EJCM
ejcvsmed.org
E Journal of Cardiovascular Medicine
Volume 3 Issue 2
July-December 2015
www.ejcvsmed.org

E Journal of Cardiovascular Medicine

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EJCM 2015; 03 (2): 19-
Doi: 10.15511/ejcm.15.00219

Endovascular (non-operative) abdominal aortic aneurysm treatment: Where are we?

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Abstract

Though the long-term mortality and morbidity results of patients who underwent endovascular treatment modalities are unknown, we recommend endovascular treatment to be administered in patients with high risk for open surgery and in centers with proper hybrid o-perating room conditions. In view of the tendency for less invasive methods for the treatment option in recent years, cardiovascular surgeons should review their positions on this. Assu-ming the 52% of the vascular interventions in 2012 will be performed via endovascular routes, the importance of this will be understood again. Cardiovascular surgery specialists are at a crossroads.

Keywords: Aortic aneurysm, aneurysm diameter, endovascular treatment

Gurbuz A. Endovascular (Non-operative) abdominal aortic aneurysm treatment: Where are we? EJCM 2015; 03 (2): 19-23. Doi: 10.15511/ejcm.15.00219.

Aortic aneurysm is a condition in which the normal diameter in a localized site expands more than 50% (1.5 fold). Normal infrarenal aorta diameter is 21.4 mm in males and 18.7 mm in females. Abdominal aortic aneurysm (AAA) can be explained as the diameter of infrarenal aorta at a localized site permanently exceeding 3 cm. It is seen 5% of males over 50 years. This rate increases with the increasing average age and advancements in diagnostic modalities.[1] AAA generally shows 0.5 cm expansion per year, and rupture develops as a result of its natural progress. Until rupture stage, mostly, asymptomatic course is observed. The risk of rupture is proportional to the diameter, and is increased in aneurysms over 5.5 cm. The cases should be treated under elective condition before rupture development.[1,2,3]

Clinical Presentation

Approximately 75% of the cases have asymptomatic course. Symptoms are usually manifested with the growth of aneurysm sack, and rupture, embolization and thrombosis as a result of the pressure of this growth to surrounding tissues.[2]

Clinical symptoms can be examined in three groups:

1- Asymptomatic period: Includes approximately 75% of AAAs, and is detected by routine examination or testing.

2- Symptomatic period: The most common symptom is abdominal and low-back pain. Abdominal pain may be continuous or intermittent, mild or severe. As a result of the pressure of aneurysm sack, nausea, vomiting, dyspepsia may occur. It may manifest itself with extremity ischemia due to distal embolization or aneurysm thrombosis.

3- Rupture Period: Severe abdominal and low back pain that has sudden onset and do not change with position indicates rapid growth or rupture. Approximately 20% of the cases in our country admits to hospital with rupture. Rupture patients are in shock, cold, sweaty and hypotensive.[2,4]

Diagnosis

Detection of aneurysms over 3.5 cm with physical examination is actually 15%.5 Currently, ultrasonography (USG) remains to be valueble for the initial diagnosis. Also, Contrast-enhanced Computerized Tomography (CT) which is a successful, relatively cheap, fast, and a reliable diagnostic modality in showing the rupture and aneurysm extension is a good option especially in patients who will undergo surgery. Contrast-enhanced CT should include thoracoabdominal sections. This way, accompanying thoracic aneurysms can also be detected. Angiography should be preferred generally in cases with accompanying peripheral arterial disease, renal artery stenosis or fistulization suspicion.

While mortality (30-day) in elective surgery cases is approximately 5%, it is around 50% in rupture patients. As this rate only includes the patients who reach the hospital, the real mortality rate of ruptured abdominal aneurysms is around 90%. Due to high mortality of the rupture, early diagnosis and elective treatment show the importance USG screening especially in patients over 60-65 years with AAA-related risk factors.

AAA related risk factors:

- Smoking
- Family history
- Hypertension
- COPD (Chronic obstructive pulmonary disease)
- Atherosclerotic disease (carotid stenosis, peripheral artery disease, etc.)
- Peripheral artery aneurysm (especially popliteal and iliac artery)

Treatment

Aneurysm diameter has a great importance in the treatment of AAAs. The risk of rupture development under 5 cm is reported to be 5%.[6] Annual risk of rupture that is increased proportionally with aneurysm diameter has been stated to be 0% for <4 cm, 1% for 4.5 cm, 11% for 5.5 cm and 26% for 6.5 cm. As is seen, there is a logarithmic relation between diameter increase and the risk of rupture. Many surgeons believe

that surgery should be preferred in conditions in which the risk of rupture is more than the operative risk. One group advocates early surgical intervention (under 5 cm) and states that operative mortality is very low in young cases with low risk of surgery, that comorbidity and surgical risk may increase with the advancing age, and that for these reasons early surgical intervention is a good option.

In AAA with the diameter of 3-5 cm, in patients with no or less than 0.5 cm annual aneurysm diameter increase, follow-up is recommended.

- Patients whom recommended operative treatment (Surgery indications)
- Patients with an active live and AAA diameter of 5.5-5.9 cm
- All patients with the diameter of 6 cm and over
- Symptomatic patients with rapid diameter increase (>0.5cm in 6 months)
- There are two strategies as surgical treatment methods.
  - Open surgery
  - Endovascular surgery (EVAR)
- While 30-day mortality of open surgery technique in elective AAA repair in 5%, and it has

15-30% rate of major complications.[7] Operative mortality may reach upto 50% in high risk patients.[8] Foreseeable major risks during classic surgical intervention are perioperative cardiac injury, and respiratory and renal failure.

At the present day, in addition to AAA screening, another factor that may reduce mortality rate and is a new treatment modality is endovascular aneurysm repair (EVAR) which is becoming widespread with fields of indication increasing day by day.

EVAR is applied since 1990s. In our country and our clinic, it became available in 2000s. It is a minimal invasive method as the physiological stress in the body and mortality rate is 3-fold less than open surgery, it is associated less morbidity and shorter anesthesia and intensive care period.9 The efficacy of this method is still being investigated in clinical trials, and the trials in which the early- and medium-term results can be assessed were conducted (UK-EVAR, DREAM, EU-ROSTAR). Long-term results remain to be unknown. [10,11,12,13,14,15]

Eligibility for EVAR Treatment: In order for AAA cases to be eligible for endovascular procedure, they need to have vascular anatomic properties. Contrast-enhance multislice CT and angiographic imaging are used for this. **According to this:**

- Aneurysm neck length should be > 15mm
- Diameter of the neck should be < 30 mm
- Neck angle should be > 60°
- Mural thrombus in the neck should be < 2 mm
- The diameter of external iliac artery should be > 7 mm
- Iliac angle should be > 90°
- Terminal aorta (Common iliac artery bifurcation) should be > 20 mm.

