

## Left Atrial Appendage Giant Aneurysm- A Case Report

Md. Akhter Hossain<sup>1</sup>, Md. Badruzzaman<sup>2</sup>, Md. Mainul Kabir<sup>4</sup>, Md. Jahirul Islam<sup>5</sup>,  
Md. Alamgir Hossain<sup>5</sup>, Md. Rowshon Masud<sup>6</sup>

(Bangladesh Heart Journal 2022; 37(1): 81-83)

### Background:

Aneurysm of left Atrial appendage (LAAA) is a rare cardiac anomaly. It was first identified in 1960.<sup>1</sup> As severe complications like thromboembolic events, rhythm disorders and CCF surgical management is recommended. The authors presented a 24 years old boy who was hospitalized with a LAAA. It was detected incidentally by CT Scan of the chest. The patient underwent operation with removal of aneurysm under cardiopulmonary bypass.

### Case Presentation



Fig.-1: Preoperative X-Ray Chest

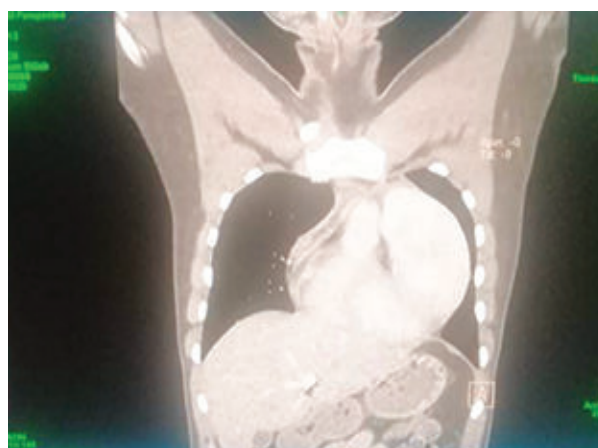


Fig.- 2: Preoperative CT scan of the chest

Masum Billah of 21 years boy was attended in outpatient department with non specific presentation. A Thoracic X-ray was done and suspected as a case of posterior mediastinal mass. A contrast CT scan was done and diagnosed as a case of giant LAAA (90 mm × 75 mm). For Cardiac evaluation Echocardiography was done and revealed large 90 mm x 70 mm LAAA enlarged compressing the left ventricle. The other findings of Echocardiography was within normal limit.

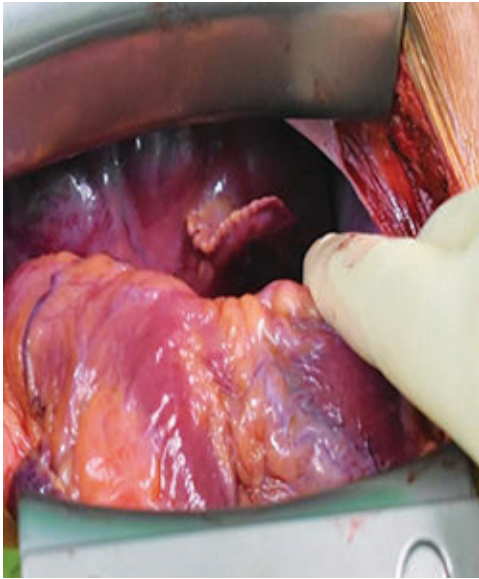
Doing all necessary investigations the patient was scheduled to undergo surgery on 04/10/2020.

