

Volume 10 ■ Supplement 1 ■ 2007

A Cardiothoracic Multimedia Journal

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Abstracts of the Third Annual Congress on
Update in Cardiology and Cardiovascular Surgery

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INT-21 - LAPAROSCOPIC TRANSABDOMINAL APPROACH FOR AORTIC VALVE IMPLANTATION

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BACKGROUND: Percutaneous aortic valve implantation is an alternative high-risk surgical candidates. The antegrade, trans-apical approach may have advantages over retrograde or transseptal techniques due to simplified access to delivery and the avoidance of arterial anatomy or pathology. Aortic valve implantation via a mini-thoracotomy and left ventricular apical puncture have been described. We propose a novel transabdominal, transdiaphragmatic modification to transapical aortic valve delivery using laparoscopic instruments. We describe our initial in vivo animal and human cadaver experience with this technique.

METHODS: The apex of the left ventricle was exposed in four swine and one human cadaver. Laparoscopic ports were introduced into the abdomen, and access to the mediastinum was obtained through the diaphragm. A prosthetic purse-string suture was applied laparoscopically to the beating left ventricle. It was possible to insert a 10mm glass rod into the LVOT through the purse-string suture.

RESULTS: The apices of the hearts were easily exposed in all cases through the diaphragm. The mean time required to expose the LV apex once laparoscopic ports were placed was 20 minutes. The pleural cavities were entered. Direct visualization of the intrapericardial anatomy was possible using the laparoscope while the heart continued to beat.

CONCLUSION: The left ventricular outflow tract can be reliably accessed and instrumented through a laparoscopic, transabdominal, transdiaphragmatic approach. This technique may facilitate the trans-apical deployment of an aortic valve in circumstances where the avoidance of thoracotomy might be advantageous.



Laparoscopic apex exposure. Laparoscopic view of the left ventricular apex as seen from the abdominal cavity after a window has been created in the diaphragm.

INT-22 - SIZING THE PROSTHESIS TO TREAT VALVULAR INSUFFICIENCY IN SUPRACORONARY REPLACEMENT OF THE AORTA

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Complicated aneurysmatic dilatation of the ascending aorta often involves the sinotubular junction (STJ), which results in valvular incompetence even if the leaflets are structurally intact. The dislocated commissures can be readjusted by various methods. The essential part of this operation is the choice of the appropriate sized prosthesis necessary for restoring competence of the valve.

Previously used geometric principles are derived from anatomical studies. The authors describe a new transesophageal echo-controlled intraoperative technique, to determine the appropriate size of the neo-STJ.

The dynamic remodeling is carried out on beating heart - at closed aorta which besides notable time-sparing may reflect more the function than the anatomy of the root. The method significantly reduces the cross clamp time, and provides reliable informations of the aortic root under pressure conditions.

The STJ reduction may be applicable very effectively with a simple allipered-silk strap in carefully selected cases where the aortic regurgitation is proven to be caused by the radial expansion of the commissural distances.

**INT-23 - MID-TERM RESULTS OF MODIFIED MAZE PROCEDURE FOR CHRONIC ATRIAL FIBRILLATION IN PATIENTS WITH MITRAL VALVE DISEASE**

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OBJECTIVE: We have performed a mini-maze procedure and LA procedure for eliminating chronic atrial fibrillation associated mitral valve disease. This study evaluates the results of 24±15 months mean follow-up and reports the outcome.

METHODS: From March 2003 to September 2006, 42 patients were enrolled in this study. Patients were divided into two groups (mini-maze procedure; n=19, LA procedure; n=23). Electrocardiogram and echocardiogram were performed immediately, 1 week, after 6 months postoperatively. **RESULTS:** The mean age (50.4±8.8 vs. 50.8±9.8 years), preoperative left atrial size (5.9±0.8 vs. 5.6±0.7 cm), mean pulmonary artery pressure (37±16 vs. 40±8 mmHg), mean left atrial pressure (19±2 vs. 20±4 mmHg), NYHA functional class (2.4±0.4 vs. 2.3±0.3), duration of AF (4.0±3.8 vs. 4.1±3.1 year) and left ventricular ejection fraction (51±7% vs. 49±9%) were similar between the groups. There was no operative mortality or morbidity associated with this procedures, during follow-up. There are no significant difference in aortic cross-clamp times (133±24 vs. 127±27 min). At 7 days postoperatively sinus conversion rate were 79% vs. 78% and after 6 months follow up sinus rhythm maintenance rate were 84% vs. 78% between mini-maze procedure and LA procedure group, respectively. The left atrial size was reduced and left ventricular ejection fraction was improved in both groups during follow-up, but there were no significant between each group.

