure (mmHg)	71,0 (67,5-77,3)	71,0 (64,8-76,0)	0,56	73,5 (68,0-79,5)	73,0 (66,0-77,5)	0,16	65,5 (61,0-70,3)	66,0 (61,0-75,0)	0,40
Average blood pressure (mmHg)	96,5 (87,8-101,3)	95,5 (86,3-101,3)	0,17	98,5 (90,3-105,0)	96,5 (88,0-102,3)	0,05	89,5 (81,0-94,3)	89,5 (79,5-96,5)	0,73
Nondipper, n (%)	24 (70,6)	28 (82,4)	0,34						

Values are presented as median (25–75th percentiles).

*P value compares values during Ramadan fasting vs. after Ramadan.

†Statistically different compared to the daytime period of the same day.

¥Statistically different to the night period of the same day.

BP; blood pressure, Bpm; beats per minute.

ID: 106

Topic:

Cardiology > Treatment of hyperlipidemia

Presentation Type:

Oral Presentation

Lipid Profile in Patients with Premature Myocardial Infarction. HDL, LDL or Cholesterol Ratios? Which is More Important?

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Background: The incidence of myocardial infarction at young ages is increasing. Although the rate of acute coronary syndrome is gradually decreasing in the elderly population, no significant decrease has been detected in young patients. LDL levels have been identified as a classic risk factor for cardiovascular disease in cross-sectional studies. However, new tools are needed to evaluate the young population at risk. The aim of our study was to examine the lipid profiles in patients with myocardial infarction at an early age.

Method: Fifty-six patients below 46 years (mean age: 40.4 ± 5 years, 45 (80.4%) male) who recovered from myocardial infarction were consecutively included in the study. Twenty-eight age-sex-matched subjects were included as a control group.

Results: The mean LDL levels and mean total cholesterol (TC) levels were similar in patients and control group. The mean HDL levels were significantly lower whereas triglyceride levels (TG) were significantly higher in the patient group. LDL/HDL ratio was 3.38 ± 1.17 and 2.28 ± 0.79 ($p<0.001$), TG/LDL ratio was 1.76 ± 1.27 and 1.25 ± 0.96 ($p=0.002$), TG/HDL ratio was 5.65 ± 4.88 and 2.79 ± 2.17 ($p<0.001$), TC/HDL ratio was 5.12 ± 1.60 and 3.77 ± 0.98 ($p<0.001$) in the patient and control groups, respectively.

Conclusions: The results of this study may confirm the relationship between high-density lipoprotein, triglyceride, and premature myocardial infarction. The decisive role of LDL, one of the main parameters used in classical cardiovascular risk calculation, in premature myocardial infarction is controversial. Instead, creating risk models that take these lipid ratios more into consideration may be considered.

Table 1: The general characteristics and laboratory parameters of the patients and controls

	Patient Group (n=56)	**Control Group (n=28)**	**P**
Age (years)	40.4 ± 5	39.9 ± 3.3	0.139
Male sex (n – %)	45 (80.4%)	20 (71.4%)	0.412
Body mass index (kg/m^2)	28.7 ± 5.3	27.3 ± 3.9	0.170
Coronary artery disease (n – %)	9 (16.1 %)	0	**0.026**
Hypertension (n – %)	9 (16.1%)	2 (7.1%)	0.322
Dyslipidemia (n – %)	9 (16.1%)	0	**0.026**
Diabetes mellitus (n – %)	10 (17.9 %)	0	**0.027**
Smoking (n – %)	15 (26.7 %)	10 (35.7%)	0.456
Family history (n – %)	5 (8.9 %)	4 (14.3 %)	0.478
Anterior STEMI (n – %)	27 (48.2%)		
Inferior STEMI (n – %)	13 (23.2%)		
NSTEMI/USAP (n – %)	16 (28.6%)		
Creatinine (mg/dL)	0.82 ± 0.16	0.76 ± 0.1	0.079
LDL cholesterol(mg/dL)	114.2 ± 37.3	112 ± 31.2	0.788
HDL cholesterol (mg/dL)	35.7 ± 10.9	51.8 ± 12.4	**<0.001**
Total cholesterol (mg/dL)	174.1 ± 47.5	185.5 ± 25.9	0.241
Triglyceride (mg/dL)	183.1 ± 140.3	126.5 ± 68.7	**0.002**
LDL/HDL	3.38 ± 1.17	2.28 ± 0.79	**<0.001**
TG/LDL	1.76 ± 1.27	1.25 ± 0.96	**0.002**
TG/HDL	5.65 ± 4.88	2.79 ± 2.17	**<0.001**
TC/HDL	5.12 ± 1.60	3.77 ± 0.98	**<0.001**

STEMI: ST-segment elevation myocardial infarction, NSTEMI: Non-ST segment elevation myocardial infarction, USAP: unstable angına pectoris; LDL: Low-density lipoprotein; HDL: High-density lipoprotein; TG: Triglyceride; TC: Total cholesterol;

ID: 111

Topic:

Cardiology > Percutaneous coronary interventions

Presentation Type:

Oral Presentation

Stress hyperglycemia ratio and No-reflow in STEMI

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Background: Stress hyperglycemia is strongly associated with poor clinical outcomes in patients with acute coronary syndrome (ACS). Stress hyperglycemia ratio (SHR), a novel biomarker of stres hyperglycemia. SHR was proved to be a reliable predictor of adverse events in patients with ACS. Studies regarding the relationship between SHR and no-reflow in STEMI are limited. The purpose of this study is investigate the relation between SHR and no-reflow in patients with STEMI.

Methods: A total of 106 patients who were admitted to the cardiology intensive care unit with the diagnosis of STEMI and underwent primary percutaneous coronary intervention were included in this retrospective study. Patients' demographic, clinical, and laboratory parameters were recorded. Patients were divided into two groups with according to no-reflow after primary percutaneous coronary intervention (Group 1: STEMI patients have not no-reflow, Group 2: STEMI patients have no-reflow). Laboratory parameters were calculated from blood samples taken following hospital admission. SHR was calculated by the following formula: SHR = admission glucose (mg/dL) / (1.59 * HbA1c [%] - 2.59). No-reflow was evaluated with analysis of coronary angiographies.

Results: 52 patients were male and 54 patients were female. The average age of the patients were 65.07±15.57. In our study, 54.7 % of patients had hypertension, 28.3% of patients had diabetes mellitus, 33.9% of patients had hyperlipidemia. No-reflow was found to be statistically significantly higher in older age, those with diabetes, smokers, and patients with hyperlipidemia (Table 1). In patients with no-reflow, blood glucose, HDL and SHR levels were significantly higher during admission to hospitalization, while albumin, potassium, total cholesterol, LDL cholesterol and triglyceride levels were significantly lower during admission to hospitalization (Table 2).

Conclusion: In this study, we found that SHR at the admission to hospital was related with development of no-reflow in STEMI patients.

Table 1: Demographic and clinical variables of patients

Variable	Group-1 patients (n=60)	Group-2 patients (n=46)	p value
Age (year)	61.5 (26-88)	71 (33-86)	0.009
Gender (F/M)	24 / 36	30 / 16	0.012
Hypertension,n,%	36 (60%)	22 (47%)	0.241
Smoking,n,%	12 (20%)	33 (71%)	<0.001
Diabetes Mellitus,n,%	6 (10%)	24 (52%)	0.002
Hyperlipidemia,n,%	6 (10%)	30 (65%)	<0.001
LVEF (%)	50 (25-60)	40 (35-60)	0.069

F:Female, M:Male

Table 2: Laboratuar variables of patients

Variable	Group-1 patients (n=60)	Group-2 patients (n=46)	p value
Glucose (mg/dL)	130 (66-684)	229 (110-705)	<0.001
Creatinine (mg/dL)	0.77 (0.60-1.38)	0.94 (0.53-1.67)	0.358
eGFR (ml/minute/1.73m2)	74.2 (46-102)	81 (39-90)	0.584
Albumin (g/dL)	36 (32-50)	30 (26-38)	<0.001
Calcium (mg/dL)	9.4 (7.8-9.8)	9.2 (8.4-9.8)	0.082
Sodium (mmol/L)	138 (126-142)	138 (134-145)	0.259
Potassium (mmol/L)	4.3 (3.8-5.2)	3.7 (3.2-4.5)	<0.001
Total cholesterol (mg/dL)	190.5 (139-364)	143 (93-206)	<0.001
LDL cholesterol (mg/dL)	111.5 (86-271)	77 (50-122)	<0.001
HDL cholesterol (mg/dL)	41.3 (20-53.3)	46.2 (26.5-66.4)	0.020
Triglyceride (mg/dL)	233 (38-427)	67 (42-105)	0.004
HbA1c (%)	6 (5.3-11.20)	7.2 (5.5-12)	0.566
Troponin (ng/mL)	349 (3-2540)	146 (17-1945)	0.464
SHR	574.57 (347.41-2040.81)	1308.08 (585.59-3152.13)	<0.001

SHR: Stress hyperglycemia ratio

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Keyword: *No-reflow, Stress hyperglycemia, STEMI*

ID: 114

Topic:

Cardiology > Electrocardiography and non-invasive electrocardiology

Presentation Type:

Oral Presentation

EVALUATION OF CARDIO ELECTROPHYSIOLOGIC BALANCE INDEX AS A PREDICTIVE MARKER OF VENTRICULAR FIBRILLATION IN MYOCARDIAL INFARCTION WITH ST SEGMENT ELEVATION

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Background: Index of cardio electrophysiologic balance (iCEB) obtained from ECG (electrocardiogram) can provide an estimation about ventricular fibrillation (VF) in various clinical conditions. This paper evaluates iCEB's value in estimating VF development among ST segment elevation myocardial infarction (STEMI) patients.

Methods: 173 patients with ST elevation myocardial infarction, including 41 patients with and 132 without ventricular fibrillation in acute setting were scanned retrospectively. After assessment of demographic variables and previous medical history, acute presentation ECGs were evaluated for iCEB. The groups were compared by their medical features, and iCEB results.

Results: 39 out of 173 patients (22.5%) were female. Median age was 58 and 54 for VF (-) and (+) groups respectively. VF (+) group had more chronic renal disease (9.8% vs. 2.3%, p=0.034). Angiography results showed CX was less likely identified as the culprit lesion in VF (+) group (2.4% vs. 16.7%, p=0.040). Mean iCEB measurements were found similar between groups (4.56±0.79 vs. 4.60±0.90, p=0.749). Additionally, no significant differences were observed in terms of QRS dispersion, QT and R-R intervals and T wave peak-end time (T_{p-e}).

Conclusion: In this study, we observed that VF development in STEMI is not linked to iCEB measurements, therefore cannot be used as a predictor in emergency setting. Nevertheless, this study has established a descriptive iCEB base for the STEMI population, therefore may make way to comparisons among specific populations in the future.

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Keyword: *Cardio electrophysiologic balance, ventricular fibrillation*

ID: 146

Topic:

Cardiology > Electrocardiography and non-invasive electrocardiology

Presentation Type:

Oral Presentation

QRS score predicts ischemic heart disease in patients undergoing coronary angiography

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Background

Coronary angiography (CAG) remains the cornerstone diagnostic modality for identifying ischemic heart disease (IHD). However, in contemporary medical practice, there exists a notable propensity for an excessive performing CAG, largely attributed to the inherent limitations in the relative sensitivity and specificity of noninvasive imaging modalities. On the other hand, in patients presenting to cardiology outpatient clinics, conventional repolarization parameters on electrocardiography often fail to reveal ischemic manifestation despite underlying pathology. Therefore, clinicians encounter challenges in accurately identifying IHD. Our aim was to define a QRS score derived from electrocardiographic parameters to predict ischemia in patients undergoing CAG.

Methods

We included 189 consecutive patients undergoing CAG between January 1, 2023, and December 31, 2023. Patients were divided into two groups as follows: patients with IHD and patients without IHD, based on CAG findings. Each baseline electrocardiogram for patients was evaluated by two independent cardiologists. The presence of complete or incomplete RBBB, complete or incomplete LBBB, fragmented QRS, ST segment depression, and T wave inversion on the electrocardiogram were excluded. Additionally, we excluded patients presenting with acute coronary syndrome. Using the Chi-square test, the student-t test, and the Mann Whitney U test, we compared the differences in baseline characteristics and electrocardiographic variables between the two groups. Binary logistic regression analysis was performed to identify the independent predictors for IHD.

Results

Patients with IHD were older (66 [61-70]) vs. 61[55-68]) and exhibited a higher prevalence of male gender, hypertension (74.3% vs. 57.1%), diabetes mellitus (51.4% vs 32.8%), and

hyperlipidemia (55.7% vs. 30.3%) compared to those without IHD (Table 1). Higher levels of creatinine (0.90 [0.80-1.00] vs. 0.80 [0.60-0.90]) and triglyceride (188.00 [131.50-253.50] vs. 165.00 [109.50-224.50]) were observed in patients with IHD, along with a lower left ventricular ejection fraction compared to those without IHD (58.71±4.14 vs. 59.70±2.37) (Table 1). Evaluation of electrocardiographic variables revealed a lower QRS score (6.00 [3.00-11.00] vs. 12.50 [6.00-16.00]) and QRS axis (8.50 ([-13.00]-[47.25]) vs. 32.00 [11.00-53.00]) in patients with IHD in comparison to patients without IHD (Table 2). Multivariate binary logistic regression analysis identified age, sex, hyperlipidemia, and QRS score as independent predictors for IHD (Table 3).

Conclusions

QRS score can be considered as an electrocardiographic marker of ischemia and independent predictor of IHD.

Table 1: Baseline characteristics of the study population.

	Patients with ischemic heart disease (n=70)	Patients without ischemic heart disease (n=110)	p
Age (years)	66 (61-70)	61 (55-68)	0.001
Sex (female/male)	19/51	33/60	0.002
Comorbidities			
Hypertension (n,%)	52 (74.3)	68 (57.1)	0.018
Diabetes mellitus (n,%)	36 (51.4)	39 (32.8)	0.011
Hyperlipidemia (%)	39 (55.7)	36 (30.3)	0.001
CKD (n,%)	11 (15.7)	11 (9.2)	0.180
Medications			
Beta blockers (n,%)	39 (55.7)	39 (32.8)	0.002
RASi (n,%)	36 (51.4)	52 (43.7)	0.304
MRA (n,%)	3 (4.3)	4 (3.4)	0.745
SGLT2i (n,%)	9 (12.9)	11 (9.2)	0.435
Ivabradine (n,%)	5 (7.1)	1 (0.8)	0.017
Laboratory variables			
BUN (mg/dL)	37.50 (28.75-44.00)	34.00 (28.00-40.00)	0.079
Cr (mg/dL)	0.90 (0.80-1.00)	0.80 (0.60-0.90)	0.001
eGFR (mL/min/1.73m²)	87.00 (73.00-97.25)	96.00 (76.00-107.00)	0.144
TC (mg/dL)	181.00 (146.50-215.50)	185.00 (162.75-213.25)	0.510
LDL-C (mg/dL)	100.00 (74.00-118.50)	101.00 (79.00-122.00)	0.719
HDL-C (mg/dL)	42.00 (37.00-47.00)	47.00 (38.00-56.50)	0.002
Triglyceride (mg/dL)	188.00 (131.50-253.50)	165.00 (109.50-224.50)	0.040
Hemoglobin (g/dL)	13.40 (12.00-14.50)	13.30 (12.05-14.30)	0.472
Hematocrit (%)	40.30 (37.20-43.42)	40.30 (37.50-43.00)	0.898
WBC (10³/L)	7.70 (6.00-9.92)	7.00 (5.10-8.30)	0.069
Platelets (10³/L)	263.50 (193.00-272.00)	255.00 (211.00-296.00)	0.072
LVEF (%)	58.71±4.14	59.70±2.37	0.038

CKD, chronic kidney disease; RASi, renin-angiotensin-aldosterone system inhibitors; MRA, mineralocorticoid receptor antagonists; SGLT2i, sodium-glucose cotransporter 2 inhibitors; BUN, blood urea nitrogen; Cr, creatinine; eGFR, estimated glomerular filtration rate; TC, total cholesterol; LDL-C, low density lipoprotein cholesterol; HDL-C, high density lipoprotein cholesterol; WBC, white blood cell; LVEF, left ventricular ejection fraction.

Table 2: Electrocardiographic variables of the study population.

	Patients with ischemic heart disease (n=70)	Patients without ischemic heart disease (n=110)	p
Heart rate (bpm)	71 (60-82)	69 (62-76)	0.651
QRS duration (msec)	84.00 (76.00-92.00)	84.00 (78.00-88.00)	0.243
QRS score (mm)	6.00 (3.00-11.00)	12.50 (6.00-16.00)	0.001
QT (msec)	395.00 (371.50-412.00)	390.00 (372.00-418.00)	0.660
QTc (msec)	421.50 (407.00-442.00)	418.00 (406.00-438.00)	0.572
PR duration (msec)	160.00 (140.00-180.00)	152.00 (138.00-167.00)	0.083
P duration (msec)	98.00 (80.00-108.00)	94.00 (82.00-107.00)	0.372
RR duration (msec)	846.00 (731.00-883.00)	882.00 (788.00-964.00)	0.440
PP duration (msec)	845.00 (737.75-887.25)	882.00 (789.00-967.00)	0.333
P axis (°)	61.00 (46.00-72.00)	51.50 (39.00-70.25)	0.083
QRS axis (°)	8.50 ([-13.00]-[47.25])	32.00 (11.00-53.00)	0.003
T axis (°)	51.00 (33.50-71.00)	46.00 (31.00-61.00)	0.224

Table 3: Independent predictors for ischemic heart disease.

	OR	95%CI	p
Age	1.072	1.024-1.123	0.003
Sex	4.557	2.083-9.969	0.001
Hyperlipidemia	2.486	1.229-5.029	0.011
QRS score	0.921	0.877-0.967	0.001

The model created the following variables to predict ischemic heart disease by binary logistic regression analysis: age, sex, hypertension, diabetes mellitus, hyperlipidemia, left ventricular ejection fraction, QRS score, and QRS axis.

Oral Presentation Session

Multifaceted Features Of Heart Failure

Date: 09.06.2024 Time: 08:40-10:00 Hall: 1

ID: 82

Topic:

Cardiology > Cardiac imaging – Echocardiography

Presentation Type:

Oral Presentation

The Right Heart Function Is Impaired In Patients With HFpEF

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Heart failure with preserved ejection fraction (HFpEF) is an emerging health concern of growing significance. HFpEF is primarily due to several factors, including the aging population and the increasing prevalence of risk factors such as hypertension, diabetes mellitus, and obesity. HFpEF is often associated with altered right ventricular and atrial function, and these changes are associated with poor clinical outcomes. (1) This study aimed to investigate the importance and changes in the parameters used to evaluate the right atrium (RA) and right ventricle (RV) in HFpEF patients.

The study included patients admitted to the cardiology clinic with decompensated heart failure between January 2020-2022 who had LVEF of 50% or more. TTE was obtained for each patient upon admission for decompensated heart failure and the healthy control group. The right heart was evaluated following the recommendations of the ASE and EACVI, and specific apical RV and RA images were obtained for speckle-tracking analysis.

In this study, 60 patients with HFpEF and 60 individuals in the control group, with an average age of 62, were enrolled. Regarding RV dimensions, no significant differences were observed between the two groups. However, HFpEF patients exhibited significantly larger RV diastolic areas than controls. While fractional area change (FAC) did not significantly differ between groups, tricuspid annular plane systolic excursion (TAPSE) and S velocity were lower in the HFpEF group.PWD-MPI and TDI-MPI values were statistically significantly higher in the HFpEF group. Moreover, HFpEF patients exhibited lower E', A', and S' values than controls. Evaluation of isovolumic acceleration (IVA), a measure of systolic function using tissue Doppler examination, revealed significantly lower values in the HFpEF group. Strain analysis revealed significant differences in RV and RA strain parameters between patients with HFpEF and the control group. Specifically, HFpEF patients exhibited lower RV global longitudinal strain (RV-GLS) with a mean value of -17.9 ± 3.9% and RV free wall longitudinal strain (RV-FWLS) with a

mean value of -19.2 ± 4.5% (p = 0.003). Additionally, RA reservoir strain was significantly reduced in HFpEF patients, with a mean value of 34.6 ± 9.8% (p = 0.01). Although RA conduit strain showed a trend towards significance, the differences were not statistically significant.

In conclusion, these findings underline the extensive changes in right heart mechanics and function observed in HFpEF patients, highlighting the potential role of strain analysis.

Table 1. Echocardiographic measurements of the right ventricle and right atrium

Variables	HFpEF (n=60)	Control (n=60)	P
RV basal diameter (cm)	4,3 ± 0,9	4,1± 0,8	0,20
RV mid diameter (cm)	3,2 ± 0,6	3.1 ± 0,5	0,32
RV longitudinal diameter (cm)	6,9 ± 1	6,7 ± 0,9	0,25
RA longitudinal axis (cm)	4,9 ± 0,8	4,6 ± 0,9	0,056
RA short axis (cm)	4 ± 0,7	3,8 ± 0,7	0,12
RA end-systolic area (cm2)	15,8 ± 4,0	13,6 ± 3,8	**0,002**
RV diastolic area (cm2)	16,7 ± 4,0	14,1 ± 3,1	**0,001**
RV systolic area (cm2)	10,2 ± 3,2	9,2 ± 3,1	0,08
RV FAC (%)	38,3 ± 9,2	41,2 ± 9,8	0,09
TAPSE (cm)	15,8 ± 3,8	18,1 ± 4,2	**0,002**
E (m/s)	1,1 ± 0,3	0,8 ± 0,2	**0,001**
A (m/s)	0,6 ± 0,2	0,5 ± 0,2	**0,007**
E/A	1,8 ± 0,5	1,6 ± 0,4	**0,02**
PWD-MPI	0,41 ± 0,13	0,36 ± 0,14	**0,04**
Deceleration time (ms)	229,5 ± 76,8	251 ± 91,4	0,16
E' (m/s)	10 ± 4	12 ± 4,2	**0,007**
A' (m/s)	13 ± 4,9	15 ± 5,0	**0,031**
E'/A'	0,8 ± 0,3	0,7 ± 0,4	0,12
S'(m/s)	9 ± 3	11 ± 4	**0,002**
E/E'	11,1 ± 2,9	8,5 ± 2,4	**<0,001**
TDI-MPI	0,43 ± 0,11	0,36 ± 0,2	**0,019**
IVA (m/s2)	2,9 ± 0,9	3,4 ± 1,4	**0,022**
RV-GLS (%)	-17,9 ± 3,9	-19,7 ± 4,1	**0,015**

RV-FWLS (%)	-19,2 ± 4,5	-21,8 ± 5,4	**0,003**
RA reservoir strain (%)	34,6 ± 9,8	39,5 ± 10,9	**0,01**
RA contractile strain (%)	-13,6 ± 5,8	-16,5 ± 6,2	**0,009**
RA conduit strain (%)	20,2 ± 8,1	22,9 ± 8,5	0,07
FAC: fractional area change, IVA: isovolumic contraction acceleration, MPI: myocardial performance index, PWD: pulsed wave Doppler RA: right atrium, RV: right ventricle, RV-FWLS: right ventricular free wall longitudinal strain, RV-GLS: right ventricular global longitudinal strain, TAPSE: tricuspid annular plane systolic excursion, TDI tissue Doppler imaging			

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Keyword: *HFpEF, speckle tracking echocardiography, right heart*

ID: 86

Topic:

Cardiology > Chronic heart failure

Presentation Type:

Oral Presentation

Adjunctive Papillary Muscle Approximation Improves The Durability Of Mitral Valve Repair

Prof. Vladlen Bazylev , MD Dmitriy Tungusov , MD Artur Mikulyak*
Federal Center For Cardiovascular Surgery

BACKGROUND. The pathophysiology of ischemic mitral regurgitation is complex and results from an imbalance between closing and tethering forces acting on the mitral valve (MV). Enlargement of the left ventricular (LV) and displacement of papillary muscles in the apical and lateral directions increase the tethering forces. Left ventricular and papillary muscle dyssynchrony and reduced myocardial contractility curtail the closing forces, thus leading to impaired leaflet coaptation and appearance of MR. Therefore, treatment of mitral insufficiency requires an integrated approach, affecting all aspects of the pathogenesis of MR recurrence. This study focused on the assessment of mid-term results of papillary muscles approximation and comparison of the obtained results with those of isolated mitral annuloplasty in patients with reduced ejection fraction (EF).

METHODS. Two hundred and forty-four patients with reduced ejection fraction (less than 30%) and mitral regurgitation took part in this retrospective single center study. The patients were randomized to 2 groups: group 1 - 107 patients with ischemic cardiomyopathy and mitral insufficiency who underwent to CABG and mitral annuloplasty. Group 2 - 137 patients with ischemic cardiomyopathy and mitral insufficiency who underwent to CABG, mitral annuloplasty and approximation of the papillary muscles. According to the clinical and demographic characteristics, there were no differences between patients.

RESULTS. In the early postoperative period, 7 patients died in the first group and 4 in the second one. The observation period was up to 90 months. Twenty-six patients in the first group and 25 patients in the second group died of heart failure progression during follow-up. The Kaplan-Mayer analysis was carried out, there were no statistically significant differences between the groups (log-rack test = 0.072). During period of observation mitral regurgitation was revealed in 25 patients in the first group and 13 in the second. The Kaplan-Mayer analysis showed statistically significant differences between the groups (log-rack test = 0.005).

CONCLUSIONS. Adjunctive papillary muscle approximation performed at the time of mitral annuloplasty improves the durability of mitral valve repair.

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Christos G. Mihos, Evin Yucel, Orlando Santana, The role of papillary muscle approximation in mitral valve repair for the treatment of secondary mitral regurgitation, European Journal of Cardio-Thoracic Surgery, Volume 51, Issue 6, June 2017, Pages 1023–1030, https://doi.org/10.1093/ejcts/ezw384

Keyword: *papillary muscle approximation, mitral annuloplasty, ischemic mitral regurgitation*

ID: 87

Topic:

Cardiology > Other

Presentation Type:

Oral Presentation

Relationship Between Aortic Stiffness And Exercise Capacity In Heart Failure With Reduced Ejection Fraction Patients

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Background : In heart failure with reduced ejection fraction (HFrEF) patients, compliance and consequently afterload have increased. Aortic stiffness is observed to increase in them and aortic stiffness is associated with morbidity and mortality. It is aimed to evaluate the relationship between the treadmill exercise test parameters and the elastic properties of ascending aorta measured by 2D M-mode echocardiography and its relationship with functional capacity in NYHA class 1 and 2 patients with HFrEF.