Grafts used in EVAR Treatment: As the initial grafts had aorto-aortoic tubular structure, there was a high rate of early complications. At the present day usually, branched (aorto-biiliac) or straight aortoiliac (aorto-uniiliac) grafts with stent are used. When uniiliac grafts are used, the contralateral iliac artery is occluded, thereby femoro-femoral bypass is performed. With the development of fenestrated stent grafts, stent extension at suprarenal level is also possible. Thus, it facilitates the treatment AAA with short proximal nect or extending to suprarenal level.

Endovascular AAA repair can be applied under local, regional or general anesthesia. It is a technique which does not require major abdominal surgery. With this aspect, it is preferable in high-risk (serious cardiopulmonary disease or advanced age, accompanied morbid obesity and previous abdominal surgery) cases. However, after its feasibility is understood, it was started to be used in many patients with moderate and low risk patients with anatomical suitability. Its area of use gradually increases.16 However, there are problematic conditions associated with this treatment modality in-

cluding anatomical nonconformity, endoleak, graft occlusion, aortic balloon dilatation.

The advantages of Endovascular Treatment Moda-lity in AAA

- Short period of procedure
- No cross-clamp use
- Less organ injury
- Less loss of blood, hence less blood transfusion
- Oral feeding within a short span of time
- Short duration of hospitalization

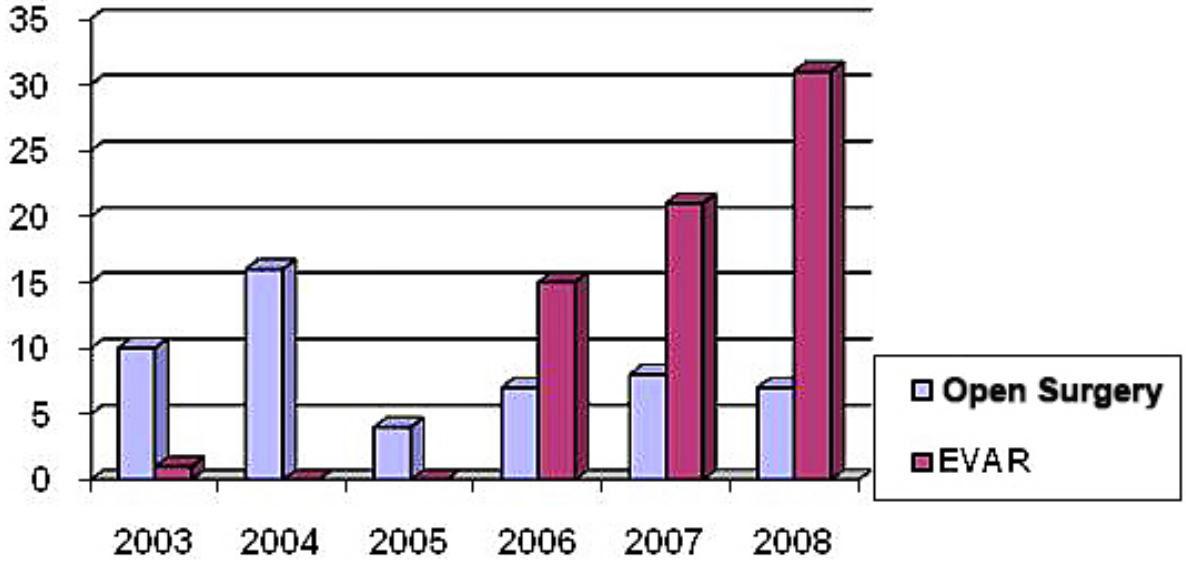
Due to great advancements in technology within the last 10 years, the tendency to EVAR as treatment modality in AAA cases has increased. In the upcoming years with more advanced devices, approximately 90% of AAA is thought to be treated with this method.[9]

In Izmir Ataturk Training and Research Hospital Cardiovascular Surgery Clinic, EVAR administration in AAA was started in 2003, and successfully applied to 68 patients with infrarenal AAA until the end of 2008. In our clinic, one of the pioneers of EVAR in the world and Turkey, open surgery treatment of AAA gradually decreases and EVAR treatment is increasing. **(Figure 1)**

Though the long-term mortality and morbidity results of patients who underwent endovascular treatment modalities are unknown, we recommend endovascular treatment to be administered in patients with high risk for open surgery and in centers with proper hybrid operating room conditions.

In view of the tendency for less invasive methods for the treatment option in recent years, cardiovascular surgeons should review their positions on this. Assuming the 52% of the vascular interventions in 2012 will be performed via endovascular routes, the importance of this will be understood again. Cardiovascular surgery specialists are at a crossroads.

Also, new regulations should be made with rapid review of training programs of Cardiovascular surgery. Our centers should understand the importance of hybrid operation room, and make efforts to establish them.



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Received: 23/11/2014
Accepted: 04/03/2015
Published: 15/10/2015

Disclosure and conflicts of interest:
Conflicts of interest were not reported.

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EJCM 2015; 03 (2): 24-26 Doi: 10.15511/ejcm.15.00224

Life saving collaterals: Right-to-left and left-to-right

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Abstract

Coronary collaterals are anastomotic connections between portions of the coronary arteries. The coronary collateral circulation as an alternative source of blood suply has shown benefits such as limited infarct size, left ventricular remodelling and preserved left ventricular systolic functions.

Keywords: Coronary artery disease, collateral circulation, prevention.

Kocabaş U., Özyurtlu F. and Çöllü B. Life saving collaterals: Right-to-left and left-to-right EJCM 2015; 03 (2): 24-26. Doi: 10.15511/ejcm.15.00224.

Case

A 48 year-old male patient referred to cardiology clinic with typical anginal symptoms. There was not any remarkable disease in the patient's previous medical history. The 12-lead electrocardiogram showed ischemic changes. Transthoracic echocardiography showed mild hypokinesia in inferior wall, left ventricular ejection fraction was preserved and calculated 50% with Simpson method. Coronary angiography revealed chronic total occlusion of right coronary artery (RCA) and left-anterior descending (LAD) artery both. Interestingly, coronary collaterals originate from proximal part of RCA were retrogradely filling the total occlused LAD and supplies enough flow to the LAD area at risk for infarction **(Panel A, black arrows and asterisk)**. Following retrograde filling of LAD, septal collaterals which originated from the retrogradely filled LAD were seen to fill distal RCA retrogradely again and supplies enough flow to the RCA area at risk for infarction **(Panel B-D, black arrows)**. Those united collaterals were successful at providing the blood supply, although with the chronic total occlusion of both RCA and LAD, a large area of myocardial ischemia was under at risk. The patient underwent coronary artery bypass graft surgery.

