

Case Report

Huge Left Atrial Aneurysm: First Case Report in Bangladesh

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Abstract:

The left atrial aneurysm (LAA) is an extremely rare congenital malformation of the heart. It can be caused by congenital dysplasia of atrial muscle. It may result secondarily from severe mitral valvular disease. This is the first ever case of left atrial aneurysm in an 8 months old child of Bangladesh who was treated successfully and now leading a normal life after surgical resection.

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Keywords:

Left atrium, Aneurysm.

Introduction:

Congenital aneurismal dilatation of the left atrium (LA) is a rare anomaly which may lead to atrial arrhythmias and life threatening thromboembolic manifestation.¹ Aneurysm may occur in left atrial appendage (LAA) or in left atrium (LA) and mostly congenital due to dysplasia of the musculi pectinatus and LA muscle bundles.² Acquired cases are usually associated with mitral valvular disease, left ventricular dysfunction or conditions that lead to elevated left atrial pressure.^{3,4} Acquired aneurysm may result from inflammatory or degenerative change in the endocardium.⁵

Case Report:

A, an 8-month old baby boy reported to pediatric cardiology outpatient department (OPD) with respiratory distress for one month. Chest radiography showed cardiomegaly with abnormal left cardiac border. So Echocardiography was advised. There was levocardia, dextrorotation and hugely dilated aneurysmal posterior part of left atrium with neck in between mitral valve and left atrial appendage (LAA). LV was moderately dilated as well with normal mitral valve, mild mitral and tricuspid regurgitation. CT imaging confirmed the diagnosis. Patient was referred for aneurysectomy. Patient was taken into operation theatre at twelve month of age on 19th February 2020. Operative

findings were situs solitus, Levocardia, Dextro-rotation due to giant LA aneurysm, no left SVC, normal sized heart with giant LA aneurysm with neck originating between LA appendage and mitral valve. cardiopulmonary bypass (CPB) time was 54 minutes and cross clamp time was 34 minutes. Myocardial protection was achieved through cold blood cardioplegia at 8°C through aortic root. Median sternotomy, dissection of thymus, harvestment of pericardial patch, heparinization and initiation of CPB with aortic and reflective bicaval technique were followed.



Fig.-1: CXR of patient with left atrial aneurysm.

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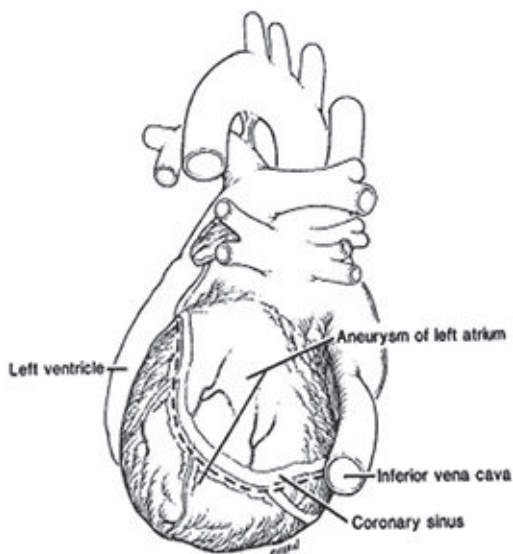