Methods: 42 compensated outpatient patients with HFrEF, aged 18-70 years, with sinus rhythm and adequate echocardiographic image quality, who could perform exercise ECG testing were included. Echocardiographic parameters and aortic measurements were recorded with two-dimensional M-mode echocardiography before the exercise test, datas were recorded in rest and peak seperately. Patients were taken to echocardiography laboratory after exercise test and the measurements were repeated.

Results: All patients were divided into two groups as NHYA class 1 and 2. No statistically significant difference was observed in blood parameters and demographic data between the groups. The mean exercise capacity (MET score) was higher in NHYA class 1 and statistically significant ($p<0,001$). When echocardiographic parameters were evaluated before and after excercise; there were statistically significant difference in aortic stiffness, aortic strain, aortic distensibility and Pearson elastic modulus ($p<0.001$, $p<0.001$, $p<0.001$, $p<0.001$,respectively). Before and after-exercise aortic stiffness and Pearson elastic modulus parameters were higher in NHYA 2 class patients than NHYA 1. (Figure 1)

Conclusions: Aortic stiffness is known to be an important cardiovascular risk factor. In this study, post-exercise aortic stiffness in patients with HFrEF was found to be high in both groups. The exercise capacity is lower in NHYA class 2. The increase in aortic stiffness after exercise was higher in NHYA class 2 than in class 1 and was found to be statistically significant ($p=0,002$). Therefore, the increase in aortic stiffness can be considered as an indicator of decreased exercise capacity.

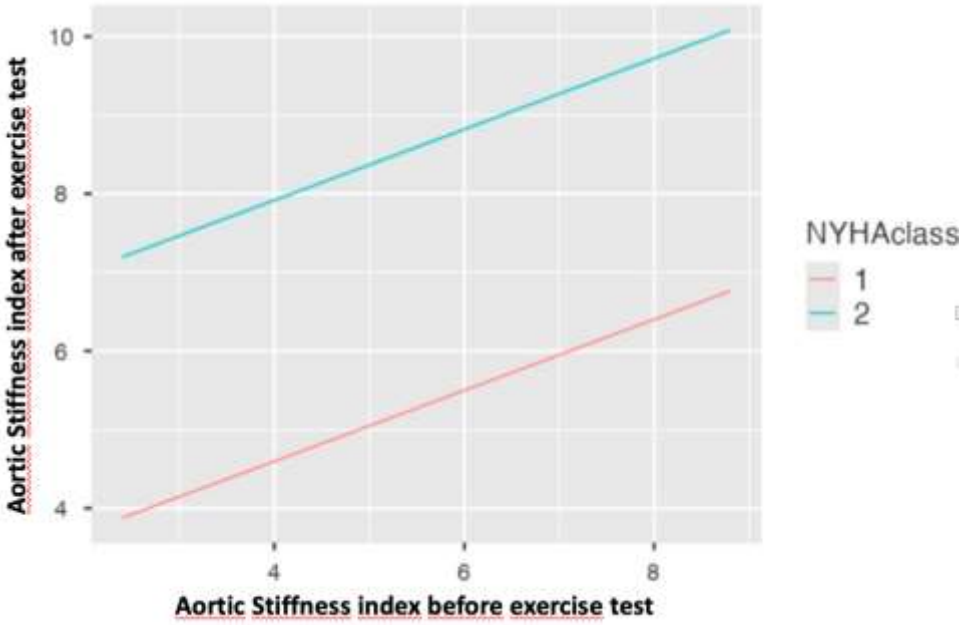

Figure 1: Before and after-exercise test aortic stiffness index NHYA class 1 and 2.

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Keyword: *Aortic stiffness, Heart failure with reduced ejection fraction, Exercise ECG test, Aortic Distensibility, Functional capacity*

ID: 90

Topic:

Cardiology > Preventive cardiology

Presentation Type:

Oral Presentation

DEFINITION DIFFERENCES BETWEEN CLINICIANS IN DIAGNOSING ASCENDING AORTIC ANEURYSM and DILATION

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Background: The frequency of ascending aortic diseases has increased in recent years. The prevalence of thoracic aortic aneurysm varies between 3.5 and 7.6 per 100,000 people. However, physicians' definitions of aneurysm or dilation differ in clinical practice. As it is known, aortic diseases are significant in terms of mortality. Among these, ascending aortic diseases have the most severe consequences.

Methods: The echocardiography reports of 5 physicians who performed echocardiography in a health institution between January 2023 and July 2023 were retrospectively examined. Threshold values for ascending aortic dilatation were noted for each physician individually. It has been determined how many different approaches there are. The number of patients diagnosed with ascending aortic dilatation or who had been followed up with this diagnosis for a long time was recorded.

Results: Approximately 423 echocardiography reports were examined. It was determined that all physicians diagnosed ascending aortic dilatation or aneurysm according to different values. The records also showed that ascending aortic dilatation and aneurysm were used synonymously.

Conclusion: While intervention threshold values are very clear in current guidelines, aneurysm definitions may change. This situation leads to differences in diagnostic approaches among physicians. More research is needed to determine awareness-raising methods and the prevalence of this definition difference.

ID: 94

Topic:

Cardiology > Cardiac imaging - Cardiac MRI

Presentation Type:

Oral Presentation

Association between Epicardial Fat and Late Gadolinium Enhancement In Patients with Miyocarditis

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Background: Late gadolinium enhancement (LGE) on cardiac magnetic resonance imaging (MRI) has emerged as a valuable tool for assessing myocardial inflammation and fibrosis in myocarditisi patients. Epicardial fat a metabolically active visceral fat depot surrounding the heart, has been implicated in the modulation of cardiac inflammation and fibrosis. This study aims to assess association between epicardial fat thickness and LGE involvement in patients with miyocarditis.

Methods: This single center retrospective study has two groups, including patients with LGE after miyocarditis and without LGE. All patients were evaluated with CMR after at least four weeks active miyocarditis. Patients laboratory values has been noted when patients admitted the hospital.86 patients were retrospectively evaluated and the local ethics association approved the study and the patients were enrolled after informed consent.

Results: Among the parameters examined, age,pro-bnp, platelet count, monocyte, lymphocytes, peak CRP, peak troponin, left ventricle end diastolic diameter, left ventricle end systolic diameter, and rv epicardial fat are higher in the LGE positive group. Univariate logistic regression analyses found lymphocytes (p=0.007), peak CRP (p=0.009), peak troponin value (p=0,001), and epicardial fat (p=0.001) are significant in LGE positive group. Multivariate regression analyses found the most significant factors that indicate LGE in patients with miyocarditis RV epicardial fat, and peak troponin value.

Conclusions: Myocardial scars after miyocarditis may result in morbiditiy and mortality. Our study has identified significant parameters that could guide the selection of patients for intensive and prolonged therapy, after diagnosis.

Table 1

Variable	LGE(-)	LGE(+)	P value
Age	27,5	30	0,084
Hemoglobine	14,2	14,5	0,187
Creatinine	0,8	0,85	0,235
Sodyum	137,5	138	0,725
Potasium	3,9	4	0,265
WBC	10,72	10,94	0,67
HG	14,15	14,5	0,297
Albumin	44,5	42	0,15
BMI	23,885	26,12	0,08
Pro_Bnp	130	430	0,01
NEU	7,21	7,97	0,37
PLT	230	271	0,02
MONO	0,775	1,12	0,001
LENF	2,315	2,96	0,004
PeakCRP	14,15	93	0,001
Peaktrop	1,285	4,37	0,001
LVEDV	101,5	114	0,029
LVSDV	34,5	48,2	0,014
LVEF	63	59,5	0,064
RVfat	3,31	3,97	0,04

Table 2

	Sig.	Exp(B)	95% C.I.for EXP(B)	
			Lower	Upper
PLT	,022	1,017	1,002	1,032
LENF	,024	,219	,059	,818
PeakCRP	,019	1,015	1,002	1,027
Peaktrop	,001	1,779	1,298	2,438
LVEDV	,543	,965	,858	1,084
LVSDV	,494	1,084	,860	1,367
LVEF	,931	,988	,748	1,304
RVfat	,003	17,165	2,637	111,727
Pro_Bnp	,230	1,001	,999	1,004
Constant	,184	,000		

ID: 125

Topic:

Cardiology > Chronic heart failure

Presentation Type:

Oral Presentation

Influence of sodium-glucose co-transporter 2 inhibitor on NT-proBNP in patients with type 2 diabetes mellitus and heart failure preserved ejection fraction

MD Zilola Korakulova* , Prof. Gulchehra Ataxodjaeva
Tashkent Pediatric Medical Institute

Background: N-terminal pro brain natriuretic peptide (NT-proBNP) is a biomarker and it is used to evaluate the severity of the disease in patients with heart failure. Emerging evidence suggest that sodium-glucose co-transporter 2 (SGLT2) inhibitors may be beneficial in terms of reduction in NT-proBNP in patients with heart failure with reduced ejection fraction (HFrEF). However, there is a scares data of the influence of NT-proBNP in patients with heart failure with preserved ejection fraction (HFpEF). Thus, we aimed at investigate the possible influence of sodium-glucose co-transporter 2 inhibitor (empagliflozin) on NT-proBNP in patients with type 2 diabetes mellitus (T2DM) and HFpEF.

Methods: This is an open label, randomized, trial of empagliflozin in patients with HFpEF was conducted from January 2021 to June 2023 enrolling 160 patients with T2DM and HFpEF (mean age 62.4±12.9 years, male=58%). Patients were divided into 2 groups by 80 and the first group patients were assigned empagliflozin in addition to the standard treatment of the heart failure and T2DM (metformin + sitagliptin). The second group patients were assigned only standard treatment for the heart failure and metformin + sitagliptin for the T2DM. NT-proBNP was measured at baseline and at the 6 months of the treatment along with anthropometric, other laboratory and instrumental data. All statistical analysis were performed using SPSS 26.0 software.

Results: NT-proBNP has been decreased significantly during the follow-up at empagliflozin group than the second group of patients (from 1165.67±145.25 ng/L to 754.97±89.87 ng/L vs. 1125.32±148.55 ng/L to 1023.93±123.43 ng/L, P<0.001). Higher level of NT-proBNP were linierly associated with severity of the course of disease (HR 1.46 [95% CI: 1.23-1.72]) and higher (>8.0%) glycated hemoglobin levels (HR 1.24 [95% CI: 1.09-1.42]). During the treatment glycated hemoglobin has been decreased remarkable in the first group than the second group of patients (from 8.2±2.8 % to 6.1±1.9 % vs. from 8.4±2.9 % to 7.8±2.5 %, P<0,05).

Conclusions: Empagliflozin is safe and improves outcomes irrespective of baseline NT-proBNP concentrations in HFpEF with the greatest absolute benefit likely seen in patients with higher level of glycated hemoglobin and NT-proBNP levels.

Oral Presentation Session

Perspectives In Cardio-Oncology

Date: 09.06.2024 Time: 09:40– 10:30 Hall: 4

ID: 3

Topic:

Cardiology > Cardiac imaging – Echocardiography

Presentation Type:

Oral Presentation

Long-term longitudinal changes of left ventricular mechanical function undergoing anthracyclines and trastuzumab treatment in breast cancer patient after Chemotherapy: case report

MD Begimai Akbalaeva[*] [1] , MD Nurlan Raiimbek uulu[1] , Prof. Talantbek Batyraliev[2] , Prof. igor Pershukov[3]

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[3] Osh State University, Voronej city, Russia

The article discusses two cases of cardiotoxicity (CTox) linked to the undergoing anthracycline and trastuzumab (TTZ) treatment in breast cancer patient after chemotherapy (CTx) given for HER-2 positive breast cancer (BC), emphasizing how age affects the cardiovascular outcomes related to treatment. The first case involes a young female patient who showed resilience to the heart-damaging effects of a CTx regimen that included doxorubicin and TTZ, with only minor clinical changes observed after 6 month of discontinuing chemotherapy courses. Pre- treatment cardiovascular assessments did not reveal any significant health issues, and follow-up evaluations indicated only minor changes in troponin I levels and serum iron concentration, with no significant changes in heart imaging results. The second case details the experience of an older female patient who faced a more severe form of CTox after undergoing the same CTx regimen. Initially, she reported difficulty breathing and had a history of adjuvant CTx for HER-2 positive BC. This patient showed significant increases in natriuretic peptide levels and C-reactive protein, along with a significant decline in the pumping function of the left side of her heart, as shown by heart imaging tests, leading to a diagnosis of toxic cardiomyopathy as a long-term complication.

These cases highlight the critical need for careful heart monitoring in patients receiving CTx for BC, especially when the treatment includes known heart-damaging drugs like doxorubicin and TTZ. The difference in outcomes between the younger and older patients underscores the impact of age on the development and severity of CTx-induced heart toxicity. The findings support the implementation of a detailed heart evaluation protocol before, during and after CTx, tailored to each patient's age to improve treatment outcomes and reduce the

risk of heart complications. This personalized approach is essential for creating effective treatment strategies for BC, considering the need to balance the effectiveness of the therapy against the potential for adverse effects on the heart.

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Keyword: *Cardiotoxicity, Chemotherapy, Breast Cancer, Anthracycline, Trastuzumab, Speckle-Tracking Echocardiography, Global longitudinal strain*

ID: 15

Topic:

Cardiology > Preventive cardiology

Presentation Type:

Oral Presentation

Effect of Cardioprotective Agent Dexrazoxane on Change in Arterial Stiffness in Breast Cancer Patients Treated with Anthracycline-Containing Chemotherapeutic Agents

MD Ömer Kertmen[*] [1] , MD Metin Çoksevim[2]
[1] Amasya University Sabuncuoğlu Şerefeddin Research and Training Hospital
[2] Ondokuz Mayis University Faculty of Medicine

Background:
Dexrazoxane is an iron chelator agent given together with anthracyclines to minimize myocyte damage because of intracellular free radical damage caused by anthracycline-containing chemotherapeutic agents. We aimed to evaluate the cardioprotective effect of dextrazoxane through arterial stiffness parameters in breast cancer patients treated with anthracycline-based chemotherapeutic agents.

Method:

Patients who had received dexrazoxane with anthracycline-based chemotherapeutic agents for breast cancer were evaluated with the Mobil-O-Graph 24h ABPM NG device in terms of vascular stiffness before starting the treatment regimen and one month after the end of the treatment, and were compared with the control group. The control group was randomly selected from patients who had received anthracycline-containing chemotherapeutic agents due to breast cancer and were not given dexrozaxone, with similar age and demographic characteristics as the study group. The parameters compared between groups are: Pulse wave velocity (PWV), augmentation index (AIx), systolic and diastolic blood pressures. In addition, basic echocardiographic evaluation of the participants was performed in accordance with the recommendations of the guidelines for the follow-up and treatment of patients receiving chemotherapy.

Results:

Patients included in the study were examined in terms of demographic characteristics such as age, BMI and baseline laboratory parameters; no differences were detected between the groups. Patients were examined for cancer types, grades and tumor diameter; statistically significant difference was not detected between the groups. The PWV was found to be statistically different between the two groups, being higher in the dextrazoxane group ($p = 0.003$). This difference continues after treatment ($p=0.022$). While PWV increased significantly in the control group ($p<0.001$) an the post-treatment period compared to the pre-treatment period, it tended to decrease in a non-statistically significant manner in the

dextrazoxane group. (7.3 ± 1.7 before treatment vs 7.2 ± 1.6 after treatment, p=0.766). In other parameters measured oscillometrically, no statistically significant difference was detected between the groups or before and after treatment. When echocardiographic parameters were evaluated in the study population, LVEF (p=0.001), LVEDD (p<0.001), LVESD (p<0.001) and LA size (p<0.001) increased significantly in the control group after treatment compared to before treatment. In the dextrazoxane group, only LVEDD increased significantly after treatment compared to measurements before (p<0.001).

Conclusion

While a significant deterioration at pulse wave velocity, which is an early predictor for the development of cardiovascular events, was detected in breast cancer patients treated with anthracycline-containing chemotherapeutic agents, no significant change was detected when dexrazoxane was added to the treatment.

Parameter		**Control Group (n=30)**	**Dextrazoxane Group (n=30)**	**P[2]**
Pulse Wave Velocity (m/sec)	Before Treatment	6,2 ± 0,8	7,3 ± 1,7	**0,003**
	After Treatment	6,5 ± 0,8	7,2 ± 1,6	**0,022**
	P[1]	**<0,001**	0,766	
Augmentation Index (%)	Before Treatment	28,8 ± 9,1	31,1 ± 7,5	0,282
	After Treatment	29,7 ± 7,9	31 ± 9,8	0,575
	P[1]	0,526	0,766	
Systolic Blood Pressure (mmHg)	Before Treatment	121,1 ± 14,9	124,2 ± 12,6	0,387
	After Treatment	125,3 ± 16,8	122,6 ± 15,3	0,523
	P[1]	0,043	0,975	
Diastolic Blood Pressure (mmHg)	Before Treatment	77,5 ± 11,8	81,2 ± 8,5	0,160
	After Treatment	79,6 ± 13,7	81,5 ± 10,3	0,975
	P[1]	0,290	0,484	
Mean Arterial Pressure (mmHg)	Before Treatment	97,5 ± 12,7	100,6 ± 9,8	0,305
	After Treatment	100,5 ± 14,6	99,5 ± 12,6	0,785
	P[1]	0,115	0,062	
Central Systolic Blood Pressure (mmHg)	Before Treatment	111,2 ± 12,5	115,8 ± 13,8	0,182
	After Treatment	114,5 ± 16,2	114,3 ± 16,6	0,956
	P[1]	0,105	0,595	

Central Diastolic Blood Pressure (mmHg)	Before Treatment	79 ± 11,9	82 ± 8,1	0,260
	After Treatment	81,3 ± 13,8	81,4 ± 10,1	0,975
	P[1]	0,262	0,527	

References:

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Keyword: *chemotherapy, anthracycline, dexrazoxane, arterial stiffness*

ID: 119

Topic:

Cardiology > Cardiac imaging – Echocardiography

Presentation Type:

Oral Presentation

Assessment of Subclinical Cardiac Dysfunction in Breast Cancer Therapy using Speckle-Tracking Echocardiography

MD Begimai Akbalaeva[*] [1] , MD Nurlan Raiimbek uulu[1] , Assoc. Prof. Aigul Momunova[1] , Prof. Talantbek Batyraliev[2] , Prof. Igor Pershukov[1]

[1] Osh State University

[2] Salymbek University

BACKGROUND. Cancer therapy-related cardiac dysfunction (CTRCD) is a new term that encompasses a wide range of possible manifestations and etiological associations with a wide range of different cancer treatments. Datection of early subclinical cardiac dysfunction have a great clinical importance.

Objectives. We decided to evaluate subclinical CTRCD in women with HERS2-positive locally advanced or metastatic breast cancer undergoing a course of anthracyclines (Doxorubicin), Docetaxel and Trastuzumab. To achieve this goal, we prospectively enrolled women aged 18 to 75 years with an established diagnosis of HER2-positive locally advanced or metastatic breast cancer across three centers.

MATERIAL AND METHODS. 122 women with HER2-positive locally advanced or metastatic breast cancer undergoing a course of anthracyclines (Doxotubicin), Docetaxel and Trastuzumab were observed using speckle-tracking echocardiography. According to the treatment protocol, we formed 3 comparison blocks: (1st-Chemotherapy (CT): Doxorubicin+Cyclophosphamide, 2nd- ChemoTargeted Therapy (CTT): Docetaxel+Trastuzumab and 3rd-Targeted Therapy (TT): Trastuzumab).

RESULTS. The frequency detection of subclinical CTRCD was high and exceeded 20-30% in all comparison blocks after the 3rd course of CT, CTT and TT. The frequency of CTRCD increased significantly from 1 to 2, from 2 to 3, from 3 to 4 courses in each block. Intergroup comparisons turned out to be significant only after the 4th CT course and the 4th TT course (Chi-square with Yates correction p=0.0394); all other comparisons between treatment groups in terms of the frequencies of CTRCD were not significant.

Discussion. Given the growing number of patients with breast cancer, such frequent monitoring of cardiac function is likely to improve the quality of treatment provided by oncologists and, speculatively, it will have a positive impact on overall survival in breast cancer.

CONCLUSION. It is likely that a revision of the criteria for the frequency echocardiographic monitoring of cardiac dysfunction in patients with cancer, in particular with HER2-positive breast cancer, is required.

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Keyword: *Speckle-Tracking Echocardiography, Global Longitudinal Strain of Left Ventricle, Cancer Therapy-Related Cardiac Dysfunction*

ID: 148

Topic:

Cardiology > Chronic heart failure

Presentation Type:

Oral Presentation

EARLY DIAGNOSIS OF HEART FAILURE IN PATIENTS THAT DEVELOPED AS A RESULT OF ANTHRACYCLİNE CONTAİNİNG COMBINED CHEMOTHERAPY

MD Sara Bayramzade , MD Mirali Majidov , Prof. Muradali Bakhshiyev*
Azerbaijan Medical University

Background: Since the 1990s, there has been a steady decrease in cancer-related deaths, which is associated with a continued increase in cancer survivors. The most important side effect of anthracycline chemotherapy (CT) regimens, which are widely used in breast cancer patients, is cardiotoxicity, which limits its use in therapeutic doses and is important for its early detection.

Aim: The main goal of the research is to study the early diagnosis of heart failure (HF) developed as a result of anti-cancer combined chemotherapy in patients with breast cancer.

Material and methods:The research group consisted of prospective patients, comprising 70 women who were diagnosed with breast cancer for the first time, based on their medical records. All patients underwent cardiological examinations both before the start of CT, and during the inter-course periods of the treatment, as well as one year later the treatment. The control group was formed on the basis of the data of 50 female patients with confirmed breast cancer diagnosis, who did not undergo cardiology examinations during the intervals between treatment courses. All patients in the group also underwent the necessary complex examinations to evaluate cardiac function before starting CT, immediately after treatment and one year later treatment.

Results: Among patients who did not undergo cardiology examinations during the inter-course period after one year of CT, 36% developed HF with preserved ejection fraction (EF), 54,0% developed HF with mildly reduced EF, and 10,0% developed HF with reduced EF. Among patients who underwent cardiology examinations during the inter-course period, 74,3% developed HF with preserved EF, 12,9% developed HF with mildly reduced Ef, and no patients developed HF with reduced EF (p_u<0,001).

Conclusion: Regular use of TTE in early diagnosis of the HF component of developing cardiotoxicity in low-risk breast cancer patients treated with definite cardiotoxic combination CT 4th, 8th, and 1 year post-treatment LVEF should be kept under control.An increase in NT-proBNP, even at very low levels, should be considered as a high-risk indicator in the early diagnosis of preserved HF in patients with breast cancer undergoing CT

combined with Anthracyclines. It should be checked on the 4th, 8th of the treatment course, after the end of the treatment and 1 year later.

Oral Presentation Session

CORONARY ARTERY DISEASE: RISK FACTORS,BIOMARKERS AND OUTCOMES

Date: 09.06.2024 Time: 10:30– 11:50 Hall: 4

ID: 24

Topic:

Cardiology > Percutaneous coronary interventions

Presentation Type:

Oral Presentation

A NEW BIOMARKER FOR PREDICTION OF INFARCT SIZE AFTER ST-ELEVATION MYOCARDIAL INFARCTION

MD UMUT UYAN[*] [1] , MD CİHAN AYDIN[2] , MD AYKUT DEMİRKIRAN[2]
[1] ÖDEMİŞ DEVLET HASTANESİ ,KARDİYOLOJİ,İZMİR
[2] NAMIK KEMAL ÜNİVERSİTESİ TIP FAKÜLTESİ, KARDİYOLOJİ,TEKİRDAĞ

Objective: We aim to determine the utility of tumor necrosis factor-like weak inducer of apoptosis (TWEAK) for prediction of infarct size on 30 days after ST-elevation myocardial infarction (STEMI). Methods: Patients with anterior myocardial infarction admitted to our hospital in the hyperacute phase were included in our study. Blood samples for TWEAK, hs-CRP, CK MB, and hs-TnT levels were obtained at the time of arrival at the hospital. Echocardiographic measurements were performed on 30 days after acute STEMI. Results: The study cohort comprised patients 90 enrolled STEMI patients between January 2020 and September 2022. Plasma TWEAK levels were markedly elevated at hospital arrival. There was a positive moderate correlation between serum TWEAK levels at admission and infart size on 30 days after STEMI (p=0.01, r=0.62). There was a negative correlation between TWEAK levels at admission and LVEF on 30 days (r = -0.55, p = 0.002); however, no significant correlations were observed between TWEAK levels at 4. hours after PPCI and %LVEF on 30 days (p=0.081). Conclusion: Plasma TWEAK had a predictive value for infart size after STEMI in earlier phase before serum troponin levels increase. Keywords: Coronary artery disease, myocardial infarction, Tumor necrosis factor-like weak inducer of apoptosis

ID: 29

Topic:

Cardiovascular Surgery > Other

Presentation Type:

Oral Presentation

Evaluation Of Response To Aspirin And Clopidogrel In Adults With Cardiovascular And Cerebrovascular Diseases

Assoc. Prof. Abdullah Ozer[1] , MD Huseyin Demirtas[* 1] , MD Sercan Tak[1] , MD Basak Kocak[1] , MD Eda Nur Yigiter[1] , Prof. Gursel Levent Oktar[1] , Prof. Zuhre Kaya[2]

[1] Gazi Univercity Faculty of Medicine Department of Cardiovascular Surgery

[2] Gazi Univercity Faculty of Medicine Department of Child Health and Diseases

Evaluation Of Response To Aspirin And Clopidogrel In Adults With Cardiovascular And Cerebrovascular Diseases

Objectives: The purpose of this study was to investigate the antiplatelet drug resistance utilizing light transmission-lumiaggregometry (LT-LA) and platelet function analyzer-100 (PFA-100) in patients undergoing cardiovascular surgery.

