Case Report

LEFT ATRIAL APPENDAGE ANEURYSM

Aso F. SALIH*, Kirk A. Milhoan** and Sertac Cicek***

Submitted: 30/8/2011; Accepted: 28/10/2011; Published: 1/12/2011

ABSTRACT

Left atrial appendage aneurysm is a rare condition that usually presents as cardiac arrhythmias or thromboembolic events. This is a report of a 14-year- old boy presented as supraventricular tachycardia that proved to be a case of left atrial appendage aneurysm. The aneurysm was surgically resected. Herein the case is discussed with review of literature.

Keywards: *Left Atrial Appendage Aneurysm, arrhythmia*.

---

* Pediatric cardiologist, Sulaimani Pediatric Teaching Hospital, Sulaimani, Kurdistan, Iraq
** Pediatric cardiologist, Wilford Hall Medical Center, San Antonio, TX, USA
*** Pediatric cardiac surgeon, Anodolu Hospital –Istanbul –Turkey

INTRODUCTION

The left atrial appendage aneurysm is a rare condition that frequently manifests itself by heart arrhythmias or thromboembolism [(1)].

The aneurysm of left atrial appendage is an extremely rare condition, described for the first time in 1938 by Semans and Taussig, quoted by Victor and Nayak1. It occurs frequently associated to alterations in the mitral valve and manifests with heart arrhythmias or thromboembolic phenomenon [(1-3)]. Patients affected by aneurysm of the left atrial appendage are at risk of significant morbidity and mortality, but with surgical resection, prognosis is excellent [(4)].

Aneurysmal dilatation of the left atrium in the absence of demonstrable left ventricular or mitral valvular disease is rare [(5)] Such aneurysms are considered to be of congenital origin and, though they may involve the wall of the body of the left atrium, they are more frequently confined to the left atrial appendage [(2)].

Case History

Patient is 14 years old, male good body built athletic , began to feel palpitation one year ago, then suddenly became dizzy and admitted to hospital, when by electrocardiogram, supra-ventricular tachycardia was confirmed treated and discharged.

The second attack occurred 2 weeks ago with the same presentation during exercise, and admitted again to hospital and ECG done, the diagnosis of SVT was confirmed and treated accordingly and then discharged. After the last attack he was seen , in 4th Aug. 2009, in Pediatric cardiology unit as an outpatient without any symptoms, with normal ECG finding, but the chest X-ray showed incurvation of left heart silhouette (figure 1).

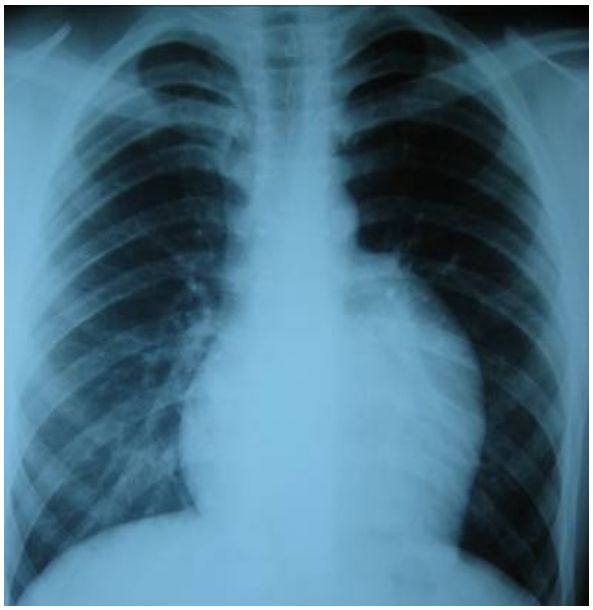


Figure 1. Chest X-ray showing incurvation of left cardiac silhouette.

https://doi.org/10.17656/jsmc.10017

Echocardiography done with Siemens Acuson Cypress machine with a 3MHz probe for transthoracic echocardiography, in which it showed large cavity next to the Left Ventricle in four chamber view (figure 2).