Discussion

Patients with coronary artery disease, coronary collateral circulation is associated with a reduction in infarct size, left ventricular dysfunction and cardiovascular events, which translates into a relevant improvement in survival.[1] Well-developed coronary collaterals may help protect the myocardium from infarction during episodes of ischemia and may extend the limited number of valuable "golden hours" from the onset of an acute myocardial infarct to successful coronary reperfusion.[2]

In our case, myocardial salvage by extent collateral circulation is very likely in the presence of preserved left ventricular ejection fraction and protect heart from myocardial infarction despite the total occlusion of RCA and LAD.

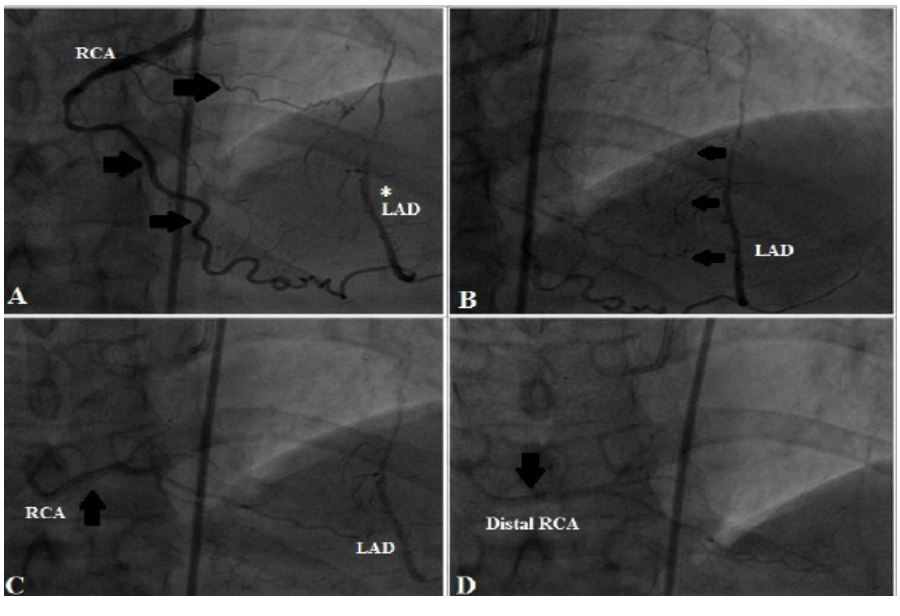

Figure legends:

Panel A-D: Collateral circulation originating from chronic total occluded right coronary artery (RCA) is retrogradely filling chronic total occluded left-anterior descending artery (LAD) (***Panel A, black arrows and asterisk***), septal collaterals developed from retrogradely filled LAD, supplying blood flow to the distal part of chronic total occluded RCA (***Panel B, black arrows)***, distal RCA filling by septal collaterals originated from retrograd filled LAD again (***Panel C-D, black arrows***).

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Received: 24/02/2015
Accepted: 11/09/2015
Published: 15/10/2015

Disclosure and conflicts of interest:
Conflicts of interest were not reported.

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EJCM 2015; 03 (2): 27-30 Doi: 10.15511/ejcm.15.00227

Left ventricular myxoma

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Abstract

A 31 year-old woman complaining of mild dyspnea and fatique was admitted to our clinic.A two-dimensional echocardiogram revealed a 2x2 cm mobile mass in the left ventricle. A 2 x 3 cm mobile,pedinculated,gelatinous mass originating from the left ventricular lateral wall was removed by left ventriculotomy and histological features of the tumor indicated a myxoma.

Keywords: Left ventricular myxoma,left ventricular mass,cardiac surgery

Kutsal A, Koç M. Left ventricular myxoma. EJCM 2015; 03 (2): 27-30. Doi: 10.15511/ejcm.15.00227.

Introduction

Myxomas are round or oval tumors with a smooth or slightly lobulated surface.Most are polypoid,relatively compact,pedunculated,and mobile.Although intracardiac myxoma is the most common tumor of the heart with an estimated incidence of 0.5 per million population per year,only 3-4 % of myxoma occur in the left ventricle[1,2,3].

Myxoma has the potential of producing a triad of obstruction,embolisation and constitutional symptoms. The symptoms have varied greatly, depending on the size and the localization of the tumor. Systemic manifestations,which are noted in 90 % of patients consist of weight loss, fever, anemia, elevated sedimentation rate and elevated immunglobulin concentration (usually IgG). Surgery should be performed as soon as diagnosis is confirmed.

Left ventricular myxoma may be removed via the left atrium, left ventricle or transaortic approach. Tumor in the left ventricle outflow tract may be approached transaortically[4], but this approach carries an increased risk for systemic embolization.[5] Left-sided transatrial exposure alone may be difficult to achieve without risking any damage to the subvalvar apparatus of the mitral valve. Ventriculotomy is another approach with possible damage to small coronary artery branches.[5] Adequate surgical approach is important for preventing complications and recurrence.

Case Report

A 31 year-old woman complaining of mild dyspnea and fatique was admitted to our clinic. Physical examination were normal. A two-dimensional echocardiogram revealed a 2x2 cm mobile mass in the left ventricle. In addition to the routine blood tests, immunglobulin concentrations ,C3c and C4 levels were measured. IgG (14.220 g/l),IgM (1.244 g/l), IgA (1.209 g/l) and C4 levels (0.230 g/l) were normal. C3c level was higher than normal (1.169 g/l).

With the diagnosis of left ventricular mobile mass (myxoma ?) she was operated. After performing median sternotomy and systemic heparinization cardiopulmonary bypass with bicaval and aortic cannulation was initiated. After systemic cooling to 300C, aortic cross clamp was applied and the heart was arrested with antegrade cold crystalloid cardioplegia. A left atriotomy was performed and the mitral leaflets were gently retracted. However,it was very difficult to reach the mass without damaging the subvalvular apparatus of the mitral valve. Therefore left ventriculotomy was performed.