Materials and Methods: The study included 60 patients diagnosed with stable coronary artery disease and peripheral vascular diseases that required surgery. The participants were divided into three groups: patients receiving Aspirin (ASA) (n=21), patients receiving Clopidogrel (CLO) (n=19), and patients receiving dual therapy (ASA+CLO) (n=20). Aggregation and secretion tests in LT-LA and closure time in PFA-100 were used to measure antiplatelet drug resistance.

Results: Based on the ADP-induced aggregation test, 43% of patients were resistant to ASA, 22% to CLO, and 15% to dual therapy.Diabetes, hypertension, and hyperlipidemia were the most commonly identified comorbid disorders. In patients with comorbid risk factors, the median value of platelet aggregation response to ADP was significantly higher in the ASA group than in the CLO and dual therapy groups ($p<0.05$). In patients receiving ASA monotherapy, the maximum amplitude of aggregation response to platelet agonists was equal to or more than 70% in 43% of patients for ADP and 28% for collagen in LT-LA. Elevated ADP (≥0.29 nmol) and collagen (≥0.41 nmol)-induced ATP release were found in 66% of patients utilizing ADP agonist and 80% of patients using collagen agonist undergoing ASA therapy in LT-LA. Closure times in PFA-100 were normal in 28% of patients using collagen-ADP cartridges and 62% of patients using collagen-epinephrine (CEPI) cartridges who received ASA. Recurrent thrombosis and bleeding were observed in 12 (20%) of patients with cardiovascular disease. Three of these individuals (25%) showed ASA resistance, which showed normal response to ADP-induced aggregation (≥70%) and secretion (≥0.29 nmol), as well as normal CEPI closure times.

Conclusions: Our findings suggest that antiplatelet drug monitoring with LT-LA and PFA-100 may be useful in high-risk and complicated cardiovascular patients.

Keyword: *Antiplatelet therapy, AntLummiagregometry, PFA-100, Cardiovascular disorder*

ID: 42

Topic:

Cardiology > Percutaneous coronary interventions

Presentation Type:

Oral Presentation

The Relationship Between Prognostic Nutritional Index and Severity of Coronary Artery Disease in Patients with Initial Presentation of ST Elevated Myocardial Infarction at the Clinic

MD yücel kanal*
Cumhuriyet Universty

Backgraund:
SYNTAX score is a validated scoring system used in decision-making between percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG) in patients with coronary artery disease (CAD), particularly those with multivessel disease or left main coronary artery (LMCA) disease, reflecting the complexity of CAD and holding prognostic significance. Prognostic Nutritional Index (PNI) is calculated using lymphocyte and albumin values, serving as an index indicative of immunonutritional status, with lower PNI associated with poor prognosis, especially in cardiovascular and malignant diseases. Additionally, a previous study has shown significantly lower PNI in patients experiencing No reflow during PCI. In our study, we aimed to evaluate the relationship between coronary complexity determined by SYNTAX score and PNI in patients presenting with acute coronary syndrome (ACS).

Methods:
Between 2022 and 2024, a total of 308 patients presenting with ACS were included in our clinic-based study. Patients with a history of acute or stable coronary intervention, septic conditions, end-stage liver or kidney failure, malignancy under follow-up, and unavailable data were excluded. The final study cohort comprised 206 patients, categorized into two groups based on SYNTAX score (<23 and ≥23). Demographic characteristics and laboratory parameters were compared between the two groups. PNI was calculated using serum albumin level (g/dl) × 10) + (total lymphocyte count (mm3) × 0.005) formula based on blood samples collected at hospital admission for ACS.

Results:
The mean age of the 206 included patients was 59±12.1 years, with 26.6% being female. In the SYNTAX score <23 group, left ventricular ejection fraction (LVEF), lymphocyte count, and PNI were significantly higher compared to the other group ($p<0.05$). Logistic regression analysis revealed LVEF and PNI as independent predictors of coronary complexity determined by SYNTAX score in patients with initial presentation of ACS ($p<0.05$). The area under the ROC curve for PNI predicting SYNTAX score was 0.607 (95% confidence interval [CI]: 0.528-0.685, p: 0.009). PNI at a cutoff of 55.8 demonstrated 85% sensitivity and 21%

specificity in distinguishing SYNTAX score ≥23 (intermediate and high scores) from <23 (low score).

Table 1. Demographic and clinical characteristics of the patients

Variables	SYNTAX score < 23 (n = 120)	SYNTAX score ≥ 23 (n = 86)	p
Age, years	58.0 ± 12.0	61.0 ± 12.0	0.063
Females, n (%)	33 (27.5)	22 (25.6)	0.759
DM, n (%)	35 (29.4)	29 (33.7)	0.511
Hypertension, n (%)	54 (45.0)	34 (39.5)	0.434
Tobacco, n (%)	54 (45.0)	32 (37.2)	0.263
LVEF, %	50.0 (20.0-70.0)	45.0 (25.0-65.0)	**0.003**
Clinical status, n (%)			0.903
STEMI	68 (56.7)	48 (55.8)	
NSTEMI	52 (43.3)	38 (44.2)	

DM: Diabetes mellitus; LVEF: Left ventricular ejection fraction; STEMI: ST elevation myocardial infarction; NSTEMI: Non-ST elevation myocardial infarction; p< 0.05 indicates statistical significance

Table 2. Laboratory findings of patients

Variables	SYNTAX score < 23 (n = 120)	SYNTAX score ≥ 23 (n = 86)	p
Leukocyte x10³/mm³	11.0 (4.4-27.1)	10.6 (5.3-23.5)	0.438
Lymphocyte, x10³/mm³	2.1 (0.9-6.2)	1.8 (0.5-7.9)	**0.008**
Platelets, x10³/mm³	240.0 ± 65.0	234.0 ± 67.0	0.501
Hemoglobin, g/dL	14.0 (6.8-18.7)	14.1 (9.4-17.5)	0.663
Glukoz, mg/dL	123.0 (62.0-394.0)	122.0 (70.0-394.0)	0.651
Albumin, g/dL	3.9 (2.8-4.7)	3.8 (2.3-4.5)	0.169
PNİ	50.0 (39.0-73.7)	47.5 (28.5-75.5)	**0.009**
Urea, mg/dL	32.0 (15.0-271.0)	31.0 (17.0-196.0)	0.774
Creatinine, mg/dL	0.9 (0.5-2.1)	0.9 (0.6- 2.2)	0.907
C-reactive protein, mg/L	5.1 (0.0-134.7)	3.6 (0.2-260.0)	0.605

PNI, Prognostic nutritional index; CRP, C-reactive protein; p< 0.05 indicates the level of statistical significance.

Table 3. Univariate and multivariate logistic regression analysis for SYTAX score predictors.

Variables	Univariate analysis			Multivariate analysis		
	OR	**95% GA**	p	**OR**	**95% GA**	p
PNİ	0.946	0.907-0.987	**0.010**	0.954	0.914-0.996	**0.034**
LVEF	0.952	0.923-0.983	**0.002**	0.957	0.927-0.989	**0.008**

PNI, Prognostic nutritional index; LVEF, Left ventricular ejection fraction; OR, odds ratio; GA, confidence interval; p< 0.05 indicates the level of statistical significance.

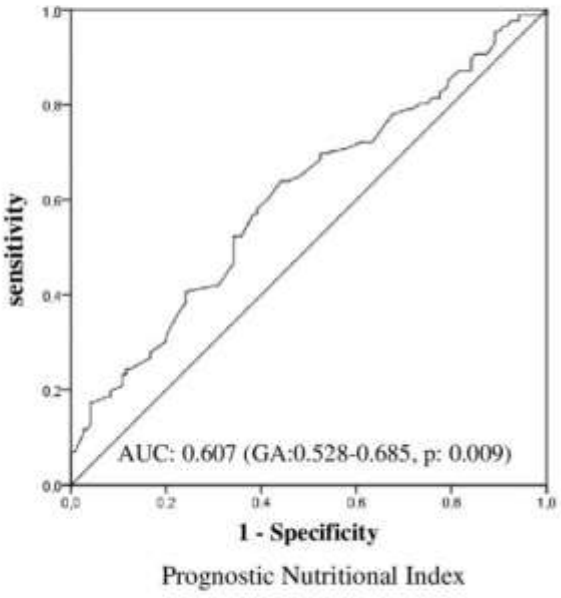

Figure 1. The ROC curve of the Prognostic Nutritional Index for the SYNTAX score. AUC, the area under the curve; CI is the confidence interval.

Conclusion:
In patients presenting with ACS and SYNTAX score <23, PNI was significantly higher. Thus, pre-procedural calculation of PNI may provide insight into predicting the complexity of CAD in this patient population.

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Keyword: *coronary artery disease, syntax score, Prognostic Nutritional Index*

ID: 45

Topic:

Cardiology > Other

Presentation Type:

Oral Presentation

THE VALUE OF LIPID PROFILE FOR PREDICTION OF SEVERITY AND EXTENT OF CORONARY ARTERY DISEASE

MD Gülay Özkececi[*] [1] , Prof. Ersel Onrat[2]
[1] Özel Doruk Nilüfer Hastanesi, Kardiyoloji
[2] Afyon Sağlık Bilimleri Üniversitesi, Tıp Fakültesi , Kardiyoloji AD

Backgraund: Determining the extent and severity of coronary artery disease is important for treatment decision and determining prognosis. It is known that dyslipidemia causes atherosclerosis. The aim of our study was to investigate the effect on the severity and extent of coronary artery disease of serum lipid profile in Turkish population.

Methods: 197 consecutive patients diagnosed with angiography-enhancing artery disease between January 2014 and January 2015 were included in the study. Coronary angiography images of all patients were viewed and calculated SYNTAX scores. Patients were divided into three groups according to SYNTAX scores (SYNTAX Score 1-22, 23-32, >32). Serum total cholesterol, low density lipoprotein (LDL), high density lipoprotein (HDL) and triglyceride levels were recorded. The ratio of triglycerides to HDL- cholesterol (Atherogenic Index-1) , LDL- cholesterol to HDL-cholesterol (Atherogenic Index-2 and the ratio of total cholesterol to HDL-cholesterol were calculated.

Results: There were no significant differences between the three patient groups in terms of serum total cholesterol, LDL-cholesterol, HDL cholesterol, triglycerides, Atherogenic Index-1, Atherogenic Index-2 and total cholesterol / HDL-cholesterol ratio. However, positive correlation were found between the SYNTAX score and total serum cholesterol value and total cholesterol / HDL-cholesterol ratio (respectively; $r = 0.145$, $p = 0.044$ and $r = 0.18$, $p = 0.005$)

Conclusion: Serum total cholesterol and total cholesterol / HDL-cholesterol ratio, which are cheap and easily available markers, may used to prediction severity and entent of coronary heart disease.

ID: 85

Topic:

Cardiology > Percutaneous coronary interventions

Presentation Type:

Oral Presentation

The Relationship Between Radial Artery Stenosis and Triglyseride Glucose Index After Transradial Coronary Angiography

MD CAN ÖZKAN*
T.C Sağlık Bakanlığı Bursa Şehir Hastanesi

BACKGROUND: The transradial method in coronary and peripheral procedures has become standard practice because of its numerous advantages, including a lower incidence of vascular complications at the intervention site, decreased mortality in patients with acute coronary syndrome, enhanced patient comfort, and reduced cost. However, with the increasing prevalence of transradial procedures, a better understanding of associated complications has emerged. Complications include radial artery stenosis and occlusion.

The triglyceride glucose index is used as an indicator of insulin resistance. Initially, in a large cross-sectional study conducted in healthy individuals in 2008, it was found that the triglyseride glucose index was superior to the HOMA-IR index in determining I . In a study by Lee et al., it was also demonstrated that the predictive value of the triglyseride glucose index was better than the HOMA-IR index for assessing IR. Furthermore, recent studies have shown that the trigliseride glucose index is an independent determinant of prognosis in patients with cardiovascular disease, suggesting its potential clinical utility in predicting cardiovascular risk.

In this study, we aimed to elucidate the correlation between radial artery stenosis/occlusion and triglyseride glucose index following transradial angiography

METHODS: Retrospective analysis of 165 non diabetic transradial coronary angiography patients was conducted. Doppler ultrasonography assessed radial artery stenosis/radial artery occlusion one month post-procedure. Triglyseride glucose index, calculated from fasting triglyceride and fasting glucose levels.

RESULTS: Radial artery stenosis/Radial artery occlusion incidence was 16.3%, with 8.4% experiencing radial artery occlusion. Patients with radial artery stenosis/radial artery occlusion showed significantly elevated triglyseride glucose index, triglyseride levels,low density lipoprotein cholesterol and total cholesterol. Multivariate analysis identified triglyseride glucose index as independent radial artery stenosis/radial artery occlusion predictors.

CONCLUSIONS: This study establishes triglyseride glucose index association with radial artery stenosis/radial artery occlusion after transradial access, suggesting triglyseride glucose index as a potential predictor and aiding pre-transradial approach risk assessment for alternative angiography routes.

References:

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Keyword: *Coronary Angiography, Radial Artery, Triglyseride Glucose Index*

ID: 122

Topic:

Cardiology > Metabolic Syndrome

Presentation Type:

Oral Presentation

PREDICTION OF TRIGLYCERIDE GLUCOSE INDEX ON MORTALITY IN ATRIAL FIBRILLATION PATIENTS

MD Yusuf Ziya ŞENER[*] [1] , MD Adnan Duha CÖMERT[2]

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[2] Gazi Yaşargil Training and Research Hospital, Cardiology Department, Diyarbakır, TÜRKİYE

Background: Triglyceride-glucose index (TGI) is a biomarker of insulin resistance and is associated with an increased risk of cardiovascular events and diabetes mellitus. In this study, we aimed to investigate the prediction of the TGI on mortality in AF patients. Methods: A total of 2592 patients who applied to the cardiology outpatient clinic with the diagnosis of AF between 2014 and 2016 were included in the study. According to the TGI values, patients were divided into two groups. Patients with TGI value ≥ 8.65 were included in Group 1 and TGI value <8.65 were included in Group 2. Patients' 1-year and 5-year all-cause mortality-related data were analyzed. Results: The average age of the patients was 68.7±10.9 years and 44.5% of the patients were male. No significant differences were observed between the groups in baseline characteristics other than gender ($p<0.001$), HT ($p=0.001$) and DM ($p<0.001$). 1-year ($p=0.484$) and 5-year all-cause mortality ($p=0.126$) rates were similar. TGI was still not associated with 1-year and 5-year all-cause mortality after patients with diabetes were excluded. Conclusion: In our study, we observed that TGI, which is associated with poor cardiac outcomes, is not a predictor of all-cause mortality in AF patients.

Keyword: *Insulin resistance, triglyceride-glucose index, atrial fibrillation*

ID: 138

Topic:

Cardiology > Arrhythmias and antiarrhythmic therapy

Presentation Type:

Oral Presentation

Relationship between RDW-albumin ratio and prognosis in intensive care unit patients with atrial fibrillation

MD Azmi Eyiol*
Beyhekim Training and Research Hospital, Division of Cardiology

Background: Atrial fibrillation, which is frequently seen in patients in intensive care unit (ICU), is one of the most common arrhythmias that can cause serious cardio-cerebrovascular events and death. A novel index of inflammation and the RDW-to-albumin ratio (RAR), a combination of red cell distribution width (RDW) and albumin, were independently associated with increased risk of AF. Therefore, in our study, we examined the relationship between RAR and the prognosis of patients with AF hospitalized in the ICU.

Methods: A total of 296 patients hospitalized in ICU for various reasons between January 1 and March 01, 2024 were retrospectively examined. Male and female patients over the age of 18 and patients with AF according to electrocardiography (n: 145) were included in the study. In addition, a control group was created from patients of the same age with normal sinus rhythm (NSR) (n:151). RAR levels were calculated by dividing the RDW obtained from routine whole blood analysis during ICU admission by albumin. Mortality assessment was based on in-hospital death. All patients were divided into two as low and high RAR patients according to the RAR cut-off value, and all data were compared with the two groups. Additionally, ROC analysis was performed to determine the value of RAR in predicting mortality of patients with AF.

Results: RAR was significantly higher in patients with AF compared to those without AF. Compared to the low RAR (RAR≤0.379) group, the probability of AF, need for mechanical ventilation and in-hospital mortality rate were found to be significantly higher in the high RAR (HRR> 0.379) group ($p<0.05$ for all). RAR showed a higher performance than albumin and RDW alone in predicting mortality (AUC; 0.980, 0.956, 0.952, $p<0.001$, respectively).

Discussion: RAR is thought to accurately reflect inflammation and may be an important marker in risk assessment for cardiovascular disease in the ICU. In another study of 2436 people undergoing coronary angiography, RAR was found to be significantly higher in the AF group compared to the non-AF group. In the study by Chen C et al, RAR was independently associated with 28-day all-cause mortality in individuals aged ≥80 years with AF. In our

study, while the RAR cut-off value in predicting mortality was > 0.623, the sensitivity was found to be 95.6%, the specificity was 96% and the AUC value was 0.980.

Conclusion: High RAR measured at admission can strongly predict the prognosis of ICU patients with AF.

ID: 161

Topic:

Cardiology > Percutaneous coronary interventions

Presentation Type:

Oral Presentation

RELATIONSHIP BETWEEN MEDITERRANIAN DIET AND NO REFLOW PHENOMENON AFTER PERCUTANEOUS CORONARY INTERVENTION

MD YASIN OZEN[*] [1] , MD IDRIS YAKUT[2]

[1] Selçuk University Faculty of Medicine, Department of Cardiology, Konya, TURKEY

[2] Medipol Bahçelievler Hospital, Department of Cardiology, İstanbul, TURKEY

BACKGROUND: The no-reflow phenomenon (NRP) is a common complication of SVG, percutaneous transluminal coronary angioplasty (PTCA) and percutaneous coronary intervention (PCI). This situation is much more common when applied to saphenous vein grafts (SVG) compared to native vein PCI. In this study, we aimed to evaluate the relationship between NRF and Mediterranean diet score in this particular patient group.

METHODS: This retrospective study population consisted of 224 consecutive elective coronary artery bypass graft (CABG) patients undergoing PCI/PTCA to SVG. 124 patients were divided into two groups as NRP (n=38) and normal flow (n=86).

RESULTS: Parameters that may be risk factors for NRP in patients who underwent saphenous PCI were evaluated with logistic regression analysis. Accordingly, a low Mediterranean diet score (OR: 1,01, %95 CI: 1,0-1,02, p <0,001) was found to be an independent predictor for NRP in saphenous vein PCI.

CONCLUSIONS: Our study showed that the risk of developing NRP may be higher in patients with a low Mediterranean diet score and a previous CABG who required PCI for their SVG.

References:

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Keyword: *No Reflow Phenomenon, Mediterranean Diet, Coronary Artery Disease*

Oral Presentation Session

New Horizons In Interventional Cardiology

Date: 09.06.2024 Time: 11:50– 12:40 Hall: 4

ID: 43

Topic:

Cardiology > Percutaneous coronary interventions

Presentation Type:

Oral Presentation

Coronary bougie - a new device in endovascular surgery?

MD Grigoriy Sazanov*
Stavropol Regional Clinical Hospital, Stavropol, Russia;

Aim. To assess the effect of coronary artery bougienage on the incidence of no/slow-reflow complication during percutaneous coronary intervention (PCI) in patients diagnosed ST-elevation myocardial infarction (STEMI).

Methods. We analyzed the experience of the department of endovascular diagnostic and treatment methods of the Stavropol Regional Clinical Hospital for endovascular surgical treatment of patients with STEMI, including after thrombolytic therapy (TLT). The study included 721 patients admitted to the hospital within the first 12 hours from the moment of the first contact with a medical staff. For the study, patients were divided into 2 comparable groups according to the number of patients by their gender, age, and other characteristics. The basic difference between the groups was the blood flow for infarct-related artery (IRA) according to the gradation scale TIMI (Thrombolysis in myocardial infarction). Each of the groups had 2 subgroups that were also comparable among themselves by the number of patients by their gender, age, and other characteristics. This groups were divided by performing of coronary artery bougienage.

Results. The lowest frequency of no/slow-reflow phenomenon was in the groups in which bougienage was performed before stent implantation.

Conclusion. The most preferred in PCI is perform bougienage if there is an appropriate technical feasibility. In patients with a blood flow level TIMI 0 is recommended to make bougienage. After this manipulation antegrade blood flow may be achieved.

Keyword: *angiography, coronary stenting, no-reflow, bougienage*

ID: 115

Topic:

Cardiology > Diseases of aorta

Presentation Type:

Oral Presentation

Life-Saving Endovascular Aortic Repair Following Gastrointestinal Bleeding-Induced Aortic Rupture: A Case Study

MD Damirbek Osmonov , MD Aizharkyn Kalmuratova , MD Nurzada Belekbaeva*
Bicard Clinic

BACKGROUND:

A 25-year-old male with a history of hypertension and prior surgical intervention for coarctation of the aorta presented with massive gastrointestinal bleeding (GIB) and subsequent laparotomy. Despite initial control of bleeding, the patient developed an aortic rupture leading to life-threatening hemorrhage into the lungs. Radiological findings revealed a dissecting saccular aneurysm of the proximal descending aorta with signs of rupture, alongside extensive alveolar hemorrhage and bilateral pleural effusion (Figure 1 a, b and c).

METHODS:

The patient underwent thoracic endovascular aortic repair (TEVAR) with access obtained through both common femoral arteries. Guidewires were advanced to identify and mark the rupture point, followed by deployment of a thoracic stent graft to seal the aortic lesion. Sedation was kept minimal to preserve lung function, avoiding general anesthesia due to compromised respiratory reserves secondary to pulmonary hemorrhage.

RESULTS:

Final aortography confirmed successful deployment of the stent graft with optimal positioning below the rupture site, effectively excluding the dissecting aneurysm and restoring aortic integrity (Figure 1 d). The procedure was performed without complications, and the patient's condition stabilized post-intervention. A follow-up chest CT after six months post-procedure detected compression of the hematoma around the graft stent and disappearance of the pleural effusion (Figure 1 e)

CONCLUSIONS:

This case underscores the critical management challenges posed by simultaneous massive GIB and aortic rupture, necessitating swift intervention to prevent fatal outcomes. TEVAR emerged as a life-saving measure, offering a minimally invasive approach to address the aortic pathology while mitigating risks associated with prolonged anesthesia and active

bleeding. Despite the urgency of the situation, careful procedural planning and execution were essential for achieving optimal outcomes in this complex clinical scenario.

Figure 1.

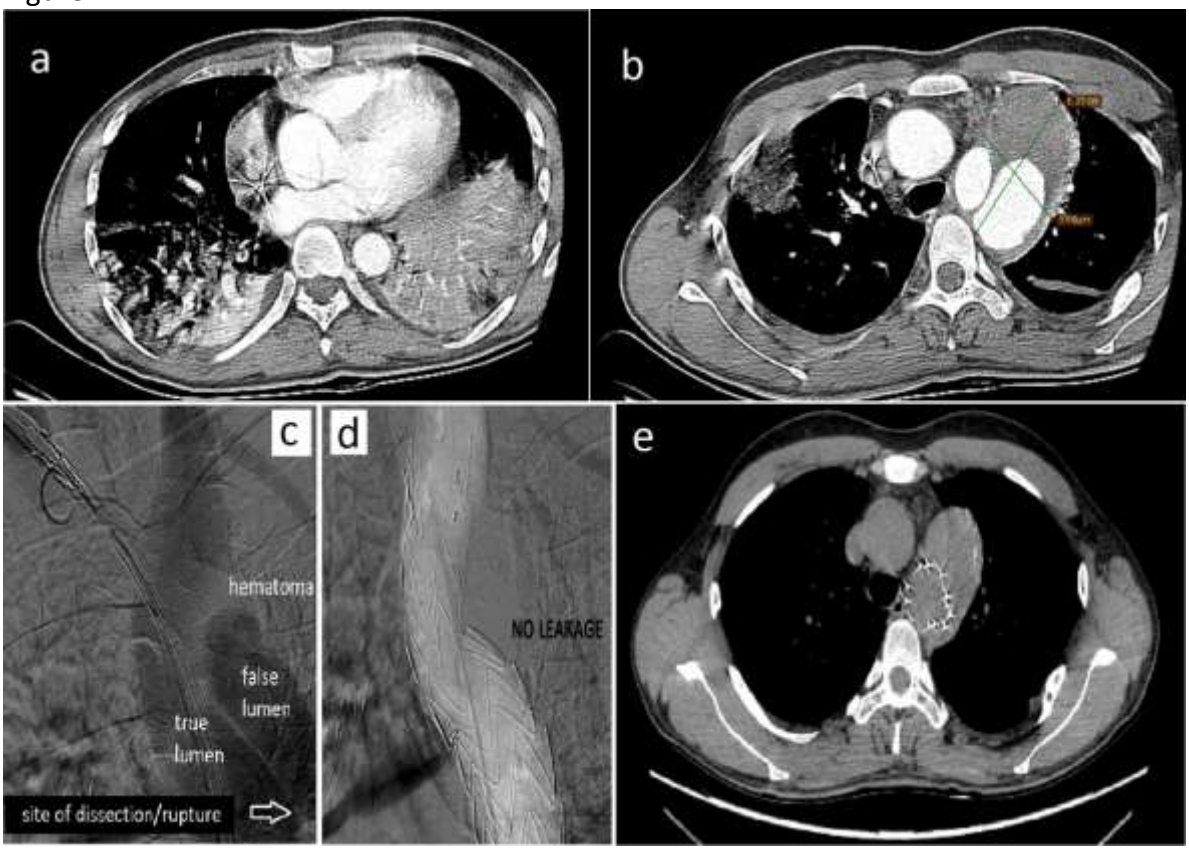


Figure explanations:

The aortic rupture led to life-threatening hemorrhage into the lungs, accompanied by extensive alveolar hemorrhage and bilateral pleural effusion (a). A massive hematoma formed around the site of rupture (b). Angiography revealed a dissecting saccular aneurysm at the proximal descending aorta with signs of rupture (c). Final aortography after the TEVAR confirmed successful deployment of the stent graft, effectively excluding the dissecting aneurysm (d). A follow-up chest CT after six months post-procedure detected reduction in size of the hematoma around the graft stent and disappearance of the pleural effusion (e).