CONCLUSIONS: The modified maze procedure such as mini-maze and LA procedure are effective surgical option in treating chronic atrial fibrillation in patients with mitral valve disease in terms of sinus conversion.

INT-24 - CLINICAL RESULTS FROM STENTLESS AORTIC VALVE REPLACEMENT

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BACKGROUND: Mechanical either biologic prosthesis have some disadvantages such are continuous anticoagulation therapy, lost Valsalva sinuses influence on blood flow, or middle pressure gradient. With this study we evaluated clinical results of stentless 3leaflets pericardial patch in patients undergoing aortic valve replacement.

METHODS: We created this stentless valve using bowine/equine pericardium, replacing valve cusps on aortic fibrous ring of patient. The ring of patient's aorta was used as guide for sizing this valve. Leaflets are implanted separately; using continuous sutures with 2 supported stitches at newly created commissurae without a stent or sowing ring. Patients with aortic valvular stenosis have been included. Intraoperative and postoperative TEE was performed for every created valve.

RESULTS: 30pts with aortic valvular disease (25 with aortic stenosis, 4 with aortic insufficiency and 1 with bicuspid aortic valve) had been included in study. Intraoperative TEE showed aortic morphology similar as normal, dp/dt ratio was 0.08, equal opening and closing time, average valve gradient was 8. Middle aorta cross clamping time was 51min, and bypass time 72min. 4 patients got a aortocoronary bypass in combination (2.3grafts per pts) Average extubating time was 7.8h. Significant bleeding was noted in 4pts (1with/3without surgical etiology). Pts have been treated with aspirin 0.1mg/day and simvastatin. 1 patient developed middle aortic regitation. Mortality rate was 6.7% (2pts). Follow up period 1-12 months.

CONCLUSIONS: Real stentless aortic valve bio prosthesis is with a close morphology and haemodynamic parameters as a normal valve. Patients have good prognosis, with appropriate haemodynamic response on physical stress.

CVS-030 - SUPRACORONARY MYOTOMY FOR MYOCARDIAL BRIDGING IN THE SETTING OF HYPERTROPHIC CARDIOMYOPATHY: OFF & ON-PUMP EXPERIENCE IN THE YOUNG

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Myocardial bridging is a rarely observed but well known pathology of the major epicardial coronary arteries which are embedded by overlying myocardial tissue. It is found with high frequency in young patients with hypertrophic cardiomyopathy. Myocardial bridging is associated with myocardial ischemia and infarction, cardiac arrhythmias and sudden death. The present case series reports the outcomes of four symptomatic patients with hypertrophic cardiomyopathy who underwent myocardial muscle debridging. Three patients were operated using beating heart technique without cardiopulmonary bypass. One patient had concomitant debridging and septal myectomy under cardiopulmonary bypass in order to release severe left ventricular outflow obstruction. We conclude that off-pump supracoronary muscle myotomy is a feasible treatment modality in young age group with non-obstructive hypertrophic cardiomyopathy.

CVS-031 - DIRECT CIRCULAR REPAIR FOR LEFT VENTRICLE ANEURYSM

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BACKGROUND: Most patients with large left ventricular aneurysm undergo either linear resection of the dyskinetic area or endoventricular patch repair. Both techniques have numerous beneficial effects, but also several adverse ones. In order to avoid these imperfections, direct circular repair (DCR) was created.