A 2 x 3 cm mobile, pedinculated, gelatinous mass originating from the left ventricular lateral wall was re-

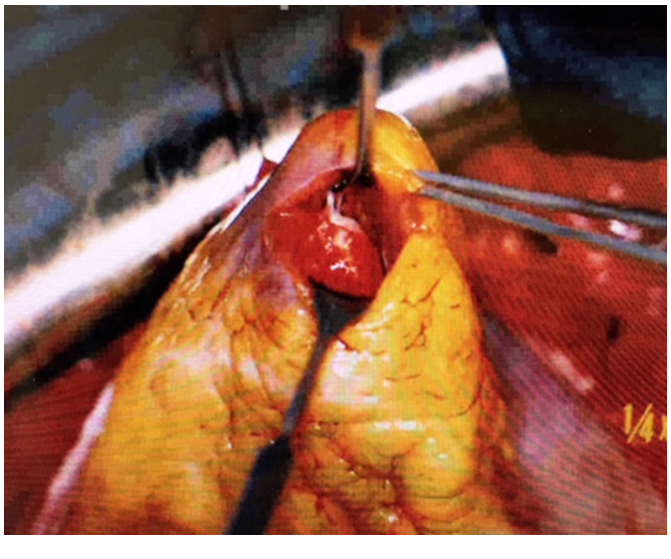

Figure 1: The appearence of the myxoma through the ventriculotomy.

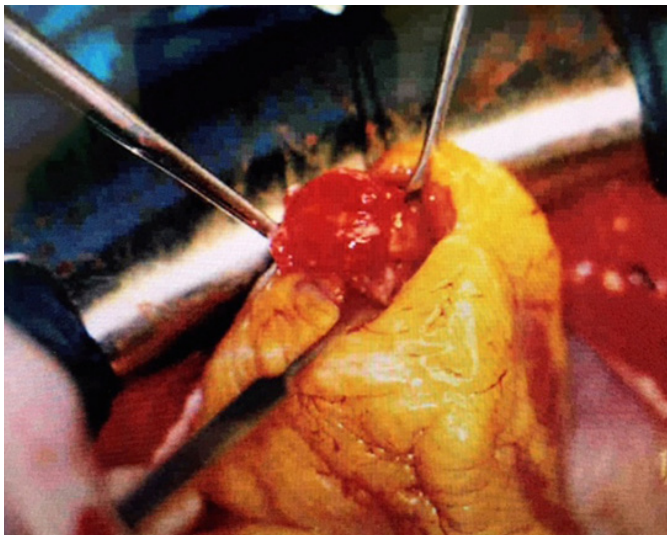

Figure 2: A 2x3 cm,pedinculated gelatinous mass was resected.

moved. Then left ventriculotomy was closed with teflon strips. Histopathological examination confirmed the diagnosis of myxoma.

The postoperative course was uneventful, and the patient was discharged on the sixth postoperative day.

One year follow-up revealed no recurrence,and she was asymptomatic.

Discussion

Intracardiac myxoma is the most common benign tumor of the heart which occurs most commonly in women from 30 to 60 years of age. Children have a higher incidence of ventricular myxoma than do adults.[6] Women are affected 3 times more often than are men and a short duration of symptoms is also characteristic. Emboli from left ventricular tumors may mimic multiple sclerozis.[7] Accurate preoperative information about a myxoma in relation to its shape, size, mobility, texture, number of lesions and the clear localization is indispensable for determining the most appropriate operative procedure.[8] Two dimensional echocardiogram or MRI are adequate diagnostic modalities for these information.

To minimize the risk of perioperative embolism, gentle handling of the heart during cannulation is important.Transaortic,transmitral or transvantricular approach may be employed for left ventricular myxomas. Transventricular approach should be avoided when ever possible in order not to impair the left ventricular function. The deepest localization of the myxoma in the left ventricle in our patient forces us to perform a ventriculotomy .We performed transmitral approach first, but as it was impossible to resect it without damaging the subvalvular tissue, we performed ventriculotomy. Both the myxoma and its pedicle were excised totally.

Following excision of the myxoma, the atrium and ventricle should be irrigated and aspirated carefully for any residual tumor fragments.[9]

It is concluded that excision of the cardiac myxoma is curative and radical tumor excision may prevent recurrence. The possible causes of recurrence are inadequate resection, tumor implantation during the operation,and multicentric growth.[10] At present, it is generally believed that the multigrowth potential of the tumor seems more important than inadequate surgical resection in determining recurrence. Even if benign, a recurrent myxoma may be clinically more agressive than the primary tumor. The recommended approach during a secondary operation includes a thorough inspection of all cardiac chambers and complete excision of all growths, with a wider and deeper margin of underlying endocardium than usual. Regular follow up with serial two-dimensional echocardiograms is particularly important in this group, who are at a high risk for the development of additional metachronous cardiac lesions. Despite careful operation for recurrent myxoma, the risk of a second recurrence is high and has been estimated at 25 %.[10]

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Received: 14/03/2015
Accepted: 19/07/2015
Published: 15/10/2015

Disclosure and conflicts of interest:
The authors declare no conflict of interest.

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EJCM 2015; 03 (2): 31-34 Doi: 10.15511/ejcm.15.00231

Alternative intervention for pericardial effusion article type: Case report

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Abstract

Pericardial effusion is defined as the increase in the fluid levels between pericardial sheets. It may occur as a result of many etiological factors. Cardiac tamponade is the most important complication of the Pericardial effusion. Therefore it requires close follow-up and primary treatment. There are many treatment approaches. It can be treated with pericardiocentesis needle and catheter, surgical pericardial window opening with subxiphoidal approach and left anterior thoracotomy, pericardiectomy with open thoracotomy and video thoracoscopic pericardiectomy assists (VATS) can also be applied. Nowadays especially for recurrent PE less invasive procedures are becoming more popular than open surgery. For this reason in this article, we mentioned about video assisted thoracoscopic surgery (VATS) method in a patient diagnosed with a recurrent pericardial effusion without any underlying etiologic factors. VATS method should be considered in elective cases which pericardiocentesis cannot be drained, effusion with fibrinous formation, treatment of posterior side effusions. VATS method is recommended especially in patients with pericardial effusion accompanied by pleural and lung disease.

Keywords: Pericardial Effusion, cardiac tamponade, video assisted thoracoscopic surgery.

Atay M., Saydam O., Bakuy V., Şahin A. Alternative intervention for pericardial effusion article type: Case report. EJCM 2015; 03 (2): 31-34. Doi: 10.15511/ejcm.15.00231.