ID: 118

Topic:

Cardiology > Percutaneous coronary interventions

Presentation Type:

Oral Presentation

The Impact Of Provisional Stenting And Minicrush Technique On 1-Year Mortality İn Percutaneous Treatment Of Coronary Bifurcation Lesions

MD Mehmet Altunova , MD Gökhan Demirci*

University of Health Sciences, Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital

Background: The ideal stenting technique for percutaneous treatment of bifurcation lesions in coronary artery disease remains a subject of ongoing debate. Uncertainties persist regarding the long-term clinical outcomes of both the double stent (DS) strategy and provisional stenting (PS) methods. In this study, we aimed to investigate the effect of the minicrush technique from PS and DS strategies on 1-year mortality in coronary bifurcation lesions.

Methods: A total of 150 patients who underwent elective percutaneous stenting treatment for coronary artery bifurcation lesions between 2021 and 2022 at our center were included in the study. Patients were divided into two groups: those undergoing PS (n=85) and those undergoing minicrush technique (n=65). Basic demographic and procedural characteristics were compared between the two groups. The impact of stenting technique on long-term outcomes was analyzed.

Results: According to the study results, the number of patients developing 1-year mortality was determined as 11 (7.3%). There were 9 (10.6%) patients in the PS group and 2 (3.1%) patients in the minicrush group (p=0.080). The mean number of repeat procedures at 1 year was determined as 9 (6). There was no statistically significant difference between the two groups in terms of the number of repeat procedures (PS: 5 (5.9) - Minicrush: 6 (6.2), p=0.945). Among the demographic characteristics listed in Table 1, age (p=0.018) and main branch stent length (p=0.032) were found to be higher in the minicrush group. While bifurcation location (p=0.021) and Medina classification (p<0.001) differed between the two groups, other parameters were similar. Age, diabetes mellitus (DM), main branch stent diameter, and left ventricular ejection fraction (LVEF) were identified as significant parameters in the univariate analysis. In the multivariate analysis conducted with these parameters, DM (p=0.045) and LVEF (p=0.018) were determined as independent predictors of 1-year mortality.

Conclusion: While no significant difference was observed in 1-year mortality when provisional stenting was compared with the minicrush strategy for coronary bifurcation

lesions, the identification of DM and LVEF as independent predictors of 1-year mortality is noteworthy.

Keyword: *bifurcation stenting, percutaneous coronary intervention*

ID: 128

Topic:

Cardiology > PI for SHD-Transcatheter aortic valve replacement

Presentation Type:

Oral Presentation

The effect of uric acid/albumin ratio on one-year mortality in TAVI patients.

MD GAZİ ÇAPAR* , MD MEHMET NAİL BİLEN
Istanbul Basaksehir Çam and Sakura City Hospital Cardiology Clinic

Introductıon

Aortic stenosis begins with a plaque similar to coronary artery disease. Transcatheter aortic valve implantation (TAVI) has emerged as an alternative therapeutic option to surgically implanted aortic valve replacement for patients with severe symptomatic AS who are considered inoperable or at high risk. Both diseases share common risk factors such as age, male gender, hyperlipidemia, and signs of active inflammation, which have been associated with coronary artery disease.Albumin, which is one of the inflammatory markers, is affected in this process. The aim of this study is to examine whether uric acid/albumin ratio (UAR) predicts 1-year mortality in aortic stenosis (AS) patients undergoing transcatheter aortic valve implantation (TAVI).

Method

The study included 61 patients with aortic stenosis who underwent TAVI at Başakşehir Çam and Sakura Hospital. The uric acid albumin ratio was calculated before the TAVI procedure. Mortality rates were examined at the end of 1 year.Data from a total of 61 individuals were used in the study.

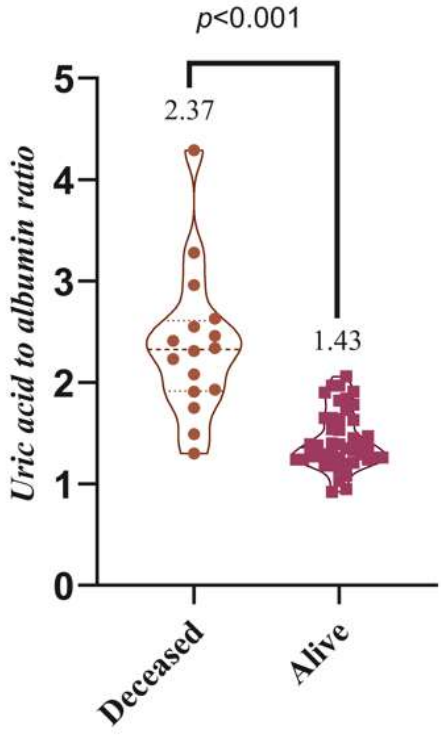
Results

These individuals were classified into two groups based on mortality: Group A (mortality = 1) and Group B (mortality = 2). There were 16 individuals in Group A (26.23%) and 45 individuals in Group B (73.77%) (figüre 1). According to the results of the ROC analysis, the performance of the evaluated variable in determining mortality is quite high .The Area under the ROC curve (AUC) was measured as 0.924 (95% 0.827 - 0.976). The sensitivity of the evaluated variable was determined as 81.25%, and the specificity was 91.11% ($p < 0.001$) (Figüre 2).

Conclusion

Recent studies have utilized UA/A as an inflammatory marker to predict mortality risk in acute kidney injury and acute coronary syndromes.Prior research has demonstrated an association between increased mortality and both low albumin and high uric acid levels.UA/A may use in predictive inflammatory parameter and may be a part of the cardiovascular

examination to identify high-risk individuals for the TAVI procedure. We believe that its predictive effect on one-year mortality could shape the treatment approach during the postoperative period.



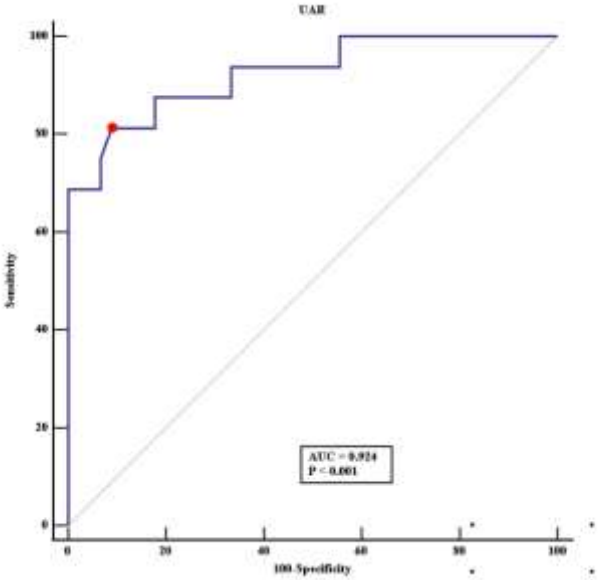


Figure-1-

Figure-2-

Sources

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Oral Presentation Session

New Insights In Percutaneous Interventions For Coronaries And Heart Valves

Date: 09.06.2024 Time: 12:40– 13:30 Hall: 4

ID: 151

Topic:

Cardiology > Percutaneous coronary interventions

Presentation Type:

Oral Presentation

Impact of prolonged drug-coated balloon inflation on residual stenosis and clinical outcomes in coronary artery disease patients

MD Şefa Şahbazova[*] [1] , MD Mehriban Isgenderova[2]
[1] Central Clinic Hospital
[2] Melhem hospital

BACKGROUND: There is a paucity of data regarding the optimal duration of drug-coated balloon (DCB) inflation for coronary lesions. We decided to explore the effect of DCB angioplasty with versus without long inflation time on residual stenosis and clinical outcomes in patients with coronary artery disease.

METHODS: This study included 244 consecutive patients with 312 lesions undergoing paclitaxel DCB angioplasty using different inflation time, divided according to whether the total inflation time of the DCB was ≥180 s (prolonged group) or <180 s (standard group). The primary clinical endpoint, defined as a composite of all-cause death, myocardial infarction, stroke, or target lesion revascularization.

RESULTS: In the matched cohort, the median clinical follow-up period was 360 days. Postprocedural angiographic diameter stenosis was smaller in the prolonged group than in the standard group (30.0% [22.0–37.0] vs. 33.5% [25.5–40.5]; p = 0.042). Intravascular ultrasound measurements revealed that longer DCB inflation time resulted in smaller area stenosis (66.6 ± 7.8% vs. 69.4 ± 7.0%; p = 0.044) and a less mean increase in percent atheroma volume (−11.2 ± 7.1% vs. −7.4 ± 5.9%; p = 0.004) after angioplasty. The rate of the primary endpoint was lower in the prolonged group than in the standard group (log-rank p = 0.025). The efficacy of prolonged DCB inflation was prominent in patients with in-stent restenosis and longer lesions.

COCLUSION: Prolonged DCB inflation was associated with reduced residual stenosis and improved clinical outcomes in patients with coronary artery disease undergoing percutaneous coronary intervention. Prospective randomized trials are warranted to validate the benefits of DCB angioplasty with long inflation time.

References:

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ID: 154

Topic:

Cardiology > Diagnosis and treatment of valvular heart disease

Presentation Type:

Oral Presentation

Management of Left-Sided Obstructive Prosthetic Valve Thrombosis: A Novel Approach with 3 Case Series

MD Damirbek Osmonov[*] [1] , MD Aida Toktogulova[1] , MD Asan Nazarov[2] , MD Abdiashim Tashmamatov[2] , MD Gairat Yuldashev[1]

[1] Department of Cardiology, Bicard Clinic.

[2] Department of Cardiac Surgery, Bicard Clinic.

BACKGROUND:

Prosthetic valve thrombosis (PVT) is a rare but one of the most dreaded complications of implanted mechanical valves. Although surgery is the first-line treatment modality particularly in symptomatic obstructive mechanical valve thrombosis, it is associated with high rates of morbidity and mortality. Thrombolytic therapy has also been used as an alternative to surgical treatment. The risk for cerebral thromboembolism associated with thrombolytic therapy seems to be the main limitation for its use in left-sided mechanical valve thrombosis. To the best of our knowledge, this is the first case series of implantation of embolic protection devices during thrombolytic therapy for PVT.

METHODS:

Case 1 describes the management of a patient with obstructive prosthetic valve thrombosis of the aortic valve. Case 2 details the management of a patient with obstructive prosthetic valve thrombosis of the mitral valve. Case 3 presents the management of a patient with obstructive prosthetic valve thrombosis of the aortic valve. Thrombolytic treatment was administered in all cases, with the implantation of embolic protection devices into both carotid arteries.

RESULTS:

In Case 1 and 3, embolic protection devices were implanted into both internal carotid arteries followed by the administration of thrombolytic therapy with 50 mg Alteplase for 2 hours. In Case 2, embolic protection devices were also implanted, followed by thrombolytic therapy with 25 mg Alteplase for 2 hours. All procedures concluded without complications, with successful resolution of thrombi confirmed by imaging. In all cases, embolic protection devices captured a large amount of embolized thrombi (Figure).

CONCLUSIONS:

This case series presents a novel approach to the management of left-sided obstructive prosthetic valve thrombosis with the implantation of embolic protection devices during thrombolytic therapy. This approach may reduce the risk of embolic cerebral events, particularly in patients with large and mobile thrombi.

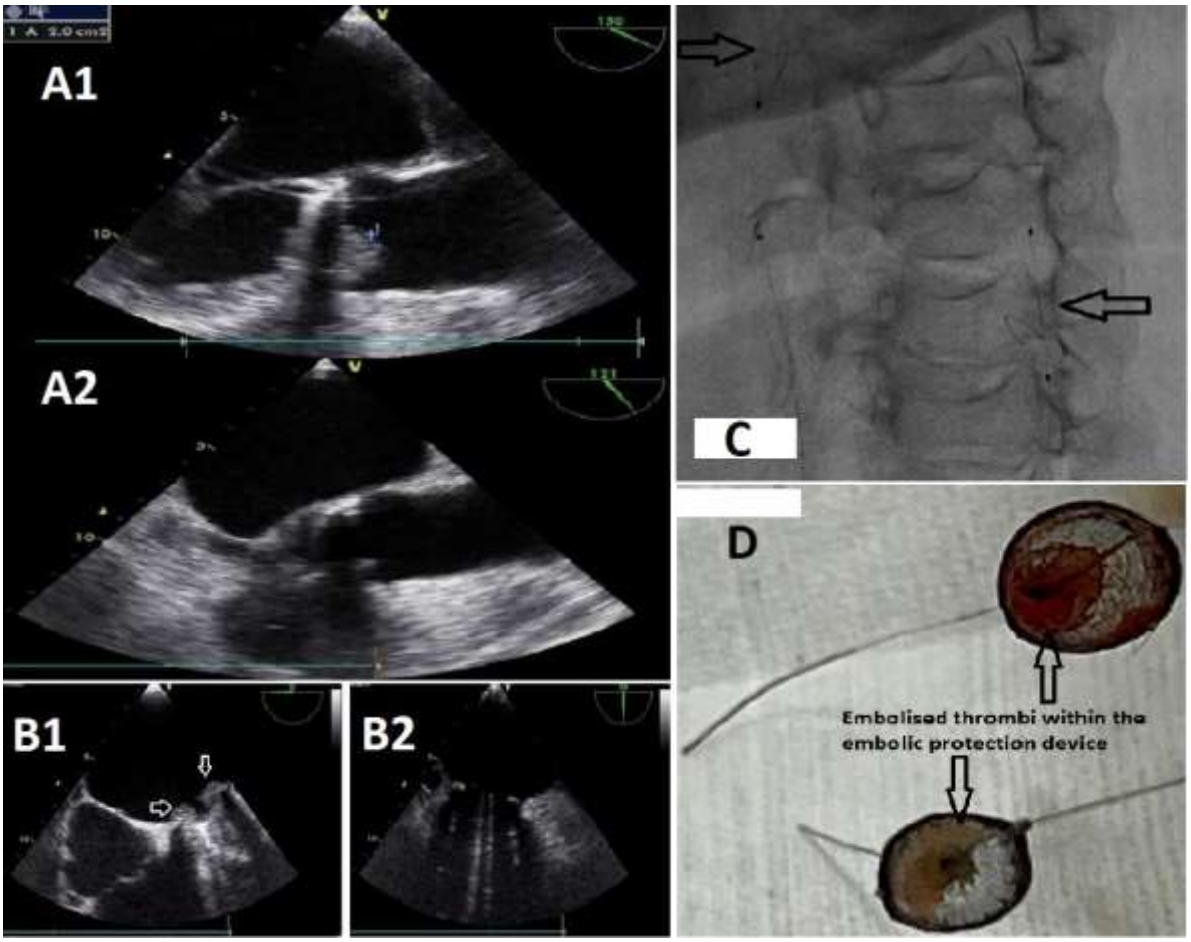

Figure explanations

Transesophageal echocardiography (TEE) of Case 1 detected severely restricted valve motions by a huge and partially mobile mass, compatible with thrombus, at the supravalvular aortic site, measuring 2 cm2 in size with a maximal diameter of 17 mm (A1). After the thrombolytic therapy, the thrombus completely resolved (A2). TEE of Case 2 detected hypoechogenic mobile masses, compatible with thrombus, on the atrial side of the mitral prosthetic annulus (B1). Following thrombolytic therapy, the thrombus completely resolved (B2). Embolic protection devices were located in both internal carotid arteries, indicated by arrows (C). An embolized thrombus (arrow) at the apex of both devices was detected (D).

ID: 164

Topic:

Cardiology > PI for SHD-Transcatheter pulmonary valve replacement

Presentation Type:

Oral Presentation

PS-CMR Study: Comprehensive Cardiac Magnetic Resonance Imaging in patients with severe pulmonary stenosis undergoing transcatheter repair

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Objective: The aim of this study was to investigate the role of cardiac magnetic resonance imaging (CMR) for comprehensive assessment of left- and right-side cardiac function in patients with long-neglected severe pulmonary stenosis (PS) undergoing transcatheter repair.

Methods: From January 2021 to December 2022, 22 patients (mean age 34.1 years and range 15-64 years) who underwent transcatheter repair of critical PS were prospectively enrolled. In all patients, in addition to routine echocardiography assessments, CMR assessments including volume, function, and strain measurements for four chambers were performed at baseline and compared across groups by severity of LV systolic function impairment.

Results: Of the 22 patients, 8 patients had preserved LVEF (defined as LVEF≥50%) and normal LV global longitudinal strain (defined as LVGLS≤-18.4%) (group 1), 12 patients had preserved LVEF but impaired LVGLS (group 2) and two patients with reduced LVEF (group 3). There was no significant difference across groups regarding average age, pulmonary artery systolic pressure, and six-minute walk test but a numeric trend of increased baseline pulmonary pressure gradient (for group 1-3, average baseline PPG 138.3±21.4mmHg vs 140.9±44.2mmHg vs 170.0±42.4mmHg, p>0.05). On CMR assessment, there were significant differences on right atrium EF for group 1-3, 48.7±9.5% vs 41.2±11.6% vs 19.6±24.6%, p=0.020) and left atrium EF (for group 1-3, 61.4±8.3% vs 55.0±13.5% vs 29.1±27.8%, p=0.020). The volume and function indexes for the right ventricle were comparable across the three groups.

Conclusion: CMR provides a valuable, comprehensive four-chamber assessment in patients with critical PS undergoing transcatheter balloon valvuloplasty.

ID: 169

Topic:

Cardiology > Acute coronary syndromes

Presentation Type:

Oral Presentation

Frontal QRS as a Predictor of Chronic Total Occlusion in ST-Elevation Myocardial Infarction Patients

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Background:

Chronic total occlusions (CTOs) in non-infarct-related arteries (NIRAs) pose a significant challenge in ST-segment-elevation myocardial infarction (STEMI) patients. This study explores the potential of the frontal QRS-T (f(QRS-T)) angle, derived from routine electrocardiography (ECG), as an indicator for CTOs in NIRAs. The research aims to contribute insights into the link between electrocardiographic patterns and coronary artery disease, enhancing risk stratification and therapeutic refinement in STEMI management.

Methods:

Conducted at the Konya City Hospital Cardiology Clinic, the study includes 420 STEMI patients undergoing 12-lead ECG and coronary angiography. Data collection involves a retrospective review of electronic medical records, focusing on patient demographics, clinical history, ECG reports, and angiographic findings, with emphasis on CTOs in NIRAs and the frontal QRS-T angle. Statistical analyses employ IBM SPSS Statistics 23, encompassing data preparation, descriptive statistics, comparative analyses, logistic regression, and ROC curve analysis.

Results:

Comparative analysis reveals significant differences in age and left ventricular ejection fraction between Non-CTO (n=350) and CTO (n=70) groups. The frontal QRS-T angle exhibits a substantial contrast (Non-CTO: 70°, CTO: 96°, $p < 0.001$). ROC curve analysis demonstrates a good diagnostic performance of the frontal QRS-T angle in predicting CTOs (AUC = 0.72). Other ECG parameters, demographics, and clinical characteristics show no significant differences.

Conclusion:

This study establishes the frontal QRS-T angle as a potentially crucial and easily obtainable predictor for CTOs in NIRAs among STEMI patients. The higher angle correlates with adverse outcomes, emphasizing its utility in risk stratification. The findings support the integration of the frontal QRS-T angle into routine clinical practice, offering a non-invasive tool for enhancing prognostication and individualized therapeutic approaches in STEMI management.

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ID: 170

Topic:

Cardiovascular Surgery > Varicose veins

Presentation Type:

Oral Presentation

Arginine Metabolism and the Role of Dimethylarginines in Venous Insufficiency

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Abstract

Our understanding of the potential effects of biomarkers associated with venous insufficiency, such as inflammatory, oxidative stress, and coagulation factors, on the venous vessel wall is limited. Reduced levels of circulating nitric oxide (NO) have been reported in patients with varicose veins. This study measured levels of L-arginine-related metabolites and dimethylarginines in the varicose veins of the lower extremity with venous insufficiency, the antecubital vein of the upper extremity, and the healthy lower extremity without venous insufficiency.

Among the 35 patients, 14 were female and 21 were male, with a mean age of 46.40 ± 12.18 years. The prevalence of diabetes and arterial hypertension was 17.1% and 11,4%, respectively. Comparative analyses based on CEAP classification revealed that in the CEAP-2 group, Ornithine levels were significantly lower in the Operated Leg group compared to the Control Central group ($p<0.05$). In the CEAP-3 group, Arginine levels were significantly lower in the Operated Leg group compared to the Control Central group ($p<0.05$). In the CEAP-2 group, L-NMMA levels were significantly lower in the Operated Leg group compared to the Control Leg group ($p<0.05$).

At the intersection of risk factors for endothelial dysfunction, methylarginines may be considered critical molecules in explaining the etiopathogenesis of venous insufficiency.

Introduction

Venous insufficiency is a significant clinical condition that greatly affects individuals' quality of life. It is notable for its high prevalence, treatment costs, and substantial loss of labour. NO is a free molecule produced during the conversion of L-arginine to L-citrulline catalyzed by nitric oxide synthase (NOS) in the body. NO is a potent vasodilator and inhibits platelet aggregation, leukocyte migration, cellular adhesion, and vascular smooth muscle proliferation (1).

Arginine residues in proteins are methylated by Protein Arginine Methyltransferases (PRMTs) to form arginine derivatives. The resulting dimethylarginine products include asymmetric dimethylarginine (ADMA), symmetric dimethylarginine (SDMA), and N-monomethyl-L-arginine (L-NMMA). Notably, L-NMMA and ADMA are competitive inhibitors of NOS (2).

Method

Patients diagnosed with chronic venous insufficiency by a cardiovascular surgery specialist (based on patient history, physical examination, and ultrasonography) were classified according to the CEAP classification.

Preoperative blood samples were collected from the varicose vein of the lower extremity with venous insufficiency (Operated Leg group), the venous system of the healthy lower extremity (Control Leg group), and the antecubital vein of the upper extremity (Control Central group). Serum was obtained by centrifuging these blood samples. Levels of ADMA, SDMA, L-NMMA, arginine, citrulline, ornithine, and homoarginine were measured using Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS).

Results

Comparative analyses based on CEAP classification revealed a statistically significant difference in the operated vein diameters ($p<0.05$), with higher values in patients with a CEAP-3. In the CEAP-2 patient group, a statistically significant difference ($p<0.05$) in L-NMMA levels was found between both the Operated Leg group and the Control Leg group, and between the Operated Leg group and the Control Central group, with lower values in the Operated Leg group.

In the CEAP-3 patient group, a statistically significant difference ($p<0.05$) in Arginine levels was observed between the Operated Leg group and the Control Central group, with lower values in the Operated Leg group. A significant difference ($p<0.05$) in Ornithine levels was also found between the Operated Leg group and the Control Central group, with lower values in the Operated Leg group (Table 1).

Discussion

Arginine and ornithine work together in many metabolic pathways. Arginine is a crucial precursor for nitric oxide synthesis, while ornithine is essential for polyamine synthesis and plays a role in cell proliferation. Literature reports have indicated decreased circulating NO levels in patients with venous insufficiency. These decreased NO levels may be due to the inhibition of NOS by dimethylarginine (ADMA-SDMA-L-NMMA). In this study, lower levels of L-arginine and Ornithine were found in the Operated Leg group with venous insufficiency.

Table 1 Comparison of Dimethylarginines According to CEAP Classification

			Operated Leg CEAP		
		General (n=35)	**CEAP-2 (n=18)**	**CEAP-3 (n=17)**	**P [1]**
ADMA (umol/L)	Operated Leg	0,129 ± 0,084	0,150 ± 0,091	0,108 ± 0,072	0,140
	Control Leg	0,157 ± 0,103	0,173 ± 0,096	0,141 ± 0,112	0,437
	Control Central	0,152 ± 0,136	0,183 ± 0,164	0,117 ± 0,087	0,148
	P [2]	0,423	0,780	0,383	
	P [3]	0,350	0,340	0,811	
SDMA (umol/L)	Operated Leg	0,137 ± 0,097	0,156 ± 0,123	0,118 ± 0,056	0,247
	Control Leg	0,151 ± 0,092	0,185 ± 0,100	0,115 ± 0,070	0,051
	Control Central	0,196 ± 0,240	0,226 ± 0,318	0,162 ± 0,100	0,442
	P [2]	0,668	0,596	0,802	
	P [3]	0,186	0,388	0,069	
Citrulline (ng/mL)	Operated Leg	11,3 ± 10,9	13,1 ± 12,6	9,4 ± 8,6	0,317
	Control Leg	10,4 ± 9,6	12,8 ± 10,9	7,8 ± 7,5	0,182
	Control Central	10,6 ± 10,5	11,7 ± 13,1	9,3 ± 6,6	0,514
	P [2]	0,949	0,832	0,660	
	P [3]	0,607	0,568	0,870	
L-Arginine (umol/L)	Operated Leg	185,3 ± 250,9	223,8 ± 320,0	144,5 ± 146,6	0,358
	Control Leg	179,9 ± 139,8	200,1 ± 151,7	158,1 ± 128,1	0,446
	Control Central	279,7 ± 266,3	244,9 ± 185,4	318,8 ± 337,6	0,428
	P [2]	0,515	0,571	0,775	
	P [3]	0,083	0,776	**0,034**	
Homoarginine (ng/mL)	Operated Leg	3,9 ± 3,4	3,4 ± 2,2	4,3 ± 4,3	0,436
	Control Leg	4,2 ± 2,6	5,0 ± 2,6	3,4 ± 2,5	0,122
	Control Central	4,4 ± 2,8	3,6 ± 1,7	5,3 ± 3,5	0,067
	P [2]	0,859	0,212	0,368	
	P [3]	0,364	0,822	0,336	
L-Ornithine (umol/L)	Operated Leg	131,6 ± 149,0	134,4 ± 168,1	128,7 ± 130,8	0,912
	Control Leg	148,6 ± 166,9	212,7 ± 204,9	79,6 ± 70,0	**0,036**
	Control Central	175,7 ± 197,9	178,4 ± 243,6	172,6 ± 137,4	0,933
	P [2]	0,622	0,105	0,071	
	P [3]	**0,027**	0,178	**0,028**	
L-NMMA (umol/L)	Operated Leg	0,067 ± 0,042	0,059 ± 0,034	0,076 ± 0,048	0,229
	Control Leg	0,071 ± 0,026	0,078 ± 0,025	0,064 ± 0,025	0,151
	Control Central	0,094 ± 0,049	0,078 ± 0,038	0,112 ± 0,055	**0,044**
	P [2]	0,721	**0,037**	0,255	
	P [3]	**0,000**	**0,020**	**0,008**	

P [1]: Comparisons between CEAP2 – CEAP3 (Independent Samples t Test (Mean ± SD)),
P [2]: Comparisons between Operated Leg – Control Leg (Paired Samples t Test (Mean±SD)),
P [3]: Comparisons between Operated Leg – Control Central (Paired Samples t Test (Mean±SD)),

ID: 171

Topic:

Cardiology > Percutaneous coronary interventions

Presentation Type:

Oral Presentation

Using Drug-Coated Balloons to Treat Chronic Total Occlusions in De-Novo Coronary Arteries

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BACKGROUND

The adventure of percutaneous coronary intervention (PCI), which started with plain balloon angioplasty, has continued to develop as time progressed. To eliminate the undesirable effects of balloon angioplasty, such as elastic recoil and flow-limiting dissection, bare metal stents were first introduced, and drug-eluting stents (DES) were developed after the high rates of in-stent restenosis (ISR) were observed. Currently, DESs are the first choice recommended for PCI in de-novo lesions (DNL). However, the concept of a drug-coated balloon (DCB) has been introduced to eliminate late stent thrombosis and restenosis, especially in DES. DCBs will both have the same effect as the antiproliferative drugs released in DES and reduce thrombosis and restenosis rates by eliminating the remaining metal burden in DES.