METHODS: After median sternotomy total revascularization was performed. With inspection the aneurysm localization was marked and the incision was started at the apex of the aneurysm, forwarded toward the border zone with a vital myocardium. For geometric reconstruction, a prolene purse string suture was placed within fibrous sewing ring and pulled to reduce the new created orifice to 1cm. Next, a prolene suture was used over two pericardial stripes to bring the circular cuff together. In case of aneurysmal septal involvement, incision is extended toward the posterior wall, followed by a profound circular suture; so dyskinetic septum is completely excluded. The final continuous over-and-over suture was applied over pericardial strips for definite hemostasis. Including criteria for our prospective study were: severe CAD, large LV aneurysm diagnosed by transthoracic and transoesophageal ultrasound.

RESULTS: From 03/00-12/06, 175 pts with anterior or aneteroapical aneurysm have been operated. Evident haemodynamic improvements were noted: decrease of EDV from 316.5 on 182 ml, ESV from 250 on 102 ml, increase of EF from 20.5% on 37.2%, and CI from 1.8 on 3.2. Valvular reconstructions were performed when indicated. 160pts had been operated under total warm cardioplegia. Mean intubation time was 9±2.3h, mean dosage of catecholamines was 0.03 µg/kg/min, average inhospital stay 10±4,6 days. Early mortality rate was 6.9% (12pts).

CONCLUSIONS: Direct circular repair ensures geometric reconstruction of the LV, without use of foreign body after maximal resection and exclusion of the non-viable myocardium. In combination with total myocardial revascularization and valvular reconstruction improves patient's condition with a good clinical benefit.

CVS-032 - A CASE OF HEPARIN INDUCED THROMBOCYTOPENIA WITH THROMBOSIS SYNDROME FOLLOWING CABG: HOW TO MANAGE IT?

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INTRODUCTION: Heparin induced thrombocytopenia-thrombosis syndrome (HITTS) is a rare immune mediated coagulation disorder that may manifest with multi organ failures due to thrombotic events. Herein we present a CABG patient who developed early onset HITTS postoperatively and resulted in limb amputation.

PATIENTS AND METHODS: 62-year-old male underwent CABGX3 (LIMA-LAD, Ao-SVG-RDP, Ao-SVG-OM2) operation because of 3-vessel-disease. On postoperative day 4 (PO4), he complaint of severe chest pain. In his ECG, there were ST segment changes in the anterior and inferior precordial leads. His cardiac enzyme assays were indicating an ischemic cardiac event. Clopidogrel and LMWH treatment were initiated immediately. On PO5, the patient complaint of a cold and numb left leg with loss of pedal pulses in his physical examination. The patient underwent thrombectomy procedure and thrombus material was extracted. On echocardiography, large thrombi material in both atria were seen. The platelet counts decreased to 39,000/dl. HITTS was suspected and LMWH treatment was discontinued. Fondaparinux Sodium treatment was initiated. Between PO6 ad PO19 left leg had been operated for recurrent thrombi for 6 times. On PO18, Lepuridin infusion was administered. On PO19, below-the-knee amputation was performed.

RESULTS: Following Lepuridin treatment, the platelet counts started to recover. In the control echocardiography, the cardiac thrombus disappeared and ST segment elevation returned to the base line. Warfarin treatment was began. The patient was discharged home on PO 36. In his 3rd month follow-up, the platelets count reached the preoperative level and he hasn't experienced any cardiac or pulmonary problem.

CONCLUSION: If HITTS is suspected, it is vital to discontinue heparin or LMWH immediately, and initiate an alternative anticoagulant since these of group of patients are highly susceptible to life threatening complications of thrombosis. Lepuridin provides reliable anticoagulation and allows rapid recovery of platelet count.