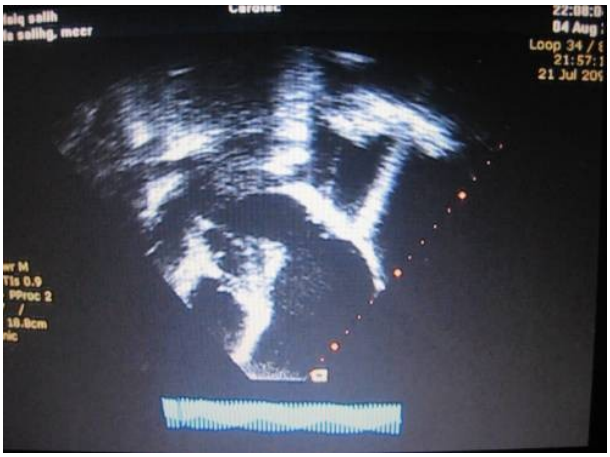


Figure 2. Transthoracic echocardiography, showing large cavity next to the Left Ventricle in four chamber view.

Color Doppler clearly showed that the cavity had a direct communication with the normal sized left atrium (figure 3), with the opening size of 14 mm to left atrium (figure 4), and the left atrial aneurysm was diagnosed.

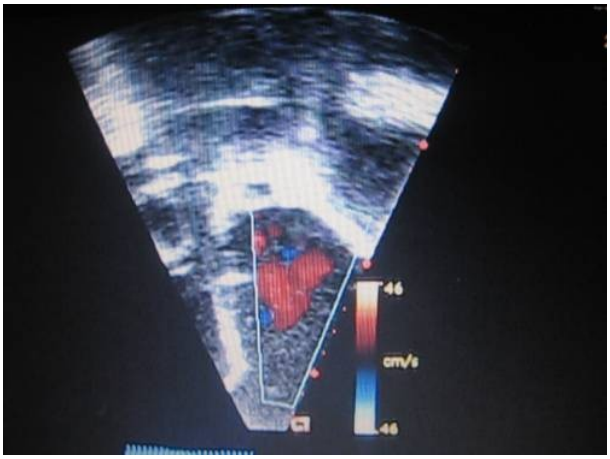


Figure 3. Color Doppler showing that the cavity had a direct communication with the normal sized left atrium.

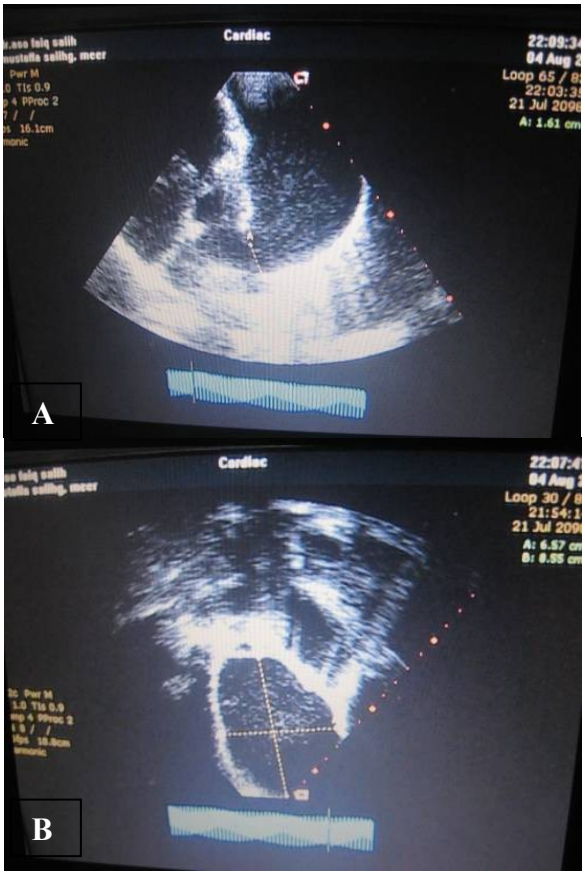
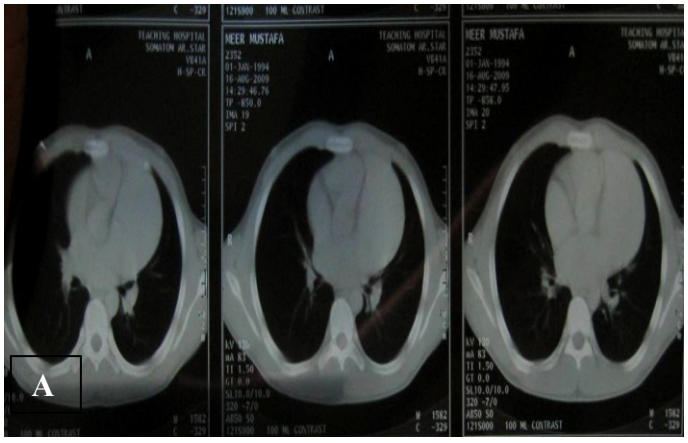


Figure 4, A and B. Color Doppler clearly showing direct communication of the cavity with the left atrium with the opening size of 14 mm to left atrium.