Studies on DCB initially showed that they were successful in ISR and therefore, DCB became a treatment option with a class 1 indication in ISR lesions by the guidelines (1). Especially in recent years, although there have been studies on the use of DCB as an alternative to DES in DNL; studies have not yielded clear results as in ISR lesions (2).

Chronic total occlusions (CTO) constitute approximately 20% of the lesions seen in coronary angiography. Although there are various controversies regarding their treatment, approximately half of these lesions are treated with PCI, preferably with DES stenting. However, it is known that the risk of stent thrombosis and restenosis is high in patients undergoing PCI of CTO (3). Therefore, DCB may be considered as a treatment option in CTO lesions. However, there are only a few studies in the literature so far.

This study aimed to demonstrate the efficacy of DCBs in CTO lesions.

METHODS

Our study was single-center and included 23 patients who were admitted to our center between 01.01.2023 and 01.03.2024 for CTO PCI and underwent control angiography after a mean of 4 months. Inclusion criteria were as follows: having symptoms due to CTO, CTO ischaemic area of more than 8% or PET-CT showing CTO region as viable, DCB application to CTO region, and patients older than 18 years and younger than 90 years were included in the study. As exclusion criteria, patients with in-stent CTO, saphenous graft CTO, combined CTO PCI with both DES and DCB, patients with a life expectancy of less than one year for any reason, and patients with chronic kidney disease requiring dialysis were excluded from the study.

Coronary angiographies were performed on the Siemens Artis Q device. Coronary artery measurements of pre-procedure, post-procedure, and control patients were measured by the quantitative coronary angiography (QCA) method. 10 of the lesions were treated with sirolimus-coated balloon and 13 of the lesions were treated with Paclitaxel-coated balloon. It was aimed to inflate for at least 3 minutes in the ballooning procedure. Before inflation with DCB, the lesion was prepared with various balloons. If hemodynamic deterioration did not occur after inflation, if dissection did not occur, or if Type A-B dissection occurred, the procedure was terminated without stenting. Control angiography was performed after 2 to 12 months and the status of the treated lesion was evaluated.

RESULTS

The median age of the patients included in the study was 54 years (36-70). Demographic and laboratory characteristics of the patients are given in Table 1.

Table 1:

Parameters	
Age (yrs)	**54 (36-70)**
Sex	**Male:20**
	Female:3
eGFR (mL/min/m²)	**86 (57-106)**
Ejection fraction (%)	**48 (25-65)**
Follow-up time (month)	**4 (2-12)**
Values are given as median (min-max).	

The angiographic parameters of the patients seen during the CTO procedure are given in Table 2.

Table 2:

Reference vessel diameter (mm)	**3.2 (1.8-4.3)**
Lesion length (mm)	**36 (16-60)**
DCB diameter (mm)	**3.0 (2.5-4.0)**
Inflation time (sec)	**240 (60-420)**
Values are given as median (min-max).	

Coronary angiography was performed at a median of 4 months (2-12) after inclusion in the study. The comparison of lumen diameters after DCB and control angiography is given in Table 3. As can be seen, no significant lumen loss was observed in DCB-treated CTO lesions compared to the first CAG.

Table 3:

	After DCB treatment	**Control CAG**	**Late lumen gain**	**p**
Diameter (mm)	**2.55 (1.0-3.3)**	**2.75 (0.1-3.51)**	**0.13,34**((±0.04)	**0.58**
*** Values are given as median (min-max).**				

DISCUSSION

The main conclusion of our study is that DCB can be used as an alternative method in the interventional treatment of CTO lesions.

Currently, DES is the main choice for percutaneous treatment of CTO lesions. Although the success of DES in DNL is significantly better, the risk of stent restenosis and stent thrombosis is high after treatment with DES in CTO lesions. This may be due to various reasons such as metal burden in the lesions after ISS treatment, smaller reference vessel diameter compared to the normal vessel diameter (undersized), and stent underexpansion in the presence of calcific lesions in CTO lesion characteristics. DCB may be a reasonable treatment option, especially in terms of eliminating the metal burden and the risk of under-sizing. However, a disadvantage is that the risk of acute and subsequent recoil is not eliminated since stent implantation is not performed.

DCBs are formed by coating various antiproliferative drugs (paclitaxel, sirolimus, etc.) on a lipophilic matrix and provide a homogenous drug distribution when applied to the lesion. Although there are not many studies, there are a few studies in the literature on the application of DCB to CTO lesions. In one study, DCB therapy was applied to CTO lesions in 34 patients, and satisfactory recanalization was achieved in 79.4% of the patients. In the follow-

up of these patients, restenosis was observed in only 1 patient and occlusion in 1 patient. From a symptomatic point of view, a significant reduction in CCS angina class was observed in patients (4). In another study, 44 CTO lesions with J-CTO 2 and above were treated with DCB. At 1-year follow-up, target lesion revascularisation was observed in 3 cases and target vessel revascularisation in 1 case. The overall MACE rate was 9.8%(5). In our study, recoil developed in 2 patients (8.69%) in the follow-up of 23 CTO patients who underwent only DCB treatment. Both of these patients had received sirolimus-eluting DCB.

The limitations of our study include the fact that it was a single-center study, the number of patients was small, and no imaging method such as intravascular ultrasound or optical coherence tomography was used for better evaluation of vessel diameter in CTO PCI procedure and control angiographies.

CONCLUSIONS

In conclusion, DCBs may be considered as an alternative treatment modality to DES in CTO lesions. We believe that studies with a higher number of patients should be conducted on this subject.

Keywords: Drug-Coated-BalloonChronic Total Occlusionquantitative coronary angiographyDe-Novo Lesions

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Poster Session

ID: 4

Topic:

Cardiovascular Surgery > Coronary artery disease - CABG surgery

Presentation Type:

Poster

THE RESULTS OF SURGICAL REVASCULARIZATION IN PATIENTS WITH MULTI-VESSEL CORONARY DISEASE

MD Oybek Mashrapov* , MD Abdusalom Abdurakhmanov , MD Mustafa Obeid , MD Ilkhom Abdukhalimov , MD Nodir Rakhimov , MD Farhod Mamataliev

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The results of surgical revascularization in patients with multi-vessel coronary disease.

Multi-vessel coronary artery disease, which is characterized by the defeat of two or more of the coronary arteries, in recent years has become increasingly common, and according to various estimates from 30 to 60 % in the structure of morbidity of coronary heart disease (CHD). Surgical revascularization in patients with multi-vessel coronary artery disease still raises many questions. The aim of the study was to analyze the results of off pump CABG in patients with multivessel coronary disease.

Material and Methods. This retrospective study analyzed 90 patients with history of coronary artery disease who underwent CABG surgery in 2023 at the Republican Research Center for Emergency Medicine. The average age of the patients was 56, 04 ± 0, 9 years. Women were 23.3 % and men - 76.7 %. The duration of the disease up to 1 year were 26.7 % of patients and 83.3 % of patients had a disease duration greater than one year. The majority of patients were diagnosed with unstable coronary artery disease (94.4 %); 5.6 % of patients underwent surgery based on emergency indications or with acute myocardial infarction. Shunting index was 3.1. Only 8 (8.9 %) patients were operated with cardiopulmonary bypass; the remaining 82 (91.1 %) patients were operated using OPCAB technology. In 39 (43.3 %) cases, the left internal thoracic artery was used in grafting to the left anterior descending artery, and in one case, bimammar bypass with the left and right internal thoracic artery were performed.

Results. We evaluated the immediate results of hospital stay: 30-day hospital mortality, postoperative complications and outcomes at 1 year follow-up.

Hospital mortality was 3.3% (3/90). The cause of mortality in all three cases was acute heart failure - 3, due to the initial severity of the disease, all these patients were underwent surgery with cardiopulmonary bypass.

Postoperative complications were observed in 9 (10%) patients. Among non-fatal complications, prevailing complications associated with post-operative wound healing what

was observed in 4 (4.4%) patients. Postoperative bleeding in the early postoperative period was diagnosed in 2 (2.2%) patients.

Cardiac complications (heart failure requiring long-term support cardio tonic) was observed in 2 (2.2%) cases. In one case (1.1%) in patients with acute stroke in history, operation under heart-lung machine provoked worsening of clinical signs. The duration of stay of patients in the ICU after surgery was 2,4 ± 0,5. Duration of postoperative period was 7.8 ± 0.9 days. Operated patients improved exercise tolerance, all patients after surgery were in the second class of NYHA functional classification.

ID: 5

Topic:

Cardiovascular Surgery > Other

Presentation Type:

Poster

THE RECONSTRUCTION RESULTS OF THE LEFT VENTRICLE ANEURYSMS

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Aneurysm resection and simple linear grafting is a well-known routine method for the correction of post-infarction left ventricular aneurysm. The purpose of this study was to assess the immediate and long-term results of surgical treatment of LV aneurysm.

MATERIAL AND METHODS:

A retrospective study analyzed 20 patients who have been on surgery during the period from 2019 to 2023 at the Republican Research Center for Emergency Medicine. Patients are divided into two groups including 16 male, 4 female patients. The average age of the patients was 56 ± 2.2 years. The average EF was 35.3 ± 1.46% (28–40%). Linear plasty of LV aneurysms with simultaneous shunting of 2-3 coronary arteries was performed in all acses.

Results:

During the short-term period, mortality and postoperative complications were not observed, all patients was needed inotropic support within 24 hours. The duration of follow-up in the long-term period averaged 18 ± 0.75 months (2–24 months). The average cumulative survival rate was 100%. The ejection fraction gradually increased to 38.8 ± 1.6%.

CONCLUSION:

Postinfarction LV aneurysm can be corrected with satisfactory immediate and long-term results.

ID: 7

Topic:

Cardiovascular Surgery > Ascending Aorta Surgery

Presentation Type:

Poster

Analysis Intraoperative Aortic Dissection Complicating Elective Off-pump Coronary Artery Bypass Surgery

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Abstract

AIM: We conducted this study to identify current trends and risk factors for iatrogenic dissection.

METHODS

From December 2020 to November 2023 in Republican Research Center for Emergency Medicine 711 patients (mean age 54+⁄-2,3 years old) were operated electively. Off-pump coronary artery bypass grafting procedures was performed in all cases. Patients' preoperative risk factors, and operative and postoperative courses were analysed from the hospital records retrospectively.

RESULTS

Of the 711 patients who had off-pump coronary artery bypass, 2 (0.28%) developed iatrogenic intraoperative aortic dissection. Patients with the iatrogenic aortic dissection were in older age group (62 and 68 years old). Both patients had dissection extending beyond the aortic arch. IAAD was identified after removing the side clamp from the aorta in both patients, however the intimal tear was located on the site of proximal anastomosis. Preoperatively, 2 (100%) patients had arterial hypertension and ascending aorta atherosclerosis. No other significant risk factors could be identified. One patient died due to intraoperative complete aortic rupture. In another case the dissected segment was replaced with a graft and proximal anastomoses were reimplanted in it under the hypothermic circulatory arrest. This patient required inotropic and respiratory support postoperatively. Mortality rate was 100%, second patient died due to respiratory distress on 10th postoperative day.

CONCLUSIONS

Intraoperative aortic dissection is an unpredictable and often fatal complication of cardiac surgery. Regarding to our data overall incidence of iatrogenic type A aortic dissections was 0,28%. Increased age, high blood pressure and atheromatous disease of the ascending aorta could be significant risk factors for iatrogenic dissection in our series. Surgical interventions

for iatrogenic aortic dissections require further improvement of surgical techniques and perioperative management.

ID: 8

Topic:

Cardiovascular Surgery > Coronary bypass surgery

Presentation Type:

Poster

Analysis of coronary shunting with the use of both internal thoracic arteries.

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Objective: The goal is to compare the results of coronary artery bypass grafting (CABG) in patients with IHD using one and both internal thoracic arteries.

Materials and methods: The study included 23 patients who underwent surgery in the cardiosurgery department from October 2019 to December 2023 at the Republican Scientific Center for Emergency Medical Care. These patients were divided into 2 groups: the first group consisted of 15 patients who underwent coronary bypass with the use of the left internal thoracic artery and autovens, the second group - 8 patients with CABG using both internal thoracic arteries for myocardial revascularization. The age of the patients ranged from 47 to 66 years (the average value was 55 years). In both groups, all patients were male. In the first group, 4 patients had stable angina, the remaining 11 patients had unstable angina. An infarct in the anamnesis was revealed in 6 patients, arterial hypertension in 8 patients and 2 patients had type II diabetes mellitus. In the second group, all patients had unstable angina. Postinfarction cardiosclerosis was also detected in all patients. When coronary angiography revealed: 3x vascular lesion - in 8 cases, stenosis of the left coronary artery trunk with lesion of the right coronary artery - in 5 cases (the first group). In the second group, the distribution was as follows: 3 vascular lesions in 5 patients and 3 patients had a stem lesion. In the postoperative period, the presence or absence of symptoms of angina pectoris, drainage loss, mortality, development of myocardial infarction, postoperative wound healing, ECG data, echocardiography, and revascularization index were evaluated as follows.

Results: In the early postoperative period, acute myocardial infarction, age-related angina and fatal outcome were not observed in any case. The amount discharged from the drains after the operation averaged 280 ± 15 ml and 305 ± 23 ml in the first and second groups, respectively. It should be noted that in the first and second groups, healing of postoperative wounds was primary. Improvement of coronary circulation according to ECG data was noted in 7 (30.4%) patients of the first group and 4 (17.4%) patients of the second group. In the remaining patients no dynamics were observed. Before and after the operation, the ejection fraction according to EchoCG data was 35% and 45.7% (1 group), 39.6% and 46.5% (group 2). Accordingly, the revascularization index was 2.78 in the first group of patients and 2.2 in the second group, respectively

Conclusion: A comparative analysis of the immediate results of bimammary coronary bypass using one internal thoracic artery as a conduit showed a difference only in drainage losses.

ID: 10

Topic:

Cardiovascular Surgery > Other

Presentation Type:

Poster

Cardiolpegic Solution: Traditional or Modified

MD Saurav Sengupta*
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Cardiolpegic Solution: Traditional or Modified

Saurav Sengupta, Health World Hospital, Durgapur

Objective: During CPB hearts are particularly vulnerable to ischemia-reperfusion

injury. In adult cardiac surgery and especially minimally invasive valve surgery require

uniformity. Whereas longer aortic cross-clamp and bypass times increased

myocardial protection hammer. Our objective was to determine that our cardiopledia

soluation (mCP) which has a different chemical composition than traditional

cardioplegia(tCP) and requires less frequent dosing with safe and operative

advantages included cost effective. Methods: All patients of 2017 - 2023 with a body surface area of ~ 1.0m

2 -1.5 m

2

undergoing first-time, cardiac surgery were randomized to either the tCP or the mCP

group. We retrospectively reviewed the patients and all surgeries were performed by

the same surgeon. All data included- cross-clamp time, cardiopulmonary bypass

time (CPB), number of defibrillations needed for return of circulation, post-surgical

hospital length of stay, and post-operative events. Techniques & Composition will be discussed. Result: 480 patients were included in our study with 88 patients in each group. The

groups were well matched for age, BSA (1.0m

2 -1.5 m

2) and gender. Patient

characteristics and operative parameters were equal for patients in both groups. Patients in the mCP group required significantly lower total volume & Lower

Numbers of cardioplegia. Some of significantly fewer defibrillations required in the

tCP Group. But there were no differences in cross-clamp time, bypass time, postoperative complication rate, or patient outcomes between groups. Conclusions: mCP are to be equally as safe as tCP and may confer increased

myocardial protection through less need for defibrillation. mCP cardioplegia use in

an adult, ,solution requires less K+ concentration and volumes, in order to achieve adequate myocardial protection.

ID: 17

Topic:

Cardiovascular Surgery > Other

Presentation Type:

Poster

Right ventricular lead perforation following defibrillator implantation: a case report

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uvcd,tkdcd

Background: Perforation of a device lead through the myocardium is a recognized complication of cardiac device implantation. The associated morbidity and mortality are significant, even though it is a relatively rare complication. Therefore, it is vital for acute clinicians to be aware of the diagnosis and subsequent management of myocardial perforation.

Case summary:

A 47-year-old woman was admitted to the cardiology department due to sudden loss of consciousness during ventricular arrhythmias documented by the first aid staff. She was successfully resuscitated. After exclusion of acute ischemia and metabolic disorders, she underwent a coronary angiography by cardiology departments. Evaluation revealed no pathology in the coronary arteries. The ejection fraction of the left ventricle was 58%. The patient was not taking medication at the time of presentation to the emergency department. She has never smoked.

A single-chamber implantable cardioverter defibrillator (ICD) (Biotronic, USA) Epic + VR with endocardial passive stabilization defibrillation lead (Biotronic, USA) was implanted by the cardiology department. The tip of the lead was positioned near the apex of the right ventricle.

The patıent was dıscharged due to stable follow-up. on the 5th day of dıscharge, he was admıtted to cardıology wıth the symptom of chest paın. The patıent's echocardıogram showed that the ICD was ıneffectıve. No other problems were detected.

Physical examination findings performed by us were normal. Echocardıography showed no effusıon. A computed tomography scan was performed to make a diagnosis. The ICD lead position was not commented on in the initial CT report . Implantable cardioverter-defibrillator interrogation revealed no shocks and that the lead was failing to sense appropriately. When the cardıology scope sees a tomography that the ICD lead has perforated the ventricle, our party is consulted.

The patient was operated under general anesthesia. When the pericardium was opened, a small amount of hemorrhagic fluid was observed. The lead was retracted 5 cm outward from the right ventricular apex under sternotomy guidance. ICD leads was implanted into the septum by cardiology in the same session. The defect in the right ventricular apex was sutured with 5/0 prolen suture. The patient was awakened and admitted to the intensive care unit for follow-up. After 3 days, the patient was fully recovered and discharged home. She has completed two follow-up visits in the outpatient department.

Discussion: This case highlights the importance of clinical suspicion and the use of diagnostic Computerized tomography as an important diagnostic tool in symptomatic patient's post-cardiac device implantation.

ID: 18

Topic:

Cardiovascular Surgery > Other

Presentation Type:

Poster

Role Of Potassium Channels In Anti-Vasoconstriction Effects Of Pinacidil On Vein Bypass Grafts Obtained From Patients With Type-2 Diabetes Mellitus

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BACKGROUND: The prevalence of type-2 diabetes mellitus (T2DM) among patients that require coronary artery bypass graft (CABG) surgery raised over the years. At the same time, it is well known that diabetic blood vessels has increased contractility. This could be result of different circulating vasoconstrictor substances, due to impaired function of endothelium or altered function of smooth muscle potassium (K) channels. The objective of our study was to investigate the anti-vasoconstriction potential of pinacidil on human saphenous veins (HSV) obtained from patients with T2DM and to detect the involvement of ATP-sensitive K (K_{ATP}) channels, voltage-gated K (Kv) and Ca-sensitive K (K_{Ca}) channels in these pinacidil effects.

METHODS: Rings of HSV obtained from patients during bypass surgery, without endothelium, were mounted in organ bath system and isotonic contraction was being elicited by electric stimuli (ES, 30 Hz, 2s) and by noradrenaline (NOR, 10 μM). Pinacidil, K_{ATP} channels opener, was applied in increased concentrations from 0.01 to100 μM on HSV. The role of K channels in pinacidil effects were examined by application of different blockers.

RESULTS: Pinacidil inhibit contractions on HSV from T2DM patients produced by electrical stimulation (pD_2=6.27±0.11; n=18) and NOR (pD_2=4.92±0.31; n=7) in dose-dependent manner. Pinacidil effect on contractions produced by electrical stimulation were statistically significant inhibit by glibenclamide (GLB, 10μM; pD_2=4.77±0.26, n=6, $p<0.01$), selective blocker of K_{ATP} channels. 4-aminopiridine (4-AP, 1mM; pD_2=6.38±0.09, n=6, $p>0.05$), non-selective blocker of Kv channels, and tetraetilamonium (TEA, 1mM; pD_2=5.86±0.35, n=6, $p>0.05$), non-specific blocker of K_{Ca} channels did not antagonize pinacidil effects on HSV from T2DM patients.

CONCLUSIONS: Pinacidil shows anti-vasocontriction effects on HSV obtained from T2DM patients. This effect of pinacidil is produced by interaction with K_{ATP} channels on smooth muscle cells of HSV from T2DM patients.

Keyword: *potassium channels, human saphenous vein, type-2 diabetes mellitus, pinacidil, bypass grafts*

ID: 48

Topic:

Cardiovascular Surgery > Adult congenital heart disease

Presentation Type:

Poster

Supraventricular arrhythmias in patients with valvular heart disease

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Supraventricular arrhythmias increase the burden of cardiovascular disease in the adult population. One of the reasons for the development of this group of arrhythmias is valvular pathologies, leading to disruption of intraatrial hemodynamics. Improvement of diagnostic methods contributes to an increase in the detection of such changes, and, as a result, increases the importance of the issue of the relationship between the risk of arrhythmia and morphofunctional changes in the valves.

The aim. To study the prevalence of supraventricular arrhythmias in patients with valvular pathology, as well as the relationship between cardiac arrhythmias and the type and severity of damage to the valvular apparatus.

Methods. A study was conducted in the form of an analysis of the occurrence of various types of supraventricular arrhythmias (atrial flutter and fibrillation, sustained and unsustained supraventricular tachycardia) in patients with valvular pathology from the cardiology department of a multidisciplinary hospital for the period from 2015 to 2021 (Moscow, Russia). The study included patients who were diagnosed with moderate to severe lesions of the mitral and tricuspid valves, leading to certain disturbances of intracardiac hemodynamics. The average age of patients at the time of inclusion in the study was 61.4±4.6 years.

Results. Among 4820 patients (women/men 2606/2414), moderate to severe mitral and triscupid valve stenosis and insufficiency were detected in 915 patients (18.9%, women/men 542/373). In 164 adults with valve pathology, supraventricular arrhythmias were recorded upon inclusion in the study: atrial fibrillation 85 (52%), atrial flutter – 57 (35%), unstable paroxysms of supraventricular tachycardia (5 or more complexes) – 22 (13%). Supraventricular arrhythmia was more often recorded in patients with mitral valve disease (64% vs. 36%, $p<0.05$).

Conclusion. Significant supraventricular arrhythmias occurred in 19% of patients with acquired lesions of the mitral and tricuspid valves. The prevalence of atrial fibrillation and atrial flutter was noted with a 17% risk of developing arrhythmia in this category of patients, which must be taken into account when selecting treatment and prevention.

Keyword: *Supraventricular arrhythmias, valvular heart disease*

ID: 53

Topic:

Cardiovascular Surgery > Cardiac Tumors

Presentation Type:

Poster

An Enormous Angiosarcoma at the Right Atrium of the Heart, With an Impressive Outcome

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Gazi Üniversitesi Hastanesi, Kalp ve Damar Cerrahisi A.D

OBJECTIVES

Angiosarcomas of the heart are extremely rare tumors, and they tent to place at the right atrium. Echocardiogram, computed tomography, magnetic resonance imaging are imaging techniques to detect and consider precisely. Surgery is the cornerstone of therapy modality, but it can be supplied by chemotherapy and radiotherapy. Survival and outcomes of the sarcomas of the heart are unfortunately poor.

METHODS

There is only one patient in our study, because, it is a case report. Our study is about a huge sized angiosarcoma. Surgical excision has been accomplished, then chemotherapy procedure has been applied consecutively.

RESULTS

A 57 year old female patient had been admitted to hospital with chest pain. Cardiology department detected the mass belongs to the right atrial chamber through echocardiography. Then they refered the patient to our department during cardiac team meeting. Afterwards, we had approved the patient and operation had been planned via minimal invasive technique. Also, cardiopulmonary by-pass has utilized. We have managed both surgery and oncologic procedures well. The tumor has been excised as R1 resection and chemotherapy has been applied. Thus, the patient is still alive 21 months after the surgery. Our aim is to share our successful experiments and contribute to the literature.

CONCLUSIONS

In conclusion, angiosarcomas of the heart are still required to be investigated. Literature on this current topic should be expanded. Angiosarcomas of the heart have pathetic outcomes. Surgery is cornerstone therapy, but not only therapy choice. Furthermore, our study claims that multiplied treatment of the angiosarcoma of the heart is more beneficial than solely surgery. Expanding life span of these patients is possible as supplying surgery with radiotherapy and chemotherapy modalities. Thus, our study is a comprehensive case in order to contribute to the literature.

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Keyword: *Heart Neoplasms, Neoplasm, Residual, Hemangiosarcoma, Sarcoma, Doxorubicin*

ID: 56

Topic:

Cardiovascular Surgery > Congenital heart surgery

Presentation Type:

Poster

Congenital Left Atrial Appendage Aneurysm and Surgical Repair

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Kartal Koşuyolu High Specialization Training and Research Hospital

INTRODUCTION

Left atrial appendage aneurysm is a rare pathology. Early intervention is necessary upon detection, as it can lead to arrhythmias or thrombus formation in the patient. Patients are asymptomatic most of the time and this pathology is typically detected incidentally. In symptomatic cases, non-specific complaints such as palpitations, shortness of breath, and chest pain may be observed. In this article, we aim to present the congenital left atrial appendage aneurysm detected in an asymptomatic 7-year-old girl and its surgical treatment.