CVS-033 - CORONARY ARTERY BYPASS SURGERY IN WOMEN

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We want to present our coronary artery bypass operation experiences in females. Between October 1994 - March 2007, 290 women were operated. The younger was 35 years old, the oldest was 85 years old and the mean age was 60.8. One hundred and thirtyeight of them had three vessel disease, 104 of them had two vessel disease and 48 of them had single vessel disease. Sixteen of them had LMCA lesion. Beating heart technique was used in 17 cases, and classical cardiopulmonary bypass technique was used for the others. Mean bypass number was 2.8. Among them, 226 patients had isolated coronary artery bypass grafting, 4 had AVR, 17 had MVR, 2 had mitral annuloplasty, 13 had aneurysmectomy, 1 had apical plication, 1 had ASD repair, 4 had VSD repair, 21 had coronary artery endarterectomy, and 1 had carotid artery endarterectomy combined with coronary artery bypass grafting. Hospital mortality was 8.6% (25 cases). Cardiac failure (15 cases), perioperative MI (6 cases), mediastinitis (2 cases) and renal failure (2 cases) were the mortality reasons. Fourteen cases underwent reoperation due to haemorrhage. MI was detected in 13 cases and neurological deficit was seen in 2 cases at postoperative period. Although female gender noticed as a risk factor for coronary bypass operations at different studies, we think that early period risks are operable.

SURGERY FOR INFECTIVE ENDOCARDITIS

CVS-081 - AUTOTRANSPLANTATION FOR TREATMENT OF A GIANT LEFT ATRIUM

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We performed autotransplantation on 2 cases. Case1: 54-year-old male in end-stage heart failure due to end-stage of the mitral valve insufficiency and severe tricuspid insufficiency. Patient had enormous enlargement of left atrium (LA) (14x16cm) with interatrial septum aneurysmatically deformed (EF=30%, EDV=225ml, ESV=138ml). Case2; 56yold woman with severe mitral stenosis and LA 15x16cm. Previous data for rheumatic fever in both. Using transthoracic echocardiography the enormous left atrium due to primary severe mitral stenosis and secondary insufficiency and tricuspid regurgitation has been visualized. Diagnosis was confirmed with transoesophageal echocardiography. Basic X-ray, showed extremely enlarged left atrium. The patient developed cardiac cachexia, and atrial fibrillation during last eleventh months. There were laboratory parameters for initial liver failure in both cases.

With aortotomy and complete heart excision, left atrium was large excised, in order to decrease its volume and reconstruct the interatrial septum. Mitral and tricuspid valve had been reconstructed (in case 1). In second case using a biological prosthesis, replacement of the stenotic valve was performed. The heart was reimplanted. Operation underwent without any complications. Postoperatively both patients were in sinus rhythm, left atrium was significantly decreased (6x4cm), valvular apparatus was competitive.

1st patient was 26 hours on assisted ventilation, and 2nd 13 hours. Both were mobilized first postoperative day. Pericardial effusion and light liver failure appeared as postoperative complications. After 5 months follow up there was significant improvement of patient's hemodynamics with normal left ventricular morphology and decreased volume (EF=47%, EDV=167ml, ESV=78ml), as was assessed by ultrasound. Pericardial effusion and liver failure has been completely recovered. 1st patient after 2 years developed bradyarrhythmia and we put him on a permanent pace maker. The 2nd patient is still in sinus rhythm without any other complications (NYHA class 1).

CONCLUSION: Autotransplantation seems to be an efficient method to reduce extreme LA dilatation. Eventually should be considered as a method of choice for patients with atrial fibrillation due to extremely enlarged left atrium. Further study and longer follow-up are required.

CVS-082 - CAN A MECHANIC VALVE PROSTHESIS BE SAFE USED IN COMPLICATED INFECTIVE ENDOCARDITIS ?

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Despite the use of new and strong antibiotics, infective endocarditis might be still complicated by formation of paravalvular abscess. As a consequence of the latest developments in surgical techniques, more complex operations can be undertaken in patients with complicated infective endocarditis. Unfortunately, the mortality rate is still high in these patients. We here report a case of infective endocarditis which was complicated by aortic pulmonary fistula and aortic paravalvular abscess. The patient had a sudden hemodynamic deterioration during medical treatment for infective endocarditis. Although he was still preoperative evaluation, the patient was operated under emergency condition. A hole occurred after removing the necrotic and infected tissues and an aortopulmonary fistula was observed. The aortopulmonary fistula and this hole were closed and secured with a pericardial patch which was placed in order to differentiate infected aortic and mechanic valve surface. After then a mechanic valve prosthesis was placed in aortic position taking suture from pericardial patch. The patient was discharged without complications and IE prophylaxis was given for 45 days. After three months, the patient had no symptoms and signs regarding infective endocarditis.