The aneurysm was (8.5 X 5.5 cm) in size, (figure 4), no thrombosis was seen in TTE neither in the aneurysm nor in the left atrium but TEE was not done for confirmation as it is more sensitive. The diagnosis was further confirmed by chest CT (figure 5), and the report by radiologist suggested the diagnosis.



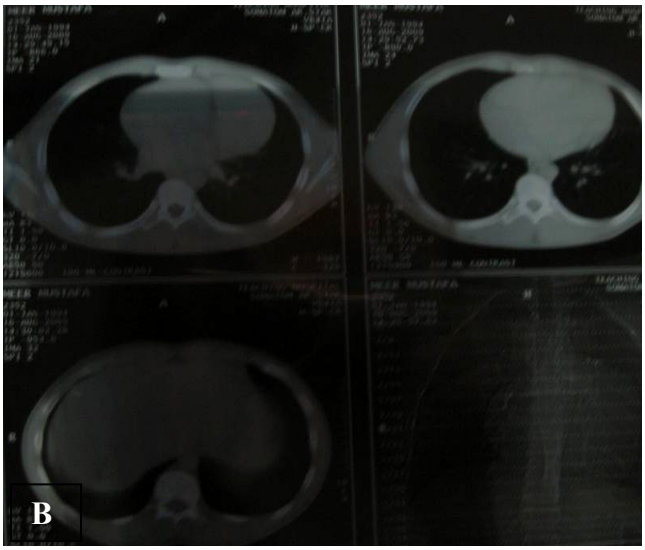
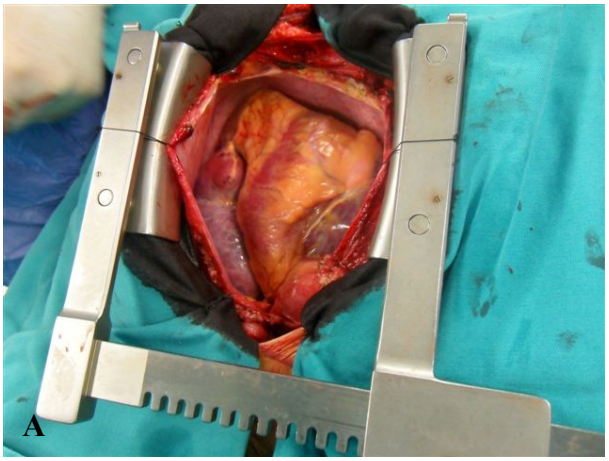


Figure 5, A and B. Chest CT suggested left atrial appendage aneurysm

As protective measure we put the patient on B-blocker and Aspirin tablet, till the time of surgery because the facility in the region was not available for doing operation. Then the patient referred to be operated in tertiary hospital in Turkey, surgery done on August 28th 2009, and it revealed huge Left atrial appendage aneurysm compressing Left Ventricle and particularly LAD (left anterior descending coronary artery). He had episodes of atrial fibrillation. The aneurysm was resected (figure 6) then radiofrequency ablation of pulmonary veins , and the base of the left atrial appendage done. The post operative period was uneventful with no recurrence of arrhythmias.



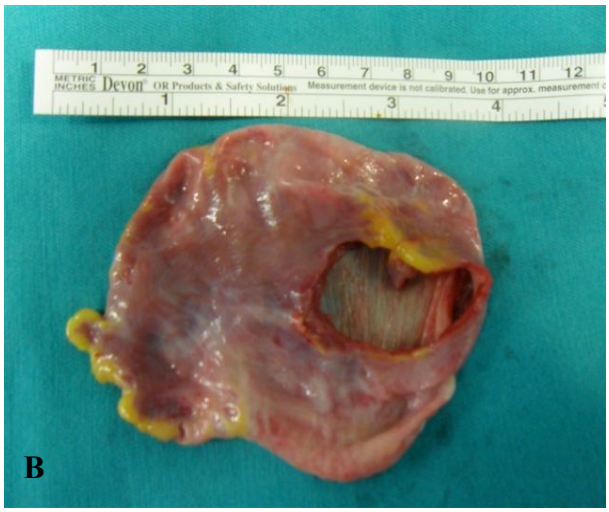


Figure 6, A and B. Left atrial appendage resected surgically.