CASE REPORT

The 7-year-old asymptomatic girl was referred to the cardiology clinic after an enlarged heart appearance was detected on a chest X-ray. Physical examination revealed no cardiac murmurs or abnormal cardiovascular findings. The ECG showed a normal sinus rhythm. On the chest X-ray, there was an accentuation on the left side of the heart shadow. Echocardiographic examination revealed a left atrial aneurysm measuring 7x4x4cm. No other cardiac pathology was detected. The patient underwent surgery through median sternotomy. No defect was observed on the pericardium. The left atrial appendage aneurysm was explored without the need for cardiopulmonary bypass. A clamp was placed over the neck of the aneurysm. It was sutured using a continuous stitching technique beneath the clamp. The left atrial appendage aneurysm was excised. No thrombus was observed inside the aneurysm. The patient was extubated on the operating table and taken to the intensive care unit for monitoring. On the first postoperative day, the patient was transferred to the ward. No complication was detected in and she was discharged with recovery on the 4th postoperative day.

DISCUSSION

Congenital left atrial appendage aneurysms are typically detected incidentally, often leads to non-specific complaints such as palpitations and shortness of breath, starting in the 20s. Untreated aneurysms can lead to atrial fibrillation, supraventricular tachycardia, and related thromboembolic events. Even without arrhythmia, they can serve as a source of thromboembolism. Therefore, immediate surgical repair is recommended. Surgical approach, especially with cardiopulmonary bypass, is considered safer for aneurysms containing thrombus or those with a wide neck connecting to the left atrium. However, aneurysms with

a narrow neck can be operated on without cardiopulmonary bypass. An approach to the left atrium through left thoracotomy is also possible. We did not use CPB support during the operation. We extubated the patient on the operating table after surgery and discharged her in good health on postoperative day 4. In conclusion, left atrial appendage aneurysms can cause arrhythmias or serve as a source of thromboembolism. For this reason, patients should be operated as soon as possible after detection, even if they are asymptomatic.

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Keyword: *atrial appendage aneurysm, left atrium*

ID: 64

Topic:

Cardiovascular Surgery > Surgical treatment of AF

Presentation Type:

Poster

Short – And Longterm Results Of Different Types Of Surgical Treatment In Concomitant Paroxysmal Atrial Fibrillation During Coronary Artery Bypass Grafting

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BACKGROUND. Atrial fibrillation (AF) is considered one of the most frequent arrhythmias that occurs after direct myocardial revascularization (CABG). The choice of treatment for concomitant paroxysmal AF in patients undergoing CABG is vital. **Aim**: to compare the safety and effectiveness of bipolar RFA PV and Cox Maze V procedure for concomitant paroxysmal AF during CABG.

METHODS. The study includes 139 patients. Inclusion criteria: CAD and paroxysmal AF.Exclusion criteria: non-paroxysmal AF, urgent surgery, concomitant VHD, decompensation of chronic diseases, malignancy. PSM analysis matched RFA PV with Cox-Maze V in 30 patients. Outcomes assessed: AF/AFL recurrence, sinus rhythm, pacemaker implantation, MACCE, and secondary endpoints. Procedures were performed pre-CABG without aortic cross-clamping using parallel perfusion. First step was bipolar PV ablation. The bottom and roof lines of Box Lesions were created by bipolar clamp via a purse string incision in RSPB and RIPV, respectively. RA ablation included bipolar lines to VCI, RAA, cavotricuspid isthmus ablation. In every case the LAA was isolated (by ligation or occluded by surgical endostapler).

RESULTS. Group 2 (CABG+ Cox Maze V) differed from group 1 (CABG+RFA PV) in the operation time (330 vs 255 min, p=0,0001), CPB time (131 vs 89 min, p=0,0001), time of ablation (53 vs 10 min, p=0,0001). The type and frequency of complications were statistically comparable. Significantly lower rates of AF/AFL recurrence were observed in group II (13,3% vs 33,3%, p=0,044). Sinus rhythm was restored in all cases. Incidence of transient (less than 7 days) sinus dysfunction was 6,7% and 16,6% (p=0,128), in groups 1 and 2, respectively. In 12 months, cumulative freedom from AF/AFL/AAT without AAMT was reliably higher in II group comparing with I group: 97% vs 83,5% (p=0,020). Freedom from MACCE was 96,7% in both groups.

CONCLUSION. Cox Maze V procedure in concomitant paroxysmal AF, increased the CPB time and operation time, but generally, didn't negatively impact the postoperative period and showed safety of the technique. On the other hand, simultaneous CABG with Cox Maze V procedure significantly reduced the incidence of arrhythmia recurrence comparing with RFA PV both at in-hospital and medium-long term follow up, that makes it a reasonable option for patients with paroxysmal AF and a high risk of POAF

Keyword: *Cox Maze V, RFA PV, CABG, paroxysmal AF, Box Lesions*

ID: 66

Topic:

Cardiovascular Surgery > Surgical treatment of AF

Presentation Type:

Poster

Predictors Of Recurrence Of Paroxysmal AF After Concomitant RFA PV In CABG

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BACKGROUND. Bipolar pulmonary veins radiofrequency ablation (RFA PV) is one of the most common surgical treatments of paroxysmal AF in patients undergoing CABG. Thus, it is relevant to identify a specific group of patients who is destined to have POAF after RFA PV and who will benefit from more advanced procedure.

METHODS. A retrospective assessment of the treatment results of 71 patients with coronary heart disease and paroxysmal atrial fibrillation (AF) was conducted. Exclusion criteria: emergency CABG surgery, heart valve disease, left ventricle aneurysm. Patients undergo standard on-pump CABG. PV RFA was performed with a bipolar clamp without aortic cross-clamping using parallel perfusion. Patients were divided into 2 groups - AF recurrence (group I, n=23) and absence of AF (group II, n=48). Baseline characteristics analysis showed that patients in group I were older than in group II (p=0.005). Also, patients in I group commonly had a BMI> 30 kg / m2 - 12 (52.2%) and 9 (18.8%), p = 0.006 and impaired glucose tolerance - 9 (39.1%) and 7 (14, 6%), p=0.034. AF/AFl history analysis showed that more patients had AF paroxysm at the time of the admission in group I - 9 (39.1%) and 6 in the II group (12.5%), p=0.02. There were no differences in coronary arteries lesions.
RESULTS. There were no significant differences in intraoperative (time of surgery, cross-clamping time, CPB-time) and postoperative (ventilation time, ICU-stay) parameters. According to the results of one-way regression analysis, the most significant predictors of AF recurrence and ablation failure were age over 60 years (RR-1.49; 95% CI 1.12-1.99), impaired glucose tolerance (RR-2.68; 95% CI1, 14-6.3), BMI>30 kg/m (RR-2.78; 95% CI 1.37-5.64), LA enlargement (RR- 1.21; 95% CI 1.02-1.43), AF paroxysm at the time of admission (RR-3.13; 95% CI 1.27-7.74). The multivariate analysis confirmed the significance of the “age over 60 years” parameter (p=0.046).

CONCLUSIONS. Certain factors consideration in every case solves the problem of predicting AF recurrence after CABG and helps to choose the optimal surgical treatment of AF

Keyword: *surgical treatment of AF, Bipolar pulmonary veins radiofrequency ablation, paroxysmal AF, CABG*

ID: 89

Topic:

Cardiovascular Surgery > Cardiac Tumors

Presentation Type:

Poster

Recurrent Undifferentiated Pleomorphic Sarcoma in the Left Atrium

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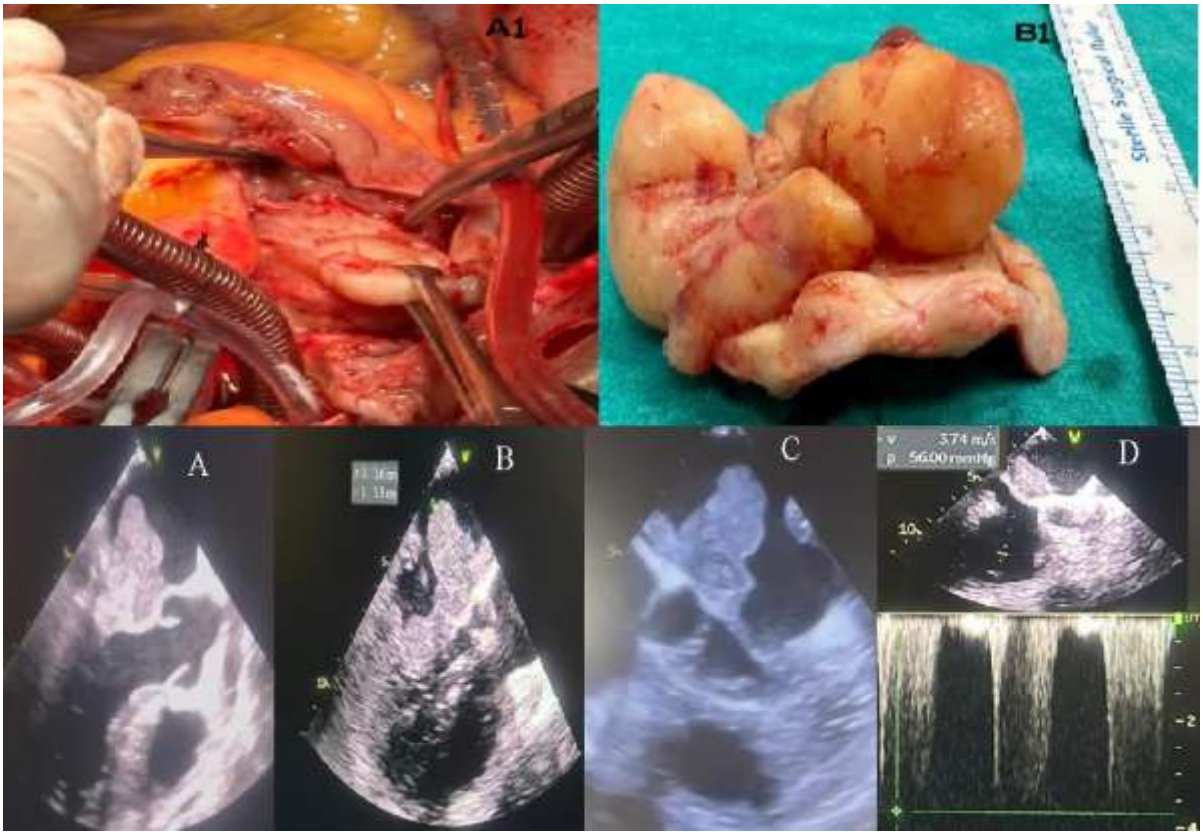

Primary cardiac tumors are very rare (0.001-0.03%). Most are benign. However, 25% of them are malignant, most ofwhich are sarcomas. Among sarcomas, the most common is angiosarcoma, followed by undifferentiated pleomorphic sarcoma (UPS). UPS, which is aggressive and has a poor prognosis, is extremely rare (1-3).

Case: A 51-year-old male patient applied with complaints of cough and fatigue that started recently. Echocardiography revealed a mass measuring 36*53 mm in the left atrial side wall extending to the posterior wall and posterior mitral valve. The mass was causing mitral insufficiency and stenosis with an average gradient of 25 mm-Hg. The multinodular mass extending into the atrium resembled a sarcoma rather than a myxoma. The interatrial septum, left atrial posterior wall, and mitral valve were surgically removed. The septum and posterior wall were repaired with bovine pericardium, and metallic mitral valve replacement was

performed. The patient was discharged without any problems on the 7th day after surgery. Pathology revealed undifferentiated pleomorphic sarcoma with a Ki67 index of 11%. The patient was referred to oncology for chemotherapy.

The patient was admitted to the cardiology service again approximately 10 months later due to recurrent mitral valve stenosis. He was taken into emergency surgery due to established cardiogenic shock. The surgery started with cardiopulmonary resuscitation. A tumor mass with a diameter of 35 mm was observed extending from the mitral posterior annular region (P2-3) to the pericardium and the repaired septum. The mass was preventing the metallic mitral valve from opening. The mass was excised (consistent with the initial pathology diagnosis) and valve function returned to normal. There was no valve regurgitation or stenosis at the time of surgery (mitral gradient 40/28 before surgery, 8/1.8 mm-Hg after surgery). After discharge, the patient was referred back to medical oncology for chemotherapy. He remained symptom-free during the 4-month follow-up period.

As a result, the diagnosis of primary cardiac tumors is often delayed due to their asymptomatic nature and nonspecific laboratory tests. Most patients face a poor prognosis due to widespread involvement, making complete resection difficult. The impact of surgery, chemotherapy, and radiotherapy on life expectancy is not well defined in studies. Therefore, as soon as the diagnosis is confirmed, immediate extensive surgical resection followed by chemotherapy is recommended.

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ID: 98

Topic:

Cardiovascular Surgery > Other

Presentation Type:

Poster

A Rare Case of Cardiac Hydatid Cyst Located In The Interventricular Septum Connected To The Left Ventricle

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Introduction: Cyst hydatid, caused by Echinococcus granulosus, is one of the most common parasitic disease that can affect various organs, mostly liver and lungs. Cardiac echinococcosis is only less than 2% of all hydatidosis cases. This case report aims to present a patient diagnosed with recurrent cardiac cyst hydatid, diagnostic modalities employed, and the surgical approach undertaken for successful management.

Case: A 40-year-old male patient was previously operated on another center due to a mass in the left ventricle, with the preliminary diagnosis of myxoma. However, as a result of pathological and serological tests, it was understood that the mass was a hydatid cyst. The patient was started on Albendazole treatment and upon detecting the recurrence of an intracardiac mass, referred to our clinic for further management. The transthoracic echocardiography revealed a cystic structure measuring 26x13mm within the septum, and a mobile mass measuring 17x10mm within the left ventricle, which is associated with this cyst. After the diagnosis is confirmed by MRI, a decision has been made to perform surgery due to intracardiac cyst hydatid.

In the operation, it was observed that the mobile mass within the left ventricle consisted of the germinal layer of a ruptured cyst and organized thrombus tissue surrounding it through aortotomy. This organized tissue was excised. Then, a right ventriculotomy was performed at the apex of the right ventricle, near the projection of the interventricular septum, where the cyst was palpated. The cyst was opened, and vesicles and fragments of the germinal layer, which were thought to be non-viable, were removed from inside of the cyst. In this area, a defect measuring 5x5 mm on the interventricular septum was detected, presumed to be related to the left ventricle. It was observed that the region where the germinal layer was removed from the left ventricle corresponded to the opening of the cyst into the left ventricle through this defect. This defect was repaired and the surgery was terminated.

Discussion: Cardiac involvement is a rare presentation of echinococcosis, especially in the interventricular septum. Additionally, there is no data regarding the cyst rupturing and creating a defect in the septum. We think that this defect occurred during the removal of the mass in the left ventricle in the first surgery. In conclusion, in the presence of intracardiac atypical masses, the diagnosis of hydatid cyst, which is not very rare in our country, should be considered.

Keyword: *Cyst hydatid, Echinococcus granulosus, interventricular septum*

ID: 104

Topic:

Cardiovascular Surgery > Minimally invasive CABG

Presentation Type:

Poster

MINIMALLY INVASIVE SURGICAL APPROACH IN THE TREATMENT OF CORONARY ARTERY PATHOLOGY

MD Pavel Myalyuk* , MD Andrey Marchenko , MD Alexey Shestakov , MD Alexey Petrischev , MD Vyacheslav Belov

Federal center of cardiovascular surgery n.a. S.G. Suchanov, Perm, Russian Federation

Objective

To study and analyze intraoperative, short-term results of treatment of patients with ischemic heart disease using minimally invasive surgery.

Methods

The results of 243 patients who underwent coronary bypass surgery through left-sided minithoracotomy were analyzed on in FCCVS n.a. S.G. Sukhanov. There were 190 patients underwent MIDCAB and 53 patients - MICSCAB.

In the group of patients who underwent MIDCAB, the mean age of patients was 59±4.3 years, with a maximum patient age of 75 years, male to female ratio was 4:1, diabetes mellitus occurred in 10% of patients.

In the MICSCAB group, the mean age of patients was 58±3.7 years, with a maximum patient age of 69 years, males 91%, diabetes mellitus occurred in 4% of patients.

Patients in both groups were accessed through a left-sided minithoracotomy in the IV-V intercostal space, all patients were operated "Off Pump" technique and distal anastomoses were made using the myocardial stabilizer.

Results

There was no mortality at hospitalization period and in the short-term follow-up period in both study groups. Mean operative time in MIDCAB was 127 minutes, in the group after MICSCAB mean operative time was 196 minutes. One patient underwent emergency revascularization from sternotomy against the background of developed myocardial infarction. The hospitalization period in patients of both groups averaged 9.3±2.1 days, that's 4.2±2.3 days less than the average duration of hospitalization in patients who underwent standard sternotomy. The minimum hospitalization period was 7 days.

Conclusions

Treatment of patients with ischemic heart disease with minimally invasive intervention is not inferior to surgical technique with complete sternotomy, and according to the results of postoperative and short-term follow-up it is even superior in terms of recovery time.

Keyword: *MIDCAB, MICSCAB*

ID: 110

Topic:

Cardiovascular Surgery > Surgical treatment of AF

Presentation Type:

Poster

Results of thoracoscopic radiofrequency ablation of the left atrium in patients with atrial fibrillation

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Objective. to evaluate the immediate results of thoracoscopic ablation of the left atrium with resection of the left atrium appendage in patients with various forms of atrial fibrillation.

Material and methods. The prospective study included 302 patients who underwent thoracoscopic radiofrequency ablation of the left atrium in 2018-2023. Patients were divided into 3 groups depending on the form of AF: group I – 51 (16.9%) patients with paroxysmal form, group II – 101 (33.4%) - with persistent form, group III – 150 (49.7%) - with long-term persistent form. The groups are statistically comparable in terms of basic introductory characteristics.

Results. The duration of the operation in group I was 85 [73-95] minutes, in group II - 100 [85-115] minutes, in III - 100 [80-135] minutes. Among the 302 completed operations, 2 conversions occurred (1.0%). Left atrium appendage resection was performed using an endo–stapler in 100% of patients in group I, in 99% - in group II and 99.3% (149 out of 150) – in group III. The patient's stay in intensive care in all groups was 1 [1-1] days. There was no statistically significant difference in the postoperative bed-day between the groups. Sinus rhythm at discharge was observed in 96.1% of patients in-group I, 96% in group II and 90% in group III. Cardiac arrhythmias at discharge where noted in 7%, while 5.0% patients were discharged with AF. The complicated postoperative period was observed in 3.9% of patients in group I, 1% in group II, and 6.7% in group III. There was no mortality after the operation.

Conclusion. Thoracoscopic radiofrequency ablation of the left atrium is an effective method of treating atrial fibrillation, which has good immediate results, is accompanied by a low level of complications and no mortality.

Keyword: *atrial fibrillation, thoracoscopic maze*

ID: 121

Topic:

Cardiovascular Surgery > Hybrid cardiovascular surgery

Presentation Type:

Poster

Left ventricular true aneurysm after coronary bypass surgery

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[1] IHSM MC "Vedanta"

[2] IHSM MC Vedanta

A true left ventricular aneurysm is a common complication of acute myocardial infarction (AMI). It occurs after a transmural infarction as a result of gradual thinning and expansion of the scar wall of the left ventricle. Repeat heart surgeries in patients who have previously undergone aortocoronary bypass surgery are considered high-risk operations. Nine years ago, in 2014, the patient underwent CABG-CABG, and in 2021 an ICD was implanted. The patient was hospitalized in extremely serious condition. Over the past 3 days, the patient had frequent episodes of ventricular tachycardia, the ICD had triggered several times, and external electrical cardioversion had been performed multiple times since 23.02.2023. An echocardiogram revealed: chronic left ventricular aneurysm, massive thrombus in the left ventricle cavity, EF LV = 16%. A CT scan of the chest organs was performed considering the adhesion process due to the previous operation. Coronary angiography was performed: no significant stenoses in the coronary arteries. The venous shunt to the CABG is functioning well. Considering the life-threatening arrhythmias, massive LV thrombi, the decision was made by the board to surgically treat the patient. The operation of LV aneurysm repair according to the Dor procedure with thrombectomy from the LV + LV revascularization was performed on 24.02.2023. The duration of the operation was 144 minutes, aortic cross-clamp time was 106 minutes. Extubationwas done 9 hours after the operation. The patient was discharged on the 10th day of hospitalization. At discharge, the LV ejection fraction was 33%. Six months after the operation, the LV ejection fraction was 40%.

ID: 134

Topic:

Cardiovascular Surgery > Aortic valve surgery

Presentation Type:

Poster

Reconstructive surgical treatment of Staphylococcus lugdunensis aortic valve endocarditis causing mitral-aortic intervalvular fibrosa and destruction of the membranous septum in a patient with ascending aortic aneurysm.

Assoc. Prof. Nail Kahraman , MD NÖFEL AHMET BİNİCİER*

University of Health Sciences, Bursa City Hospital, Department of Cardiovasculary Surgery, Bursa, Turkey

In this case report, the successful surgical treatment of Staphylococcus lugdunensis (S. lugdunensis) endocarditis, which is an ascending aortic aneurysm and causes severity aortic valve insufficiency due to vegetation in the bicuspid aortic valve, is described. Additionally, in this case, the damage to the internal commissure of the mitral valve posterior leaflet and the membranous septum was repaired. Mitral-aortic intervalvular fibrosa (MAIVF) destruction was repaired. Additionally, a successful Wheat Procedure was applied in this case. This case was shared because it is very rare in the literature.

ID: 142

Topic:

Cardiovascular Surgery > Coronary artery disease - CABG surgery

Presentation Type:

Poster

DIRECT RESULTS OFF-PUMP CORONARY ARTERY BYPASS THROUGH MINISTERNOTOMY AT PATIENTS WITH DIABETES MELLITUS

MD Khusan Khalikulov[*] [1] , Prof. Abrol Mansurov[2] , Prof. Rustam Yarbekov[1] , Prof. Sandjar Babdjanov[1] , MD Saidorifhon Murtazaev[1] , MD Alisher Khaydarov[1] , MD Denis Chernov[1]

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Background. Estimation of the direct results off-pump coronary artery bypass through ministernotomy at patients with diabetes mellitus.

Material and methods. We have performed 40 operations off-pump coronary artery bypass. All operations were performed through ministernotomy with the using myocardial stabilizer. The age of patients varies from 32 to 60 years old. All patients were male. Unstable angina was diagnosed at 15 (37,5%) patients, and the rest of 25 (62,5%) patients had different class of stable angina. Arterial hypertension at 38 patients, coronary insufficiency at 11 patients. 34 patients had myocardial infarction in the anamnesis.

ECG data revealed ischemia at 25 patients. EchoCG: left ventricle ejection fraction under 40% at patients, under 50% at 22 patients and the rest of patients had a 55%. Blood glucose level was varied from 8 to 15 mmol/L and average mean composed of 11,2 mmol/L.

Aniography data revealed single-vessel disease at 25 cases and the other 15 patients had double-vessel disease.

Results. In all cases performed off-pump coronary artery bypass grafting. The use of internal mammary artery at 38 cases. By the means of reducing complications related to the diabetes mellitus in all cases performed inferior L-shaped ministernotomy.

After operation patients were extubated from 3 to 4 hours (average mean 3,4 hours). Mortality was 0%. After operation all patients were prescribed insulin infusion. Ejection fraction by EchoCG increased up to 6,65% averagely, at 35 (90%) cases were revealed improvement on coronary blood supply by ECG data. There wasn't revealed purulent-inflammatory complications at the nearest-term outcome after operation.

Conclusion. Off-pump coronary artery bypass through ministernotomy at patients with diabetes mellitus in accordance with the insulin infusion reduces risk of intra- and postoperative complications such as complications of central nervous system and purulent-inflammatory processes.

ID: 147

Topic:

Cardiovascular Surgery > Endovascular surgery

Presentation Type:

Poster

Endovascular Repair of a Rupture at the External Iliac Artery and Pseudoaneurysm in a Behçet's Disease Patient.

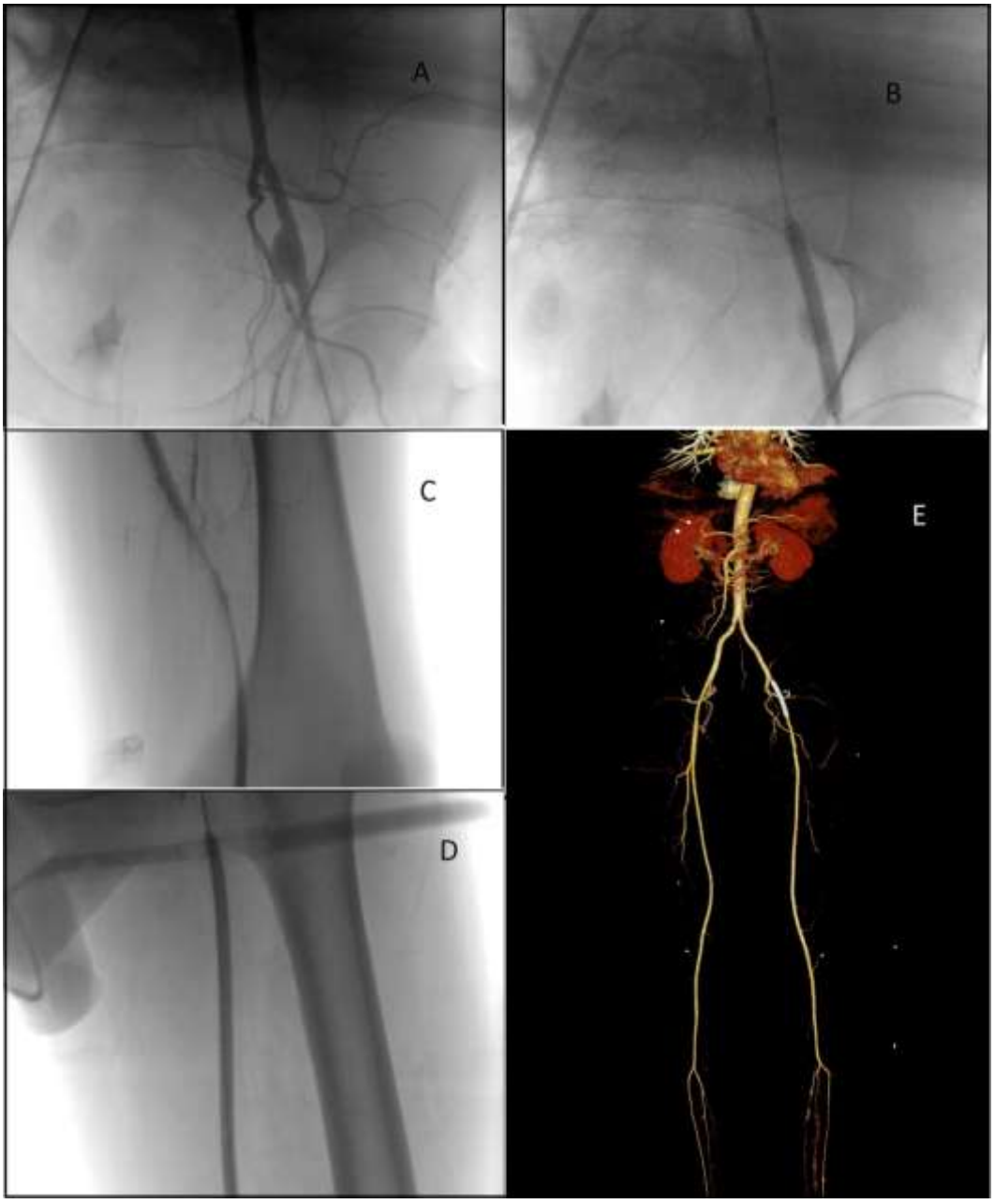
Assoc. Prof. Dilşad Amanvermez Şenarslan*

Manisa Celal Bayar University, Faculty of Medicine, Department of Cardiovascular Surgery.