Introduction

Pericardial effusion (PE) is defined as the increase in the fluid levels between pericardial sheets. It may occur as a result of many etiological factors. Cardiac tamponade is the most important complication of the PE.[1] Therefore it requires close follow-up and primary treatment. Many medical conditions can cause PE such as viral and bacterial infections, cancer, trauma, myocardial infarction, renal failure, autoimmune disease and idiopathic.[1] There are many treatment approaches. It can be treated with pericardiocentesis needle and catheter, surgical pericardial window opening with subxiphoidal approach and left anterior thoracotomy, pericardiectomy with open thoracotomy and video thoracoscopic pericardiectomy assists (VATS) can also be applied.[2]

Nowadays especially for recurrent PE less invasive procedures are becoming more popular than open surgery. For this reason in this article, we mentioned about video assisted thoracoscopic surgery (VATS) method in a patient diagnosed with a recurrent pericardial effusion without any underlying etiologic factors.

Case

58 years old male with no known medical history was admitted to the cardiology clinic with shortness of breath and fatigue. His blood pressure was 90/55 mmHg and heart rate was 98 bpm. In his physical examination jugular venous distention was observed and hearth sound was unremarkable. An electrocardiogram showed low QRS voltage and abnormal P wave changes. X-ray showed cardiomegaly and pulmonary vascular congestion. Laboratory results show no evidence of any viral or bacterial infections. Cardiac enzymes were in normal range. Echocardiography was performed and showed severe PE, normal left ventricular ejection fraction of % 60 with normal left ventricular size and wall motion. Computerized tomography was performed to rule out etiological factors (**Figures 1**).

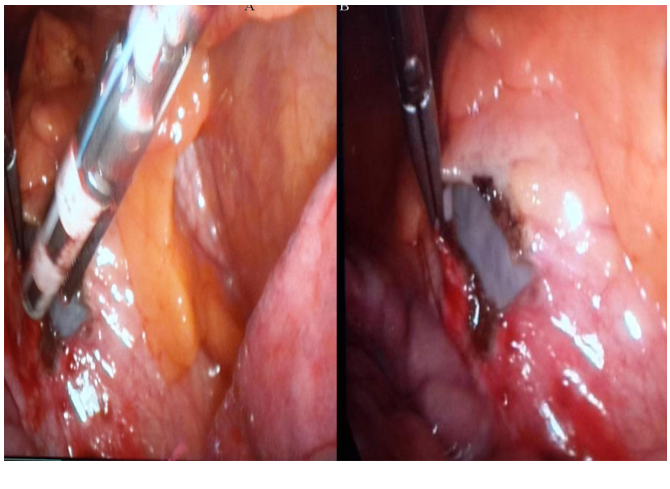
Therefore, needle pericardiocentesis performed under local anesthesia. 300 cc serous fluid was drained and sent to cytology. Two days after pericardiocentesis echocardiography showed decreased in pericardial effusion and showed normal left ventricular ejection fraction. Patient was discharged from hospital without any symptoms. Approximately 1 month after on this event, effort chest pain developed in patient. Electrocadiography showed ST depression in V4-6 and elevation in aVR. Coronary angiography performed. Critical isolated left anterior descending coronary artery (LAD) stenosis monitored in patient and stent was mounted. 2 months after the LAD stent placement the patient was admitted to the clinic again with shortness of breath. Echocardiography was performed and advanced pericardial effusion determined but this time pericardial effusion could not drained with pericardiocentesis due to fibrin formation. Thereupon, the patient was consulted and was hospitalized with operation plan in our clinic.

Endoscopic ports on the right side of the chest were placed under general anesthesia. Severe adhesions in the right lung were observed. Pericardium was seen after elimination of adhesions. About 2 cm incision was made on the pericardium. Pericardial fluid was drained (**Figures 2**). Pericardial fluid and material was sent to pathology. Drain was placed and layer was closed in anatomical plan. Postoperative follow-up period was normal and the patient was discharged after 4 days with healing.

Discussion

Pericardial effusion is defined as the increase in the amount of accumulation of fluid in the pericardi-

Figure 1A – 1B. **Preoperative computerized tomography images for pericardial effusion.**

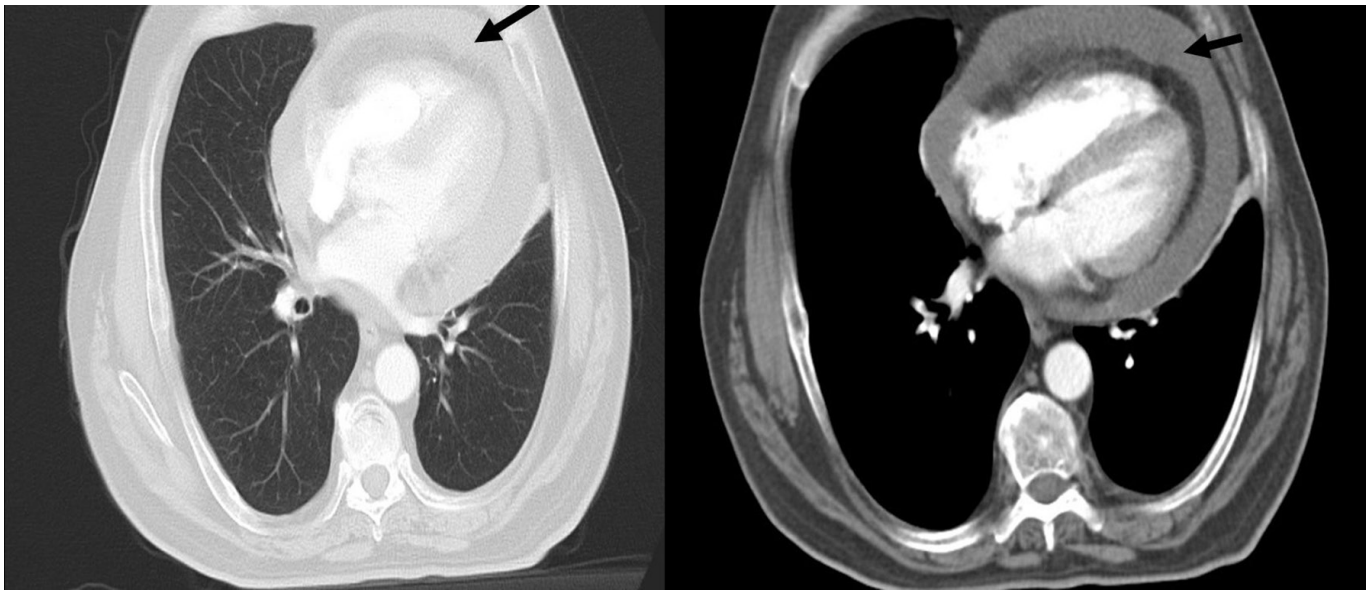


um. Cardiac tamponade is the most vital complication of pericardial effusion. Close follow should be performed with echocardiography. It can be treated with pericardiocentesis needle and catheter, surgical pericardial window opening with subxiphoidal approach and left anterior thoracotomy, pericardiectomy with open thoracotomy and video thoracoscopic pericardiectomy assists (VATS) can also be applied. There is no ideal method for the treatment of pleural effusion. Ensuring full and permanent drainage expected from an ideal method. Also, pericardial effusion material with biochemical, cytological and histological can be sampled with ideal method.