Figure 1



Figure 2

Figure 1:
paravalvular abscess

Figure 2:
paravalvular abscess and aorta-pulmonary fistula

CVS-083 - BRUCELLA ENDOCARDITIS AND SURGICAL TREATMENT

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Although it is a rare illness, Brucella endocarditis is a mortal complication of human brucellosis. We want to present 5 cases whom we treated with operation with Brucella endocarditis. The ages of patients were 5 to 70 years. We performed AVR to 3 cases, and MVR to 2 cases after medical treatment. The Manughian procedure was performed to the smallest patient for aortic root enlargement. Clinical findings, echocardiographic findings, blood culture, and serological tests were used for diagnosis. We continued medical therapy at postoperative period. There was no mortality perioperative and postoperative period, and no relapse was seen between 2-8 years follow-up period. We think that medical and surgical treatment must be used together for successful treatment of Brucella endocarditis.

CVS-105 - RECURRENT MYXOMA IN A CHILD; SEEDING OR MULTIFOCAL DISEASE?

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A 3-year old boy was admitted for cerebrovascular accident with left sided hemiparesis in June, 2002. Oral anticoagulation therapy was started. Echocardiogram revealed a 4x2 cm mass in the left atrium protruding into the left ventricle attached 1 cm away from anterior leaflet of the mitral valve on the atrial septum causing restriction of mitral opening. The mass was surgically removed as far as the areas free of tumor and the myxoma was verified histologically. The patient was asymptomatic for 3 years until a diastolic murmur on the cardiac apex was detected in a routine auscultation. Echocardiography was performed. A new 3x3 cm mass originating from right superior pulmonary vein (RSPV) causing 2/4 mitral insufficiency was seen. In January 2005 the mass was removed with associated left atrial free wall also left atrium was excised from RSPV to left auricle and the defect was reconstructed with xenograft pericardial patch. Histological examination revealed myxoma and resection borders were free from tumor invasion. The patient was discharged from hospital on the 4th postoperative day without any gradient or insufficiency of the mitral valve in echocardiogram. The patient is free of symptoms and masses. Myxoma is the most frequent primary cardiac tumor accounting for about 50% of all such lesions. Recurrent myxoma after surgical excision is uncommon in sporadic forms. The frequency is estimated by 1-5% in sporadic forms. Incomplete resection and familial predisposition can lead to reoccurrence. Intracardiac implantation of embolic fragments of the first tumor and also the existence of a sort of pretumoral focus in the myocardium are possible explanations.

CVS-106 - MITRAL ANNULAR MYXOMA IN AN OLD AGE PATIENT

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INTRODUCTION: Heart valves are extremely rare locations for cardiac tumors to originate, either as the primary site or the site of recurrence. Intracardiac myxomas with an estimated incidence of 0.5-1 per million, constitute about 50% of all primary heart tumors and cardiac myxoma arising from the mitral valve is extremely rare. The most common presenting symptoms of cardiac myxomas are obstructive symptoms, embolization, and constitutional symptoms.

CASE PRESENTATION: A 71-year-old female was admitted to the hospital with the complaint of fainting. She had a history of palpitation and exertional dyspnea. Cardiac examination revealed a grade II/VI pansystolic murmur heard at the apex. Her electrocardiogram and chest roentgenogram showed no specific changes. Transeofesophageal echocardiography revealed mild to moderate mitral regurgitation with a 23x27 mm mass on the posterior mitral annulus and the mass was prolapsing into the left ventricle during diastole. The patient was operated. After left atriotomy, posterior leaflet and subvalvular components of the mitral valve were normal in configuration. The mass was excised from the P1 segment of posterior mitral annulus.