DISCUSSION

Left atrial appendage aneurysm is an extremely rare condition, described for the first time in 1938 by Semans and Taussig, quoted by Victor and Nayak [4], its either acquired or congenital [2]. Herniation of the left atrial appendage through a pericardial defect may mimic primary congenital aneurysm of the left atrial appendage [2].

More commonly, it is diagnosed between the second and fourth decades of life [4], after episode of thromboembolism or cardiac arrhythmia [5, 6], as in our patient through pericardial defect, but in dilatation of left atrial appendage is usually associated with mitral valve disease (figure 7) or herniation the absence of a known predisposing factor the condition has been assumed to be of congenital origin [7].

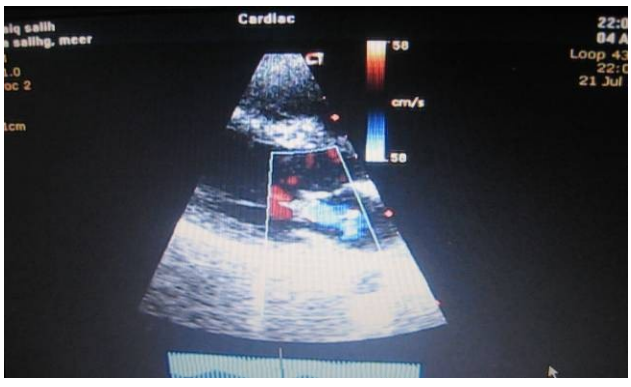


Figure 7: Color Doppler showing dilatation of left atrial appendage associated with mitral valve disease.

In cases where there is no clinical finding we may suspect a case with radiological finding which has differential diagnosis as mediastinal mass, pericardial cyst and cardiac tumor pericardial or extracardiac fluid collection [8].

Victor and Nayak postulated that the cause of the aneurysm may be due to congenital dysplasia of the musculi pectinati and of the left atrial muscle bundles related to them. Such dysplasia would impair contraction of the appendage during atrial systole [4].

Two dimensional transthoracic echocardiography including two dimentional and color and pulsed-wave Doppler is the most useful noninvasive means of study typically showing the cyst like structure connected to the left atrium and demonstrating the flow through the communication between the aneurysm and the body of the left atrium as in our case. Although transesophageal echocardiography is useful for the diagnosis of thrombi in the atrium and aneurysm (aneurysm) dilation [8,9]. Besides these methods, for diagnostic definition, magnetic nuclear resonance and angiography [10] can be used. For the patient in this case, the echocardiographic diagnosis was sufficient for indication of surgery [1].

BIBLIOGRAPHY

1. Viviane C.Veiga left atrial appendage aneurysm-echocardiografic diagnosis. Arq Bras Cardiol 2008; 90(5): e36-e38

2. Dean A. B., Jesse E. Edwards. Congenital aneurysm of left atrial appendage. Br HeartJY 1981; 45: 97-100

3. Abdel-mohsenM..Hammad. Idiopathic giant anurysmof left atrial appendage. IJTCVS 2004; 20: 186–188

4. Victor S, Nayak V. Aneurysm of the left atrial appendage. Tex Heart Inst J. 2001; 28 (2): 111-8.

5.Bueno RM, Cerdeira Jr M, Abensur H, Silva Jr A, Calil OA, Ávila Neto V, et al. Defeito do anel fibroso mitral posterior com aneurisma de átrio esquerdo e insuficiência mitral: tratamento cirúrgico com sucesso. Rev Bras Cir Cardiovasc. 1999; 14 (4): 348-54.

6. Chockalingam A, Alagesan R, Nandakumar M, Gnanavelu G. Massive left atrial appendage aneurysm presenting as supraventricular tachycardia. Indian Heart J. 2003; 55: 379-81.

7. Morales JM, Patel SG, Jackson JH, Duff JA, Simpson JW. Left atrial aneurysm. Ann thorac surg 2001; 71: 719–22.

8. Lipkin D, Colli A, Somerville J. Aneurysmal dilatation of left atrial appendage diagnosed by cross sectional echocardiography and surgically removed. Br Heart J 1985; 53: 69–71.

9. Comeaa KA, Labate DP, Winter JA, Miller DC. Congenital left atrial appendage aneurysm with intact pericardium:diagnosis by transesophegeal echocardiography. Am Heart J 1990; 120:993–95.

10. Vagefi PA, Choudhry M, Hilgenberg AD. Excision of an aneurysm of the left atrial appendage. J Thorac Cardiovasc Surg. 2007; 133: 822-3.