Behçet's Disease (BD) is a rare, chronic, relapsing, inflammatory, and multisystemic disease. (1-3) A 43-year-old male patient with Behçet's disease with peripheral artery disease had critical limb ischemia on the left lower extremity. He was taking oral steroids for 3 years and colchicine for 10 years because of Behçet's disease. His symptoms of Behçet's disease were recurrent and were not well controlled. He experienced an external iliac artery rupture during the intervention attempted for endovascular revascularisation of the left lower extremity. He had a pseudoaneurysm at the region of the external iliac artery (EIA) and a large hematoma in the retroperitoneum. His hemoglobin levels progressively decreased from 13.5 g/dL to 8.2 g/dL and hypotension and tachycardia started. He was consulted to the cardiovascular surgery department for urgent surgical repair. He had also a 10 cm length stenosis in the left superficial femoral artery segment.

An endovascular treatment from the contralateral femoral artery by a retrograde puncture was planned as a suitable treatment modality. A long sheath was inserted from the right femoral artery. The region of the pseudoaneurysm lesion in the left EIA cautiously transpassed antegrade way with a hydrophilic 0.35'' guidewire, then changed to a stiff guidewire. A balloon expandable covered stent Advanta V12® (Atrium, Maquet, Getinge Group, Merrimack, United States) used to cover pseudoaneurysm. In control angiography extravasation from the EIA was stopped. After that, the lesion at the left superficial femoral artery was revascularized with a drug-coated balloon (i-vascular, Barcelona, Spain) (Figure 1).

An adequate flow was obtained for the left lower extremity and a rupture in EIA was repaired by a covered stent in the same session. Endovascular approaches may be advantageous in rheumatologic diseases such as Behçet's disease for avoiding complications of surgical repair. Wound healing problems, recurrent pseudoaneurysms at anastomosis sites or occlusion may be prevented by choosing endovascular repair instead of surgical repair. (1-3) Additionally, bleeding was controlled more quickly and hemodynamic stabilization was achieved more rapidly with endovascular treatment.



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Keyword: *Behçet's Disease, Endovascular repair, Pseudoaneurysm*

ID: 149

Topic:

Cardiovascular Surgery > Cardiac Tumors

Presentation Type:

Poster

Association of Recurrent Testis Tumor, Cushing's Syndrome and Recurrent Cardiac Myxoma (Carney's Complex)

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Introduction

Primary cardiac tumors are rare neoplasms. Approximately 75% of these are benign, with approximately 75% of them being composed of myxomas. Myxomas primarily originate in the left atrium and are sporadic tumors, however they can develop from any cardiac cavity. The location of the mass within the cardiac cavity and its attachment surface, along with the patient's clinical and echocardiographic findings, provide important clues for distinguishing the mass from vegetation, thrombus, and other tumors.

After diagnosis, immediate surgical treatment is necessary to prevent atrioventricular valve dysfunction and eliminate the risk of systemic embolism. Although surgical resection can provide almost complete cure, recurrence can occur in the same or different location as a local recurrence.

Case Report

A 37-year-old male was referred to our clinic by the neurology department due to recurrent transient ischemic attack. Upon examination of the patient's history, it was observed that he underwent left orchiectomy at the age of 5 due to a diagnosis of large cell calcifying Sertoli cell tumor. It was discovered that one year later, after the recurrence of the same tumor in the right testicle, a right orchiectomy was performed and the patient received bleomycin and etoposide chemotherapy after the surgery. The patient commenced ketokonazole and prazosin treatment at the age of 11, and initiated testosterone replacement therapy at the age of 12 following a diagnosis of Cushing's syndrome. It was discovered that there was a lesion in the right lateral section of the adenohypophysis measuring 4 mm in diameter, which was consistent with a microadenoma. As a result, it was decided to do bilateral adrenalectomy due to adrenal micronodular hyperplasia in a 16-year-old individual. It was also found that the individual received hydrocortisone and fludrocortisone treatment after the adrenalectomy.

The current transthoracic and transesophageal echocardiography of the patient who underwent surgery with a diagnosis of myxoma at the age of 27 due to the presence of a soft tissue mass with lobulated structure measuring 4.0x1.5 cm originating from the fossa ovalis in

the right atrium, containing heterogeneous areas, revealed normal left ventricular systolic function, minimal mitral insufficiency, minimal tricuspid insufficiency, and a 2.6x2.7 cm pedunculated atypical morphology mass predominantly suggestive of myxomatous changes adhered to the left atrium septum with prolapse into the left ventricle during diastole (Figure 2). The electrocardiographic examination showed a sinus rhythm consistent with a heart rate of 78 beats per minute (Figure 1). The patient was referred to cardiovascular surgery for a surgical operation based on the evaluation of a mass measuring 2.5 cm in size, showing hypointensity in T1-weighted, and showing hyperintensity in T2-weighted iamges, and heterogeneous enhancement in post-contrast images, observed in the cardiac MR examination (Figure 3), indicating myxoma. The surgically removed mass (Figure 4) was histologically diagnosed as a myxoma.

Discussion

Carney complex (CNC) is an uncommon genetic condition that is linked to one of the multiple endocrine neoplasia (MEN) syndromes. Carney complex impacts various glands in the body, including the thyroid, pituitary, and adrenal glands. Additionally, it is associated with the development of heart myxomas, aberrant pigmentation, cutaneous myxomas, breast myxomatosis, melanotic schwannoma, and testicular tumors. Adrenocortical nodular dysplasia, Sertoli cell tumor of the testis, pituitary tumors, multiple myxoid breast fibroadenoma, cutaneous myxoma, and focal pigmentation on the face and lips might be observed. Our patient has been diagnosed with Carney complex due to the presence of adrenocortical nodular dysplasia, recurrent Sertoli cell tumor of the testis, pituitary adenoma, and recurrent cardiac myxoma history.

Embolization is a primary manifestation of cardiac myxomas. Sistemic emboli occurs in around 30% to 45% of cases of left atrial myxoma (1). The presence of thrombus fragments on the surface of the myxoma or within the myxoma itself might lead to embolic symptoms and complications. The risk of emboli is higher in left-sided sourced miksomas and can lead to cerebrovascular events. These tumors, which can be seen at any age but are more common in women, can manifest with cerebral or peripheral embolic symptoms (2), mimic mitral stenosis (3), or present with constitutional and systemic symptoms (4). Additionally, it can lead to myocardial infarction (5) and cause endocarditis (6) and sepsis (7) when embolization occurs in the coronary arteries.

Patients diagnosed with myxomas should be immediately referred for surgical intervention as there is a risk of peripheral embolism and valve obstruction, which can result in abrupt death. Given our circumstances, the patient who underwent evaluation for recurrent transient ischemic stroke was deemed suitable for surgery, which led to the complete excision of the tumor.

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Keyword: *Carney's Complex, Myxoma, Testis tumor, Cushing's Syndrome*

ID: 34

Topic:

Cardiology > Hypertrophic cardiomyopathy

Presentation Type:

Poster

AL Cardiac Amyloidosis Diagnosed By Mass Spectrometry-Based Proteomics Using Laser Microdissection

MD Etga Köprücü[*] [1] , Prof. Kevser Gülcihan Balcı[1] , Prof. Özgül Uçar Elalmış[1] , MD Jessica Chapman[2] , MD Kristel Flor[2] , Prof. Ender Örnek[1]

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[2] Department of Pathology and Laboratory Medicine, Memorial Sloan Kettering Cancer Center, New York, USA.

Case Presentation

A 77-year-old man with heart failure, atrial fibrillation, and a history of ischemic stroke presented to the emergency department with fatigue, dyspnea, and pretibial edema. The patient had cardiomegaly on telecardiography, and low voltage on ECG. Cardiac amyloidosis was suspected following echocardiography. Cardiac catheterization revealed no coronary artery stenosis. Total body scintigraphy showed no cardiac uptake of Tc99m-PYP. Serum tests showed elevated gamma globulins with free lambda light chain dominance. Cardiac MRI findings were consistent with cardiac amyloidosis. Percutaneous endomyocardial biopsy and bone marrow biopsy were conducted. The bone marrow biopsy revealed plasma cells with a monoclonal lambda protein pattern. In the endomyocardial biopsy, amyloid deposits were detected in vessel walls through histochemical analysis, confirmed by Congo red staining showing green birefringence under polarized light. However, immunohistochemistry results were negative for various light chains and proteins associated with amyloidosis. Due to negative immunohistochemistry, the subtype couldn't be determined in the endomyocardial biopsy. Liquid chromatography-mass spectrometry (LC-MS) identified the amyloid subtype as AL lambda amyloidosis. The most abundant protein in the deposits was the lambda light chain. Patient received daratumumab, cyclophosphamide, bortezomib, and dexamethasone in hematology clinic but the patient passed on the fourth day of treatment.

Discussion

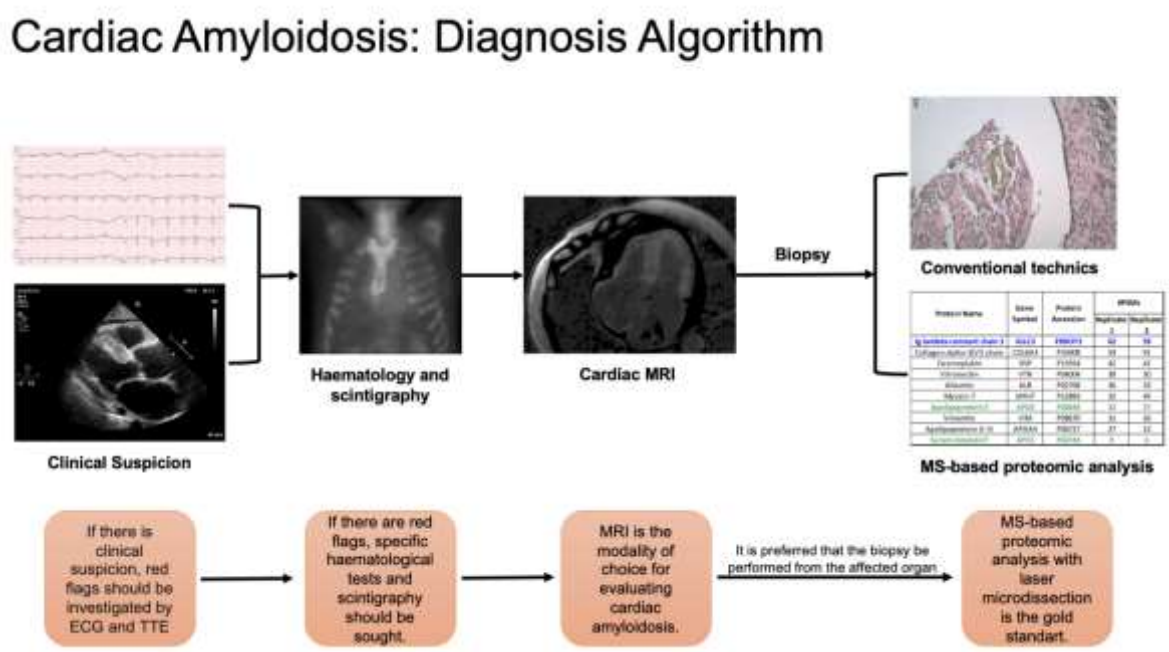
Diagnosis of AL-type cardiac amyloidosis (AL-CA) is the challenge. Cardiac MRI is suggested for patients with positive hematological tests and grade 0 nuclear scintigraphy, with biopsy recommended if amyloidosis is indicated in the MRI. Proteomic analyses, particularly mass spectrometry (MS) methods, are crucial for typing amyloid and are considered the gold standard. Laser microdissection (LMD) enhances specificity by isolating regions of interest, improving sensitivity and specificity of LC-MS to nearly 100%, even in rare inherited variants. In this case, AL-CA diagnosis was achieved through LC-MS in a patient where routine immunohistochemical staining failed to determine the subtype. Consequently, MS is crucial

for identifying amyloidosis subtypes in cases of uncertain etiology, as multiple subtypes can coexist and traditional tests may have false results.

Conclusion

Identifying the correct amyloid subtype is crucial for guiding treatment decisions and offering accurate prognostic information to patients amidst advancements in AL and ATTR amyloidosis therapies. Laser microdissection (LMD) and tandem mass spectrometry (MS) are valuable in both differential and definitive diagnosis, particularly in complex cases, aiding in determining the specific amyloid subtype.

Graphical Abstract



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Mahmood S, Gilbertson JA, Rendell N, et al. Two types of amyloid in a single heart. Blood. 2014;124(19):3025-7

Keyword: *hert failure, amyloidosis, mass spectrometry*

ID: 37

Topic:

Cardiology > Cardiac imaging – Echocardiography

Presentation Type:

Poster

INDICATORS OF LONGITUDINAL STRAIN OF THE LEFT ATRIUM IN YOUNG PATIENTS WITH MYOCARDIAL INFARCTION

Prof. Feruza Bekmetova* , MD Shukhrat Doniyorov , MD Bekbulatova Regina , MD Bakhtiyor Karimov , MD Sevara Bekmetova , MD Laylo Ilkhomova

REPUBLICAN SPECIALIZED SCIENTIFIC AND PRACTICAL MEDICAL CENTER OF CARDIOLOGY

Background: The left atrium (LP) is important in the formation of heart failure in patients who have suffered a myocardial infarction. Evaluation of the strain parameters of the left atrium arises as a potential prognostic indicator in this group of patients.This study is aimed at evaluating the parameters of left atrial deformation in young patients who have suffered a myocardial infarction complicated by diastolic heart failure.

Methods: The study included 70 young patients who had suffered a myocardial infarction with complicated HF with a preserved left ventricular ejection fraction (HFpEF), aged 35-45 years, whose average age was 40 ± 4.2 years. All patients underwent the following examinations: standard transthoracic echocardiography to assess left atrial deformity. At the same time, plasma NT-proBNP levels were measured to improve the accuracy of diagnosis of heart failure. All patients were divided into 2 groups: Group I - 35 patients with CHF; Group II - 35 patients without heart failure.

Results: In young patients who had a myocardial infarction with complicated HFpEF, the reservoir strain was 32.4 ±8.3%, the conduit strain was 16.89 ± 6.525% and the contractile strain was 16.52 ± 8%. In the second, the reservoir strain was 36.3 ± 7.1%, the conduit strain was 23.5 ± 4.7% and the contractile strain was 16.52 ± 5%.

Conclusions: Young patients who have suffered a myocardial infarction complicated by LV CHF, there is a decrease in reservoir and conduit function while maintaining contractile function. These data serve as a surrogate marker indicating increased left ventricular filling pressure in this category of patients.

Keyword: *Longitudinal strain, Heart failure, myocardial infarction, transthoracic echocardiography*

ID: 40

Topic:

Cardiology > PI for SHD-Others

Presentation Type:

Poster

Iatrogenic Aorta-Atrial Fistula Post Cryoablation Treated Percutaneously with Occluder Device.

MD Saad Albogami*
SCFHS

An aorta-atrial fistula (AAF) is a rare but complex pathological condition that can either be congenital or acquired. In this case report, we present a complication of trans-septal cryoablation procedure for atrial fibrillation where a fistula occurred from the Aorta (AO) through the right coronary cusp (RCC) to the right atrium (RA). The conventional treatment for such fistula is surgical repair. In this case, we present a rarely utilized but effective percutaneous AAF closure.

ID: 49

Topic:

Cardiology > Arrhythmias and antiarrhythmic therapy

Presentation Type:

Poster

The effect of Ramadan intermittent fasting on cardiac rhythms and heart rate variability in youngest-old patients with coronary artery disease: A prospective cohort study.

MD Mutlu Cagan Sumerkan* , MD Pelin Zeynep Orhan , MD Eren Ladiklioglu , MD Yusuf Sezai Akyildiz , MD Hande Yuksek , Assoc. Prof. Ahmet Gurdal , Prof. Kudret Keskin

Department of Cardiology, University of Health Sciences Turkey, Sisli Hamidiye Etfal Training and Research Hospital, Istanbul, Turkey

Background: Divergent findings regarding the impact of Ramadan intermittent fasting on patients' cardiovascular health have been documented. This study aimed to evaluate the effects of Ramadan intermittent fasting on cardiac rhythms and heart rate variability (as a measure of cardiac stress) in the youngest-old (≥70 years of age) patients with coronary artery disease (with a history of percutaneous coronary intervention or coronary artery bypass graft surgery).

Methods: In this prospective cohort study, the rhythms were determined by 24-hour ambulatory Holter monitoring at Ramadan fasting in the middle of Ramadan and the first month after Ramadan, and the rhythms were compared. Heart rate variability was assessed during the daytime and nighttime of each subsequent day of observation.

Results: This research encompassed a cohort of 29 patients devoid of cardiac symptoms and known arrhythmias (75.0 (72.0-80.0) years, 19 (65.5%) males). Fasting exerted no discernible impact on standard laboratory assays (glucose, AST, ALT, creatinine, whole blood count) or lipid profile parameters. The findings of the rhythm holter recording of patients are shown in Table 1. The study population had ventricular tachycardia attacks with a ratio of 10.3% (n=3) and supraventricular tachycardia attacks with 58.6% (n=17) regardless of fasting. No correlation was found between fasting and arrhythmias (premature ventricular, supraventricular contractions, supraventricular tachycardia, or ventricular tachycardia). During Ramadan, the daytime showed statically significantly higher the very low frequency power, the low-frequency power, and lower stress index.

In contrast, the nighttime of the same day showed a significantly lower the square root of the mean of the squares of the successive difference between normal heartbeats, the percentage of intervals >50 ms different from the preceding interval, and lower frequency power (table 1. p-value <0.05). Furthermore, the nighttime period substantially reduced the high-frequency power but was not found to be statistically significant (p=0.05). According to the evaluation of the all-day rhythm Holter records, fasting did not affect heart rate variability. However, heart rate variability parameters increased in the daytime and decreased at nighttime.

Conclusions: Intermittent fasting during Ramadan reduced cardiac stress in the daytime versus increased cardiac stress at nighttime among elderly patients with coronary artery disease. Additionally, our study elucidated the imperative for meticulous arrhythmic assessment in elderly patients with coronary artery disease regardless of fasting.

Table 1. Comparison of 24-hour ambulatory rhythm holter findings and heart rate variability analysis during and after Ramadan fasting.

	All			Daytime (06:00-22:00 hours)			Nighttime (22:00-06:00 hours)		
	During Ramadan	After Ramadan	*P value	During Ramadan	After Ramadan	†P value	During Ramadan	After Ramadan	¥P value
Minimum HR (bpm)	48.0 (43.5-54.5)	47.0 (44.0-52.0)	0.36						
Average HR (bpm)	69.0 (60.5-75.5)	67.0 (60.5-74.5)	0.08						
Maximum HR (bpm)	109.0 (97.0-118.0)	104.0 (95.0-120.0)	0.85						
Total pVSC	35.0 (1.5-825.0)	133.0 (1.0-478.5)	0.91						
VT run, n (%)	4 (13.8)	3 (10.3)	0.56						
Total pSVSC	72.0 (10.0-832.5)	66.0 (9.0-370.5)	0.44						
Total pPSVSC	0.0 (0.0-11.5)	3.0 (0.5-10.5)	0.67						
SVT run, n (%)	17 (58.6)	17 (58.6)	1.0						
R-R interval derived									
Mean RR interval (msec)	857.2 (805.2-1005.7)	879.2 810.6 (1007.5)	0.19						
SDNN (msec)	109.0 (83.5-123.5)	112.0 (87.0-123.0)	0.35	106.0 (86.5-137.5)	99.0 (88.0-120.0)	0.48	87.0 (70.5-99.5)	83.0 (61.5-111.5)	0.96
SDANN index (msec)	96.0 (68.5-115.0)	91.0 (76.5-109.5)	0.75						

SDNN index (msec)	47.0 (33.0-57.0)	43.0 (33.5-53.5)	0.56						
rMMSD (msec)	24.0 (15.5-32.0)	27.0 (18.5-34.5)	0.42	26.0 (15.0-37.5)	26.0 (16.5-35.0)	0.51	20.0 (16.0-25.0)	24.0 (16.5-30.0)	0.04
Pnn50 (%)	3.0 (0.0-5.5)	5.0 (1.0-8.5)	0.056	4.0 (0.0-7.5)	4.0 (0.0-10.5)	0.51	1.0 (0.0-3.5)	3.0 (1.0-7.0)	0.008
Parameters spectral analysis									
VLF power	1719.0 (776.0-2745.0)	1558.1 (867.6-2131.0)	0.35	1916.3 (784.3-2718.2)	1505.2 (922.6-2092.6)	0.04	1208.7 (621.7-2341.3)	1355.0 (744.4-2400.5)	0.64
LF power	263.7 (140.7-362.5)	257.6 (110.7-364.2)	0.63	310.8 (128.2-386.3)	240.6 (126.6-342.8)	0.02	193.3 (122.1-298.1)	289.0 (101.8-453.5)	0.02
HF power	100.6 (43.9-143.6)	96.6 (47.5-171.8)	0.34	103.0 (37.4-165.4)	87.7 (48.6-150.3)	0.57	64.2 (47.9-111.2)	111.9 (49.4-190.7)	0.05
LF/HF ratio	2.8 (2.1-4.5)	2.1 (1.7-3.9)	0.171						

Values are presented as median (25–75th percentiles).

HF band (0.150–0.400 Hz); LF band (0.040–0.150 Hz); VLF band (0.003–0.040 Hz).

*P value compares values during Ramadan fasting vs. after Ramadan.

†Statistically different compared to the morning period of the same day.

¥Statistically different to the night period of the same day.

ASDNN (index), Mean of the standard deviations of all NN intervals for all 5-minute segments in 24 hours; bpm, beats per minute; HR, heart rate; ms, milliseconds; msec, millisecond; NN interval differences; pNN50, The percentage of intervals >50 ms different from preceding interval; pPSVSC, premature pair supraventricular systolic contraction; pPVSC premature pair ventricular systolic contraction; pSVSC, premature supraventricular systolic contraction; pVSC, premature ventricular systolic contraction; rMMSD, Square root of the mean of the squares of successive; SDNN, Standard deviation of all normal to normal R-R (NN) intervals; SDANN, Standard deviation of 5-minute average NN intervals; VT, ventricular tachycardia.

Keyword: *Aged, Arrhythmia, Electrocardiography, Ambulatory, Intermittent Fasting*

ID: 58

Topic:

Cardiology > Interventions for peripheral arterial diseases

Presentation Type:

Poster

Percutaneous intervention in thrombo-occlusive arterial involvement of Behcet's disease

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İstanbul Medipol University

BACKGROUND: Behcet's disease (BD) is a disease that occurs with a complex mechanism and affects many systems, with an unclear etiology, especially the skin and mucosa. It is a polygenic and autoinflammatory disease. BD shows a special geographical distribution. It is concentrated in the Mediterranean countries. While venous system involvement is seen in 20-40% of patients, the risk of venous thrombosis is increased 14-fold in BD patients. On the other hand, arterial system involvement is seen in 3-5% of patients. Although aneurysmal damage is the most common type of damage, stenosis or occlusion is also seen. Inflammation in the vascular wall causes thrombus formation, this is called thromboinflammation. There is no pathognomonic laboratory test or biomarker for the diagnosis of BD; the definitive diagnosis is made by clinical findings. I will describe a patient diagnosed with BD after percutaneous intervention with critical limb ischemia(CLI).

CASE: 33-year-old male patient, has been a smoker for 13 years and does not have diabetes mellitus or hypertension. In June 2023, he was treated by cardiovascular surgery in another center with acute limb ischemia and femoro-femoral bypass for the totally occluded left iliac artery and fogarty thrombectomy was performed for the thrombus in the left below-knee arteries. The patient was admitted to our cardiology outpatient clinic in July 2023 with Rutherford II / category 4 ischemic rest pain. The patient underwent imaging with bilateral lower extremity computed tomographic angiography (figure-1). A decision was made for percutaneous intervention for the patient whose superficial femoral artery (SFA) was completely occluded. The procedure was started by making antegrade access from the left main femoral artery. There was an occlusion segment from the mid-SFA region to the proximal 1/3 of the anterior tibial artery (ATA), peroneal artery (PA) and posterior tibial artery (PTA). ATA and PA were reached with the antegrade route, but the PTA, which constitutes a large part of the foot vascular arch, could not be reached with a wire. SFA was reached by entering through the distal PTA via a retrograde route. Balloon angioplasty and kissing balloons were performed with drug-coated balloons with multiple applications (figure-2). Since the ATA was distally thrombosed and total, consecutive dilatations were performed with a 2.0x100 mm balloon. When the final image was taken, it was observed that thrombus formation continued in many segments (figure-3). The patient was taken to the coronary intensive care unit and tirofiban infusion and 25 mg/24 hour fibrinolytic treatment were started. Distal flows, which could not be obtained before with hand Doppler, began to be taken. The patient was discharged with rivaroxaban, clopidogrel and acetylsalicylic acid treatment. Hematology consultation was requested to examine thrombophilia and rheumatology consultation to

evaluate vasculitis. The patient, who had genital ulcers and a previous history of deep vein thrombosis, was diagnosed with BD by rheumatology and immunosuppressive treatment was started.