Furthermore, the method with the lowest risk and least invasive intervention for the patient should be selected.[2, 3] VATS procedure is a minimally invasive method. In this method unlike thoracotomy, ribs are not separated from each other, nerves and blood vessels are not damaged and the integrity of the chest cavity remains intact. Patients have less pain in the postoperative period. Studies shows patients undergo VATS method have better pulmonary function than the patients undergoing thoracotomy.[4, 5] Because VATS is performed under general anesthesia and due to the cost, the use of VATS is limited in patients requiring emergency intervention.

VATS method should be considered in elective cases which pericardiocentesis cannot be drained, effusion with fibrinous formation, treatment of posterior side effusions. VATS method is recommended especially in patients with pericardial effusion accompanied by pleural and lung disease.[6] VATS method provides good field vision, opportunities to get a sample of tissue and less postoperative pain. Because all of this result VATS treatment of pericardial effusion can be used safely and effectively.

Figure 2A – 2B. Peroperative images of surgical field for opening pericardial window



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Received: 18/04/2015
Accepted: 27/07/2015
Published: 15/10/2015

Disclosure and conflicts of interest:
Conflicts of interest were not reported.

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EJCM 2015; 03 (2): 35-39
Doi: 10.15511/ejcm.15.00235

Heart sarcoma and invasion of the mitral valve: Case report

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Abstract

Primary cardiac sarcoma is a malignant and rare type of tumor that occurs in the heart. About 25% of primary cardiac tumors are malignant, and 95% of these are sarcomas. The most common cardiac sarcoma is the angiosarcoma (about 37%), while others include undifferentiated sarcoma (24%), malignant fibrous histiocytoma (MFH) (11%–24%), leiomyosarcoma (8%-9%), and osteosarcoma (3%–9%). The diagnosis of these tumors is made by imaging techniques and pathological study. This new case report is an opportunity for us to make a reminder of this little-known entity among cardiologists and heart surgeon.

Keywords: Cardiac sarcoma, mitral valve, malignant fibrous histiocytoma.

Redha L., Farid A., Rabeh B., at all. Heart sarcoma and invasion of the mitral valve: Case report. EJCM 2015; 03 (2): 35-39. DOI: **10.15511/ejcm.15.00235.**

Introduction

Primary cardiac sarcoma is a malignant and rare type of tumor that occurs in the heart. About 25% of primary cardiac tumors are malignant, and 95% of these are sarcomas. The most common cardiac sarcoma is the angiosarcoma (about 37%), while others include undifferentiated sarcoma (24%), malignant fibrous histiocytoma (MFH) (11%–24%), leiomyosarcoma (8%-9%), and osteosarcoma (3%–9%). Less encountered primary tumors of the heart include rhabdomyosarcoma, liposarcoma, fibrosarcoma, synovial sarcoma, and hemangiopericytoma, with the least reported cardiac tumors being the intimal (spindle cell) sarcomas.

The mean age of presentation is around 40 years with no sex predilection. Patients present after variable periods of symptoms which are often non-specific, ranging from few weeks to several months and almost all are symptomatic at presentation. The diagnosis of these tumors is made by imaging techniques and pathological study.

Objective

This new case report is an opportunity for us to make a reminder of this little-known entity among cardiologists and heart surgeon.

Methods

We report the case of 39 years old female presented with 2 months history of acute onset dyspnea, lethargy, weight loss, night sweats, and malaise. Clinical examination, blood tests and chest x ray were unremarkable.

Chest X ray:

Echocardiography: Showed:

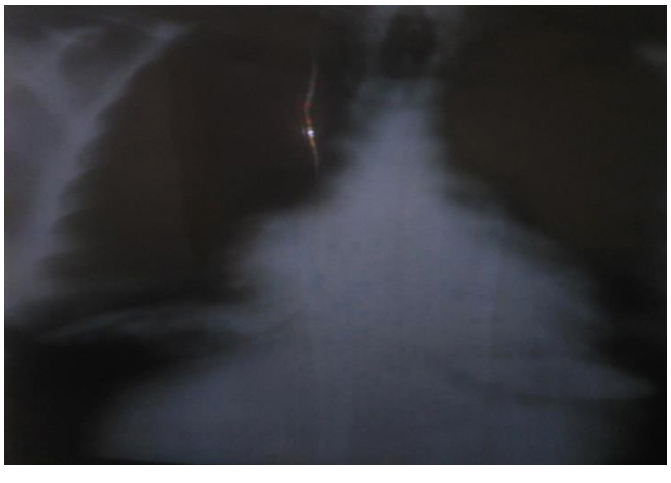

Figure 1. Chest X ray

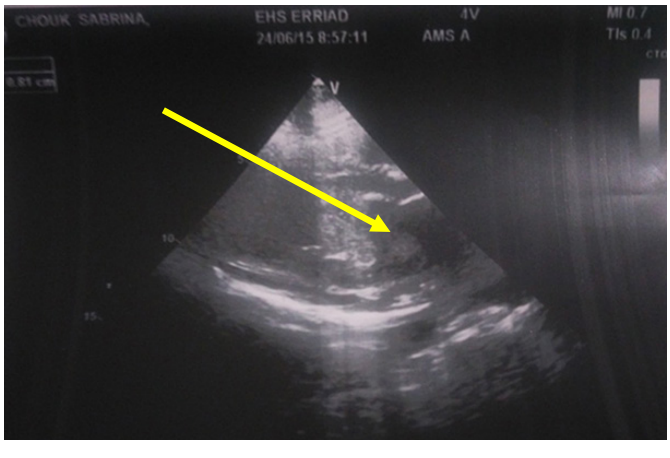

Figure 2. Echocardiography showing a tumor in the posterior wall of left atrium

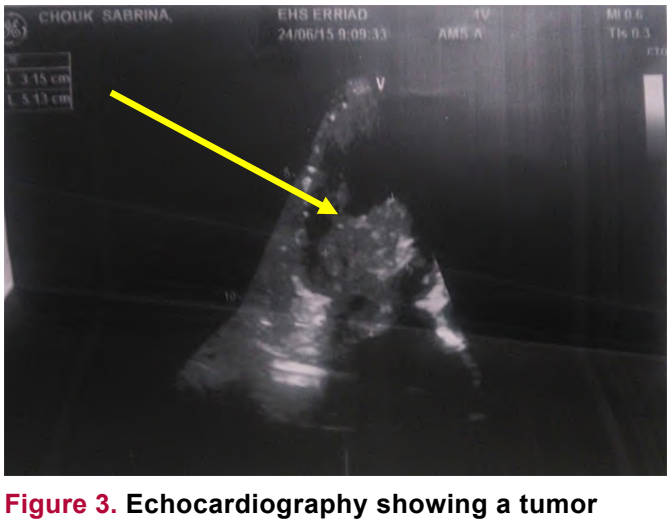

Figure 3. Echocardiography showing a tumor in the posterior wall of left atrium

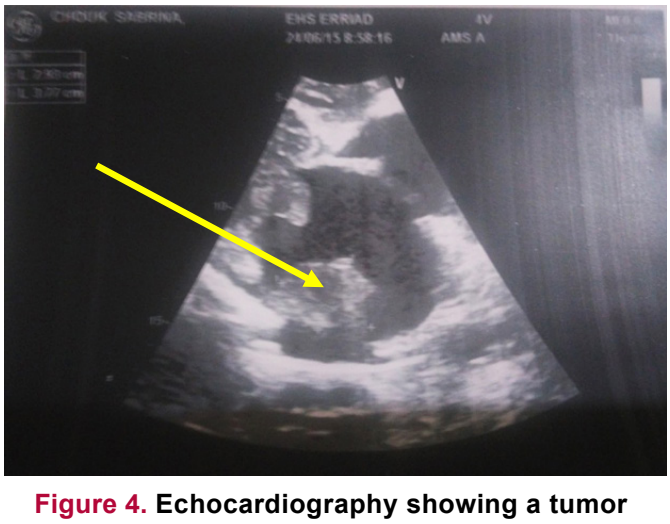

Figure 4. Echocardiography showing a tumor in the posterior wall of left atrium

A large (3, 8 × 2, 4 cm in diameter) echogenic and multi lobular mass in the left atrium with moderate mitral regurgitation. It is observed that the mass has invaded the left atrial wall and mitral valve.

Transesophageal echocardiogram (TEE) and computed tomographic (CT) scan: Don't realize.

Surgery

She was referred for surgical assessment after the findings of left atrial mass. The patient was opered under cardiopulmonary bypass. The approach was sternotomy.

The per operative exploration: Infiltrating the left atrial wall and mitral valve. A curative resection was deemed impossible. At surgery a large tumor was found arising from the left atrial side. It was solid in consistency and had a wide base. It was partly extending to mitral valve.

The guesture was resected of tumor as completely as possible and mitral valve replacement under CPB.

Macroscopic examination of the cardiac specimen revealed polypoid atrial masses weighing 30.4 grams with a side to side dimension of 4.3cm, length of up to 4.5cm, and a thickness of up to 2.9cm from the atrial endocardium. The mass involved the atrial wall posteriorly and the entire posterior mitral leaflet, except for its free margin. The most protuberant part of the mass was