DISCUSSION: Myxoma is the most common primary cardiac tumor of the heart accounting for almost 50% of the benign cardiac tumors in adults, but it is very rarely seen in valve annulus. Echocardiography has become the procedure of choice and the most important diagnostic tool for non-invasive detection of cardiac tumors and masses. Treatment as with all myxomas is surgical excision. Since intracardiac tumors, especially those involving heart valves, carry a significant risk of embolic events, early diagnosis and prompt surgical intervention can significantly reduce the possibility of complications.

CVS-107 - SURGICAL TREATMENT OF MULTYLOCULAR HYDROCYST OF THE LEFT VENTRICLE - A CASE REPORT

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Echinococcus cyst in the heart, a life threatening condition, has an incidence in localization of only 0.5-2%. We have described a case of a 23-year old patient with echinococcus cyst localized in the myocardium of the left ventricle. At the beginning completely asymptomatic, during a random x-ray examination a pathological formation in the left ventricle was found. Using a transthoracic echocardiography the existence of a multilocular cyst has been confirmed, located at the apex of the left ventricle with a diameter of 8cm. The diagnosis was confirmed by transthoracic echocardiography, computerized tomography and magnetic resonance imaging. The existence of other noncardiac localizations of the echinococcus was excluded. The coronary angiography was normal. The patient was treated for two years with benzimidazole. Three and a half years later, the patient was enrolled for a surgical treatment. Through medial sternotomy, in extracorporeal circulation with blood cardioplegy, we approached toward complete excision of the cyst. With apical opening, a multilocular cyst with dense colloidal mass was found. Following punctation and aspiration of the cystic mass with instillation of hypertonic solution, the pericystic sheath was resected down to an intact myocardium. The septal defect was closed with two circular sutures. The operation underwent without any complications, and the patient's functions were stable following the intervention.

CVS-108 - PROSTHETIC BIATRIAL CONSTRUCTION FOR SEVERE RECURRENT OF LEFT ATRIAL MYXOMA

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We report a 19-year-old female patient who has undergone three operations in one and a half years for recurrent left atrial myxoma. The patient was admitted to our clinic on February 2007 with the diagnosis of recurrent left atrial myxoma. She had two previous surgeries at our hospital: the first on September 2005 and the second on May 2006. On December 2006, she had a transient ischemic attack that she recovered without any sequelae. Tumor embolism was suspected and echocardiography and thorax CT revealed a left atrial mass with a diameter of 7 cm. The mass was observed to have a two-fold increase in diameter one month later so the patient was referred to our clinic for surgery for the third time. At operation, the patient was put on cardiopulmonary bypass following aortic cross-clamp and bicaval cannulations. Superior septal approach was preferred and septal incision after right atriotomy revealed a pale yellow, round and firm mass with a diameter of 7 cm. The mass was entirely filling the left atrial cavity and was blocking the mitral valve and the pulmonary vein orifices. Entire atrial endocardium had a greyish discoloration and had myxomatous lesions. Left atrium was completely resected exposing pulmonary vein orifices and sparing 5 mm tissue around the mitral valve. The same procedure was carried out for right atrium: complete resection was performed sparing minimal tissue around the caval orifices and around the tricuspid valve-coronary sinus cuff. Both atria were reconstructed with tubular Dacron grafts and separate Dacron grafts were used to connect the pulmonary venous flow to the left atrium. The patient came off bypass with a junctional rhythm of 100 per minute and did not need any inotropic support. Echocardiography performed during her ward stay showed pericardial collection around right atrial prosthesis so she was taken to revision on postoperative day 10 to avoid complications of tamponade. The collection was removed thoracically and she was given back to the ward overnight. Rest of her stay was uneventful and she was discharged from the hospital on aspirin and warfarin. Recurrences tend to occur more frequently in Carney complex, an autosomal dominant disorder. To the best of our knowledge, our patient is the youngest patient with the fastest recurrences. She did not have a family history and cutaneous findings however our clinic strongly believes detailed evaluation is necessary for this fast and malignant course of a disease which is thought to be benign. We believe complete resection of the atrial tissue and prosthetic atrial construction might stop recurrences in complex myxomas, however, since this is the first patient to undergo such a procedure, result that will be obtained during the follow-up of this patient will be demonstrative and decisive.