Fig.-2: *Left atrial aneurysm.*

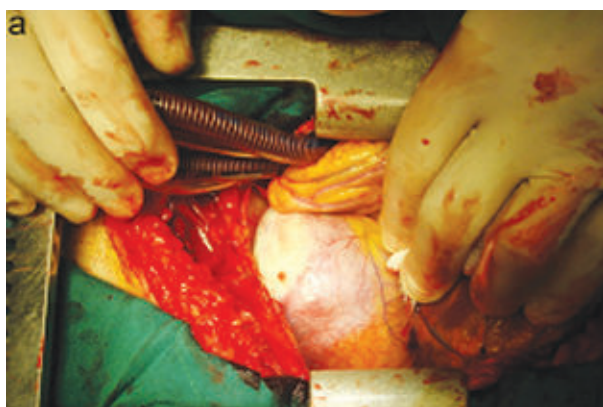


Fig.-3: *Left atrial aneurysm after opening the chest.*

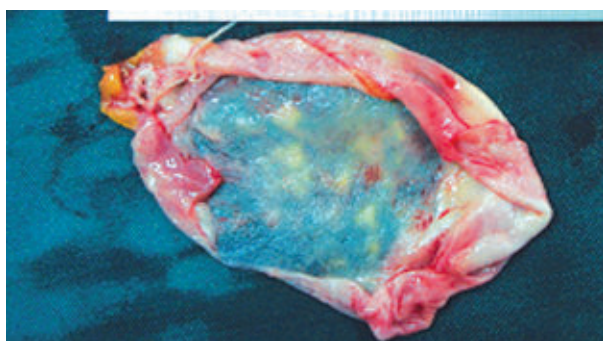


Fig.-4: *Dissected aneurysm.*

Right atrium opened, IAS excised and neck of aneurysm was identified, aneurysm excised, neck defect was patched with treated autologous pericardial patch. ASD created was also closed with pericardial patch.

Patient came off CPB in first attempt at 35 degrees centigrade and was sent to ICU with Dobutamine and Adrenaline support with two mediastinal drain and two RA and two RV pacing wire. Postoperative period was uneventful and was discharged on 28th February with advice of follow up after six weeks. Last follow up on 14th June 2021 showed a normal heart without any chamber dilatation and good biventricular function. ECG, Chest X-ray and Echocardiography reports were within normal limit.

Discussion:

Isolated aneurysm of the left or right atrium is first described by Seman's and Taussig in 1938.⁵ Age of presentation may vary from 1 month to 66 years with mean age of 23.5 years.⁵ There aneurysm may be intra pericardial or with a pericardial defect which appearance of dog's ear.^{5,6,7} Newborn and children usually present with respiratory distress and feature of cardiac decompensation, older patient may remain asymptomatic. Congestive cardiac failure in children many results from obstruction of pulmonary venous drainage.⁸ Cardiac tamponade from limitation of expansion of left ventricle was also reported.⁹ Supraventricular arrhythmias are common in adult population.⁵ In asymptomatic patient, incidental diagnosis is common from enlarged cardiac shadow in CXR. Transthoracic echocardiography is considered as a highly sensitive and specific method for diagnosis. It can also identify thrombi, cardiac abnormalities. Transesophageal echocardiography provides more clear visualization including blood flow across the orifice, presence of thrombi etc. Computerized tomography and magnetic resonance imaging (MRI) can provide more accurate anatomical diagnosis. Contrast echocardiography is also a useful investigation to exclude LA thrombi. Spontaneous echo contrast inside LA on appendage can help in suspicion of intra atrial thrombi. Diagnostic criteria for LA appendage aneurysm are:¹⁰

- (1) Originate from normal LA
- (2) Clearly defined communication with LA
- (3) Location within the Pericardium
- (4) Distortion of free LV wall by pressure of aneurysm.

Huge LAA may have potential risk of embolism, so brain MRI in follow up period is also mandatory. Early surgical excision is mandatory to avoid tachyarrhythmia. Systemic embolism, myocardial dysfunction, heart failure and adjacent structure compression. In asymptomatic cases patient may remain stable with anticoagulation therapy for some time. Few cases that refused surgery were reported by Plonska-Gosciniak et al. and Sharma et al. showed symptomatic improvement of shortness of breath and palpitation after anticoagulation therapy.¹⁰

Even though conservative management can keep a small number of patient stable for some time, surgery is best for neonates, infants and adults. Aneurysctomy is performed via median sternotomy. Endoscopic resection is possible for small one but not the giant aneurysm.¹¹ In our case, patient was referred to cardiac surgeon immediately as patient was symptomatic.

Conclusion:

LA aneurysm may cause life threatening tachyarrhythmia, systemic embolism, Myocardial dysfunction, heart failure, tamponade etc. Surgical treatment is recommended to avoid complications. Thorough evaluation of patient is necessary using locally available resources like Echocardiography, CT scan, MRI brain etc. After surgery regular follow up is necessary for certain period to look for any complications and outcome.

Conflict of Interest - None.

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