DISCUSSION: The first clinical presentation of BD may be due to acute arterial occlusion. If there are no atherosclerosis risk factors in 4-decade patients, BD should be included in the differential diagnosis in the etiological evaluation of peripheral artery disease in the region including Turkey. Although arterial system involvement is mostly aneurysm formation, limb loss can be prevented with percutaneous intervention in cases of CLI in thrombo-occlusive arterial disease. The main treatment is regression of vasculitis with immunosuppression.

CONCLUSIONS: Although percutaneous intervention can prevent leg loss in BD obstructive vasculitis causing CLI, the main treatment is immunosuppression.

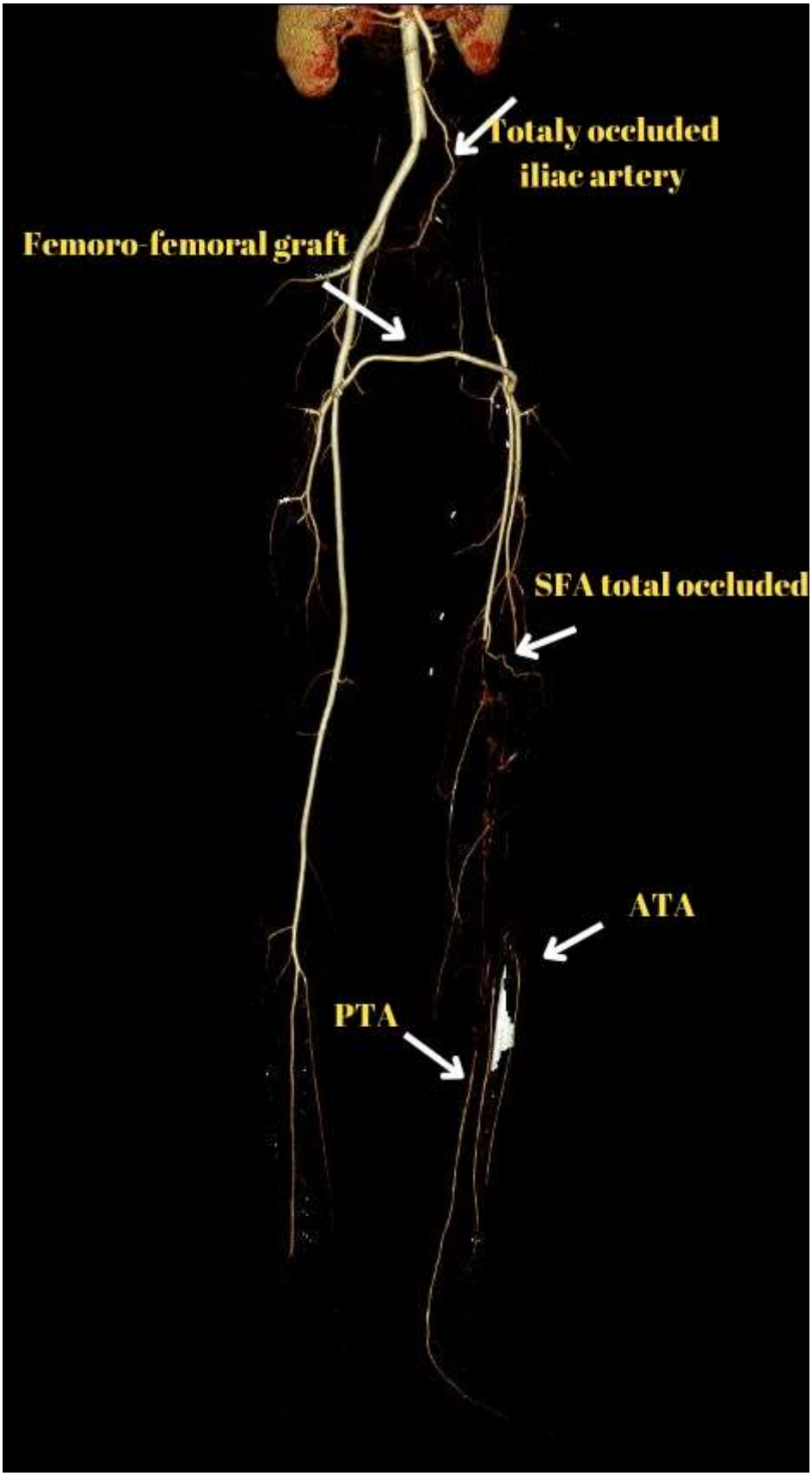

Figure-1: Lower extremity computed tomography angiography, 3D reconstruction

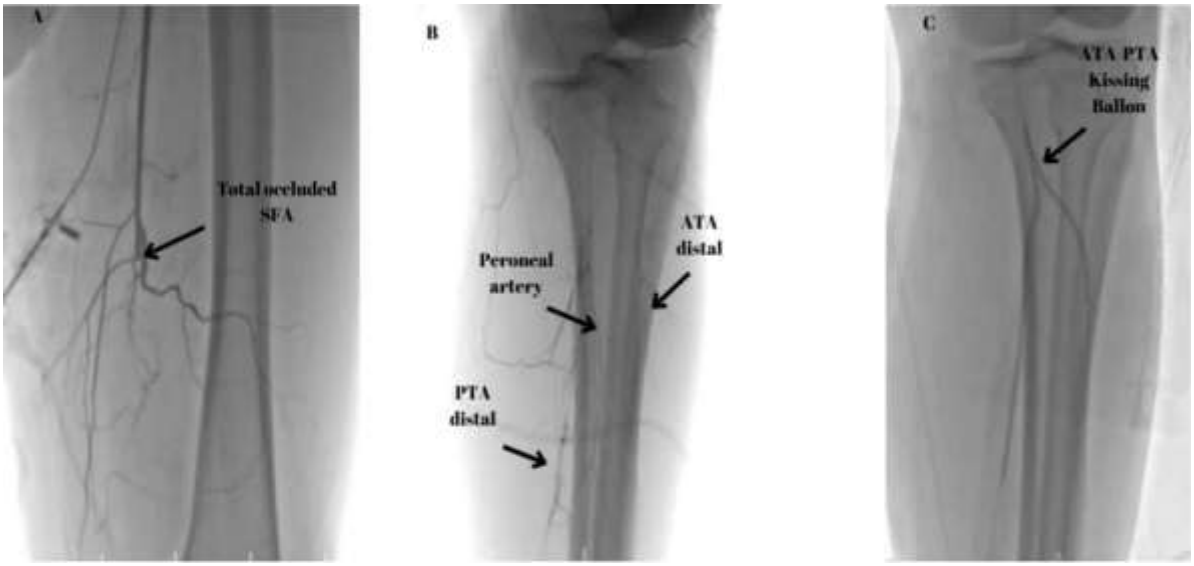

Figure-2 : A-B: Angiographic images before intervention, C: ATA and PTA kissing balloon angioplasty

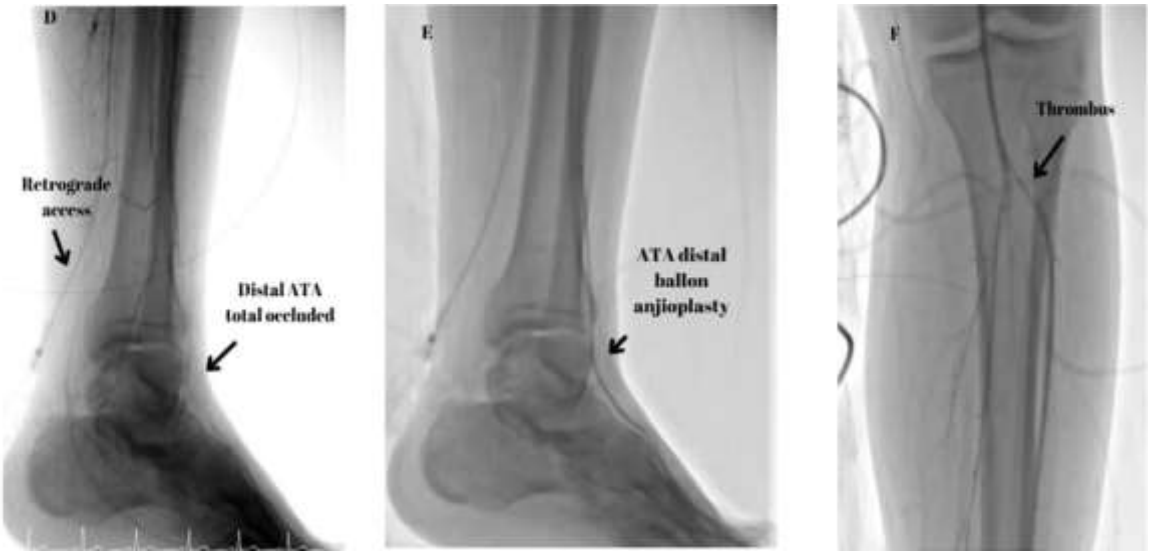

Figure-3: D-E: Distal PTA retrograde access site and Distal ATA ballon angioplasty, F: Thrombus is visible in the final image

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Keyword: *Behcet's Disease, Vascular Behcet, Critical limb ischemia*

ID: 67

Topic:

Cardiology > Preventive cardiology

Presentation Type:

Poster

Association of New-onset Herpes Zoster with Risk of Heart Failure among Patients with Type 2 Diabetes Mellitus

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Background

Herpes zoster commonly occurs in patient with type 2 diabetes mellitus (T2DM), yet the association of herpes zoster with risk of heart failure is unclear. The aim of our study is to explore the association of new-onset herpes zoster with subsequent risk of heart failure in patients with T2DM using a population-based study.

Methods

We recruited patients with T2DM, who were free of herpes zoster and heart failure between January 2000 and 2015 from a territory-wide clinical registry in Hong Kong. Time-varying Cox regression was applied to estimate the association between herpes zoster and subsequent risk of heart failure. Fine-Gray model was used to adjust for competing events.

Results

A total of 327909 patients with T2DM were recruited (mean age 65 years; 48.9% men), 6029 patients developed herpes zoster during follow-up, 321880 remained free of herpes zoster. During a median follow-up of 8.38 years, there were 577 heart failure events among patients with herpes zoster, and 31321 events among patients free of herpes zoster. Patients with herpes zoster had 12% higher risk of heart failure compared to those free of herpes zoster (SHR 1.12, 95%CI 1.03-1.22).

Conclusion

In patients with T2DM, new-onset herpes zoster was associated with increased subsequent risk of heart failure. Our study suggest that strategies reduce the risk of herpes zoster in patients with T2DM may reduce the comorbidities of patients.

ID: 68

Topic:

Cardiology > Preventive cardiology

Presentation Type:

Poster

Effects of Urinary Tract Infection and Stopping Sodium-Glucose Cotranspoter-2 Inhibitors in Patients with Type 2 Diabetes Mellitus: A Population-Based Study

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Background

Sodium-glucose cotranspoter-2 (SGLT2) inhibitors are widely prescribed in patients with type 2 diabetes mellitus (T2DM). Yet these patients are susceptible to urinary tract infection (UTI). This study aims to investigate the efficacy of continuing SGLT2 inhibitors after an episode of UTI.

Methods

Patients with T2DM who were prescribed SGLT2 inhibitors from January 2015 to June 2022 were identified from Clinical Data Analysis and Reporting System (CDARS). The primary outcomes were major adverse cardiovascular events (MACE: a composite of heart failure hospitalization, stroke, myocardial infarction, and cardiovascular mortality), renal-specific composite outcomes (defined as 50% decline in eGFR, end-stage renal failure, and kidney mortality), cardiovascular mortality, and all-cause mortality. Multivariable Cox proportional hazards model was employed to estimate the hazard ratios (HRs), while Fine-Gray model was used to account for competing events. Incident UTI was treated as time-varying covariate in the model.

Results

A total of 61,661 patients (mean age 63 years, 64.1% male) with T2DM who were prescribed SGLT2 inhibitors were included in this study, of whom 3,976 (6.45%) patients had an episode of UTI in follow-up. Patients who had an incident UTI were associated with a higher risk of MACE (HR 1.98, 95% CI 1.78-2.21), renal-specific composite outcomes (HR 2.17, 95% CI 1.95-2.40), cardiovascular mortality (HR 4.60, 95% CI 3.86-5.48) and all-cause mortality (HR 4.25, 95% CI 3.89-4.65) compared to those without an incident UTI. Among patients who experienced a UTI, stopping SGLT2 inhibitors conferred a 76% reduction in the risk of long-term recurrent UTI (HR 0.24, 95% CI 0.14-0.40), but entailed a significantly higher risk of MACE (HR 1.29, 95% CI 1.05-1.57), renal-specific composite outcomes (HR 1.46, 95% CI 1.21-1.77), cardiovascular mortality (HR 1.69, 95% CI 1.27-2.24), and all-cause mortality (HR 2.77, 95% CI 2.37-3.23).

Conclusion

Using real-world data of patients with T2DM who were prescribed SGLT2 inhibitors, this study found that new-onset UTI increased the risk of MACE, renal-specific composite outcomes, cardiovascular mortality, and all-cause mortality. Moreover, stopping SGLT2 inhibitors after a UTI conferred a lower risk of long-term recurrent UTI, but a higher risk of MACE, renal-specific composite outcomes, cardiovascular mortality, and all-cause mortality.

ID: 120

Topic:

Cardiology > Dilated cardiomyopathy

Presentation Type:

Poster

Sudden Cardiac Death (SCD) and Subcutaneous ICDs

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[2] Almaty Multidisciplinary Clinical Hospital

Sudden Cardiac Death is an abrupt, nontraumatic demise caused by cardiovascular events. Despite advances in treatment, Sudden Cardiac Death remains a significant public health challenge. Key points include:

Enormous Burden: Sudden Cardiac Death poses a substantial burden worldwide, necessitating comprehensive management strategies.

Multidisciplinary Approach: Survivors of Sudden Cardiac Death require thorough evaluation, substrate identification, and intervention. implantable cardioverter-defibrillator play a pivotal role.

Subcutaneous Implantable Defibrillator demonstrate consistent shock efficacy over 5 years. They are valuable for high-risk patients.

Long-Term Outcomes: Recent studies highlight Subcutaneous Implantable Defibrillator performance, low complication rates, and efficacy in preventing arrhythmic death.

In summary, Subcutaneous Implantable Defibrillator demonstrate offer a bedrock solution for managing Sudden Cardiac Death, emphasizing early intervention and multidisciplinary care.

Shock Efficacy: The Subcutaneous Implantable Defibrillator maintained a high level of shock efficacy, with 98% effectiveness at 5 years.

Transvenous Device Conversion: Only 2% of patients needed a transvenous device for pacing indications during the follow-up.

Complications: Complication rates were 8.9% at 1 year and 15.2% at 5 years.

Inappropriate Shocks: Inappropriate shock rates were 8.7% at 1 year and 16.9% at 5 years.

Keyword: *Sudden Cardiac Death, Subcutaneous Implantable Defibrillator*

ID: 123

Topic:

Cardiology > Interventions for peripheral arterial diseases

Presentation Type:

Poster

Pulmonary Arteriovenous Fistula In A Patient With Chronic Hypoxemia. A Case Report

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BACKGROUND:

Pulmonary arteriovenous fistulas (PAVFs) are abnormal direct communications between pulmonary arteries and veins, without a capillary bed between them, resulting in a right-to-left shunt. Most commonly associated with hereditary hemorrhagic telangiectasia, they can also occur in the context of heart diseases or hepatic disorders. They are often asymptomatic in pediatric patients or present with hypoxemia and dyspnea. Clinical presentation and prognosis depend on the number and size of the malformations. Diagnosis is made through imaging studies, with embolization remaining the treatment of choice for single fistulas. We present the case of a child diagnosed with a single PAVF in the context of severe dyspnea and cyanosis.

DESCRIPTION:

An 8-year-old patient with no relevant medical history presented with exertional dyspnea of several months' duration. Physical examination revealed severe cyanosis (SpO2 75%) and signs of chronic hypoxemia (clubbing of fingers), with no audible murmurs or other abnormal sounds. Complementary studies (angiography and cardiac MRI) confirmed a giant AV fistula connecting the left lobar branch with the superior pulmonary vein. The diagnosis of Osler-Rendu-Weber syndrome was confirmed based on clinical criteria. Therapeutic catheterization with embolization of the malformation was performed without complications. Oxygen saturation at discharge was above 95%.

CONCLUSIONS:

In pediatric patients presenting with chronic hypoxemia, pulmonary arteriovenous malformations should be considered in the differential diagnosis. In the presence of fistulas, systemic diseases should be ruled out. Endovascular embolization is the treatment of choice for single fistulas.

Video references: https://docs.google.com/presentation/d/1un0MoKLlermmz3-a28E6annIVSkqkDGKTLkzZtpvDB8/edit

Keyword: *Pulmonary arteriovenous fistula, Hereditary hemorrhagic telangiectasia, Percutaneous embolization*

ID: 126

Topic:

Cardiology > Transcatheter ablation for tachyarrhythmias - Supraventricular tachycardia

Presentation Type:

Poster

THE SIGNIFICANCE OF SUPRAVENTRICULAR TACHYARRHYTHMIAS IN PATIENTS WITH IMPLANTED CARDIOVERTER-DEFIBRILLATORS

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[3] «Syzganov National Scientific Center of Surgery», Department of Interventional Cardiology, Arrhythmology and Endovascular Surgery

Purpose of the study: to study the role of supraventricular tachyarrhythmias (SVT) in patients with implantable cardioverter-defibrillators (ICD).

Materials and methods: Since January 2013. until December 2014 at the National Scientific Center of Surgery named after A.N. Syzganov performed 50 ICD implantations in patients aged from 41 to 76 years (average age - 58.5±6.4) for the purpose of secondary prevention of sudden cardiac death, including 25 with coronary heart disease (CHD), 15 with dilated cardiomyopathy, 3 - arrhythmogenic cardiomyopathy, 3 - hypertensive cardiomyopathy, 1 - with a long QT interval, 2 - with idiopathic sustained ventricular tachycardia (VT), 1 - after correction of congenital heart disease.

Of the 50 cases of implantation, in 5 cases there was a secondary implantation due to depletion of the power source, in 45 there was a primary implantation. In 42 cases, ICD were implanted and in 8 cases, CRT-D devices were implanted. The follow-up period ranged from 6 to 48 months (average - 27).

Results: There are currently 44 patients in the study. During the observation period, 6 patients died, of which 4 had atrial fibrillation (AF): in 1 case - paroxysmal form and in 3 cases - permanent AF. The causes of death were: in 3 cases - progression of congestive heart failure, in 1 - continuously recurrent ventricular tachycardia (VT), in 2 - repeated myocardial infarction. Before ICD implantation, SVT was present in 11 patients (22%), SVT was registered, including AF - in 7, atrial flutter (AF) and AF - in 3, orthodromic tachycardia - in 1. After ICD implantation, SVT was registered for the first time in another 4 patients: 1 - AF, 3 – atrial flutter. Thus, at the time of the study, 17 patients had SVT, which was 34%. ICD activations during observation were recorded in 16 patients (32%): 10 had only motivated activations, 5 had in addition to motivated ones, unmotivated activations were also noted, and 1 patient with orthodromic tachycardia had only unmotivated activations. Of the patients with only motivated triggering, 5 people had SVT; Moreover, in 3 patients there was a transformation of SVT into VT. To

eliminate SVT, two of them (these were patients with CRT-D devices) underwent radiofrequency destruction of the AV node, after which there were no ICD activations for VT. Of the 6 patients with unmotivated triggering, in 4 cases the cause of unmotivated triggering was SVT; all patients underwent RFA: in 1 - for orthodromic tachycardia (RFA of the Kent bundle), in 3 cases - type I AF (RFA of the cava-tricuspid isthmus). In 2 cases, the cause of unmotivated activations was problems with the ventricular electrode.

Conclusion: The presence of SVT in patients with implantable ICD can lead to an increase in motivated ICD triggering due to the transformation of SVT into VT and can also be the cause of unmotivated triggering. The most effective method for eliminating SVT in these patients is radiofrequency ablation of the arrhythmogenic substrate, which in some cases is advisable to perform before ICD implantation.

Keyword: *supraventricular tachyarrhythmias, radiofrequency ablation, implantable cardioverter-defibrillator, CRT-D, ICD devices*

ID: 153

Topic:

Cardiology > Cardiac imaging – Echocardiography

Presentation Type:

Poster

Atypical cardiac tamponade: A case report of left ventricular diastolic collapse in a patient with previous lobectmy

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[1] Department of Cardiology, Bicard Clinic.

[2] Department of Cardiac Surgery, Bicard Clinic.

BACKGROUND:

Cardiac tamponade is a medical emergency, predominantly diagnosed clinically with supportive echocardiographic findings. Echocardiographic findings highly suggestive of cardiac tamponade include chamber collapse, inferior vena cava (IVC) plethora, and respiratory volume/flow variations. The right-sided cardiac chambers are a low-pressure system and are the first to show signs of collapse, with high specificity for tamponade.

METHODS:

We report the case of a 78-year-old man who, years after undergoing left lobectomy and with a history of pulmonary hypertension, demonstrated left ventricular (LV) diastolic collapse on echocardiogram. Although left-sided chamber collapse with tamponade has been reported with localized pericardial effusions after cardiac surgery, our patient did not undergo any cardiac surgery. Instead, he presented with a massive circumferential pericardial effusion mainly localized on the left side, compressing the left ventricle (Figure).

RESULTS:

We hypothesized that the main reason for this was the lobectomy, which caused decreased pressure on the left side of the heart. Subxiphoid pericardiocentesis was not feasible in this case due to the small amount of fluid on the right side. Therefore, we performed apical pericardiocentesis and drained 750 ml of transudative fluid.

CONCLUSIONS:

Our case highlights the importance of recognizing atypical forms of cardiac tamponade to aid in early identification and emergent management in such patients.

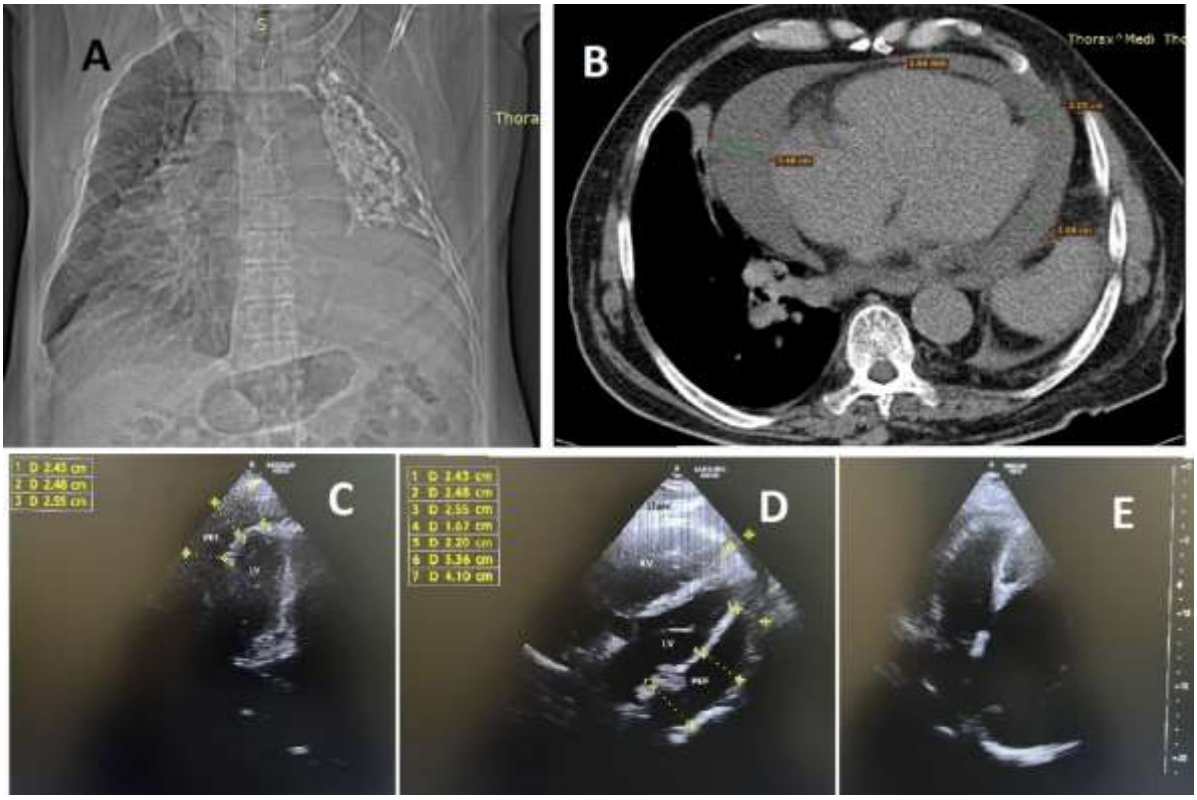

Figure explanations:

Chest X-ray showing left lower lobectomy, atelectasis of the left upper lobe, vertical lung resection suture line in the left lower zone, inflammatory parenchymal opacity on the right lung, leftward mediastinal shift indicating volume loss, leftward heart enlargement, and upward shift of the apex (A). Chest CT showing circumferential pericardial effusion mainly across the apex and posterolateral site of the left ventricle (B). Transthoracic echocardiography revealed pericardial effusion next to the left ventricle up to 2.5 cm on the apical view (C), and up to 4.1 cm on the subcostal view, compressing the left ventricle (D). Control echocardiography after the pericardiocentesis from the apical view (E). LV: left ventricle; PEF: pericardial effusion; RV: right ventricle.