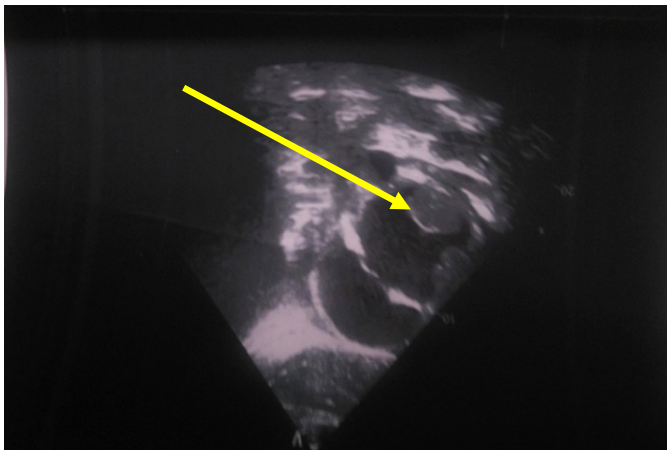

Figure 5. Echocardiography showing a tumor in the posterior wall of left atrium

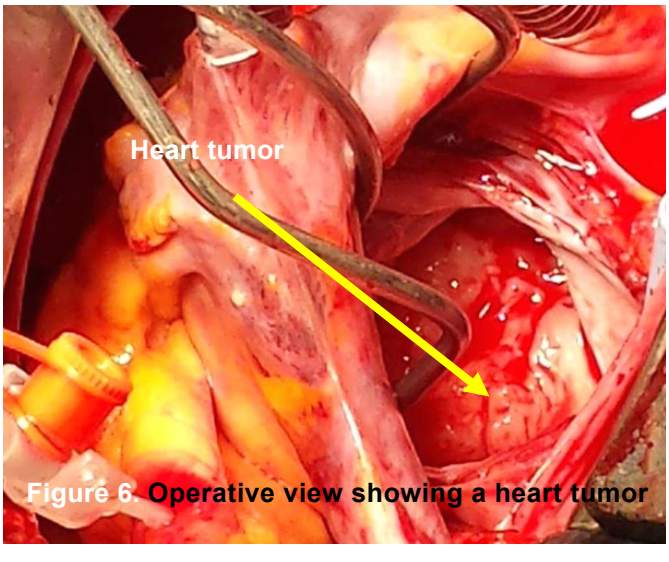

Figure 6. Operative view showing a heart tumor

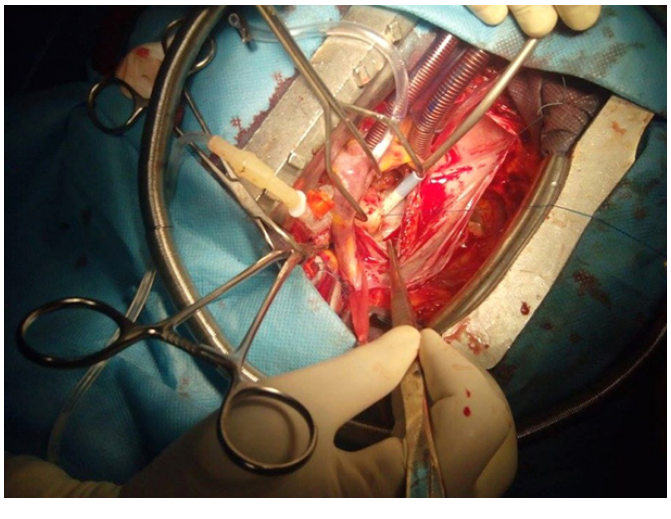

Figure 7. Operative view showing a heart tumor

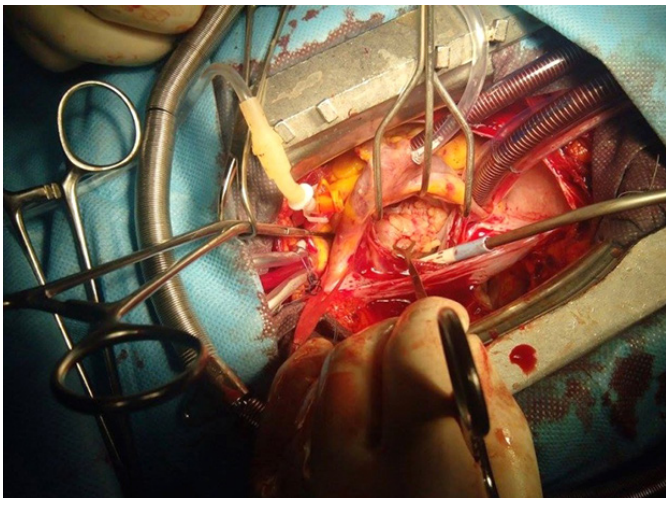

Figure 8. Operative view showing a heart tumor

considerably softer in consistency and deeper yellow in color with small darker areas.

Results

Duration of CPB: 123mn.

Aortic clamping: 108mn.

The immediate postoperative course was simple.

Stay in intensive care unit: 48 hours.

Intubation procedure: 14hours.

Post operative stay: 07days.

Histopathologic examination of the left atrial mass showed an heart sarcoma. She underwent chemotherapy.

Comments

Sarcomas of the left atrium are extremely rare primary cardiac tumors. Histologically, heart sarcomas are usually poorly differentiated mesenchymal malignant tumors of fibroblastic or myofibroblastic differentiation, consisting of atypical spindle cells with variable degrees of atypia, mitotic activity, necrosis, and nuclear polymorphism. The tumor may exhibit large myxoid areas and or epithelioid appearance of tumor cells. Tumor cells may resemble leiomyosarcoma and rarely exhibit areas of rhabdomyomatous, angiosarcomatous.

The prognosis of cardiac primary sarcomas is generally poor. These tumors are highly aggressive with the mean survival being 3 months to 1 year. Cardiac tumors can cause significant morbidity and mortality. The effects of a cardiac tumor depend on its anatomical location in the heart, size, invasiveness, friability, and the rate of growth. The most important factor affecting the prognosis of these tumors is the anatomical location in the heart (intracavitary versus intra/extramyocardial growth).

Although aggressive surgery can offer dramatic palliation of symptoms caused by valvular and/or vascular obstruction, local recurrence and metastasis occur frequently and early, usually within 1 year. Chemotherapy and radiation therapy have limited benefit.

Conclusion

Heart surgery is the treatment of choice for sarcoma. Cardiac sarcomas generally lead to death within 2 years of diagnosis, due to rapid infiltration of the myocardium of the heart and obstruction of the normal flow of blood within the heart.

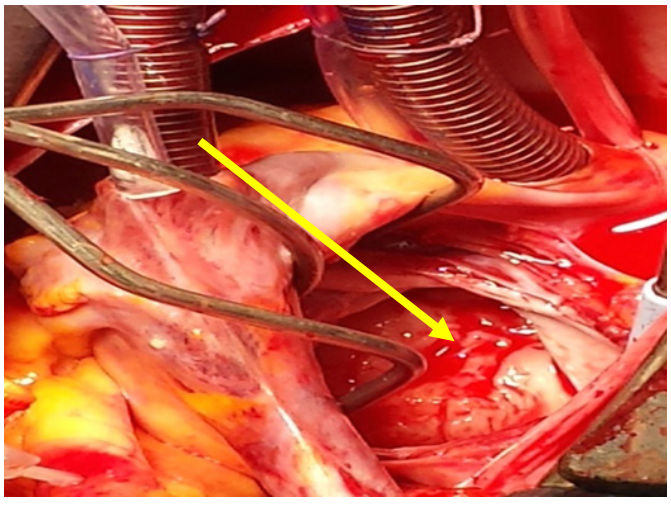

Figure 9. Operative view showing a heart tumor

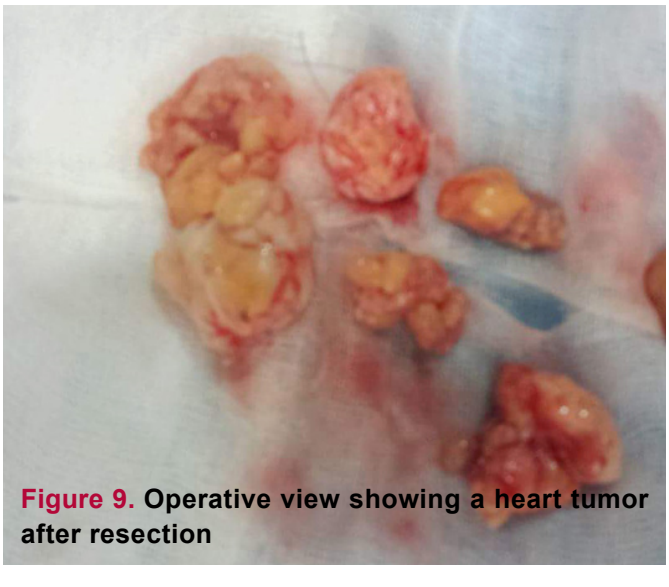

Figure 9. Operative view showing a heart tumor after resection

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Received: 17/03/2015
Accepted: 27/08/2015
Published: 15/10/2015

Disclosure and conflicts of interest:
The authors declare no conflict of interest.

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The publication of an article in a peer-reviewed journal is an essential building block in the development of a coherent and respected network of knowledge. It is a direct reflection of the quality of work of the author and the institutions that support them. Peer-reviewed articles support and embody the scientific method. It is therefore important to agree upon standards of expected ethical behavior.

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