1. Chief Consultant, Cardiac Surgery, Asgar Ali Hospital.
2. Jr. Consultant, Cardiac Surgery, Asgar Ali Hospital
3. Jr. Consultant, Cardiac Surgery, Asgar Ali Hospital
4. Associate Consultant, Cardiac Surgery, Asgar Ali Hospital
5. Consultant, Radiology and imaging, Asgar Ali Hospital
6. Associate Consultant, Cardiology, Asgar Ali Hospital

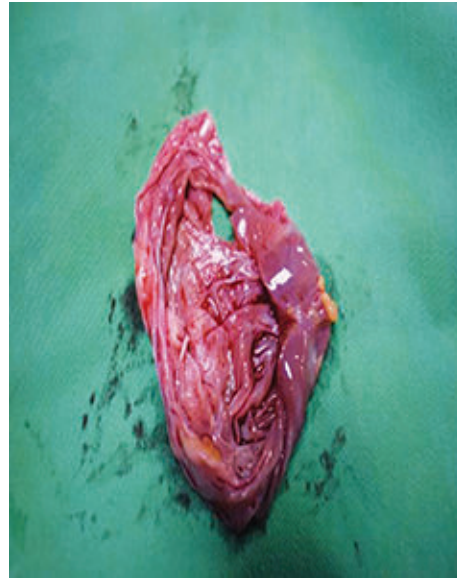
**Address of Correspondence:** Dr. Md. Badruzzaman, Asgar Ali Hospital; Mobile no: 01674030914; Email: badruzzaman2008@gmail.com

DOI: <https://doi.org/10.3329/bhj.v37i1.60109>

Copyright © 2017 Bangladesh Cardiac Society. Published by Bangladesh Cardiac Society. This is an Open Access articles published under the Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC). This license permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.



**Fig.-3:** *Peroperative view*



**Fig.-4:** *No thrombus found*

Median sternotomy was done. With aortic and bicaval cannulations Cardiopulmonary bypass was established. After pericardiotomy giant thin-walled LAAA was identified. The aneurysm was incised and no thrombus was found inside (Figure 4). After excision the base of the LAAA was sutured using 5/0 polypropylene. Precaution was taken to avoid the injury of left circumflex coronary artery. No evidence of other cardiac anomalies were identified during the operation.

In postoperative ward the patient was uneventful. He was asymptomatic with sinus rhythm in one month postoperative visit. An echocardiography confirmed a normal size of the LA and no evidence of any residual leak or blood clot (Figure 5).

#### **Discussion:**

Aneurysms may occur in either the left or right atria, or both<sup>2,3</sup>. It may be associated with other cardiac anomalies, such as tricuspid atresia<sup>4</sup>. Longer than 65 mm is defined as a "giant" LAAA<sup>5</sup>.

Usually aneurysm arises in the third decade of life. The quickly enlarging aneurysm compresses nearby cardiac structures and causes clinical symptoms. The symptoms include palpitation, dyspnea, arrhythmia, and thromboembolism.<sup>2</sup>

The LAAA arises by dysplastic changes of pectinate muscles and the related bundles of muscles of the LA<sup>6</sup>. In Neonates and infants a large aneurysm compresses the pulmonary veins and airway. So they are more likely to develop congestive heart failure and respiratory distress. They are more likely to develop congestive heart failure and respiratory distress<sup>7,8</sup>. Transthoracic echocardiography is the gold standard for the diagnosis of LAAA, thrombosis or other cardiac anomalies. But transesophageal echocardiography shows more detailed evaluation of the structure of the left atrial appendage<sup>9</sup>. Other imaging techniques, like CT scan and magnetic resonance imaging (MRI), may be done



**Fig.-5:** *Post operative X-Ray chest*

for more accurate anatomic definition of the LAAA. Diagnostic criteria for LAAA are (1) origin from an otherwise normal-sized LA; (2) well-defined communication with the LA; (3) location within the pericardium; and (4) distortion of the LV by the aneurysmal body<sup>10</sup>.

For the prevention of fatal cardiovascular events, e.g. stroke surgical intervention is recommended though the patient is asymptomatic<sup>11</sup>.

Some authors have recommended that asymptomatic patient with LAAA may be managed conservatively some years and frequent follow-up<sup>12-14</sup>. But surgical management is highly recommended in case of a LAAA with serious complications or other coexisting abnormalities.

There are no gold standard surgical method options like neck-ligation, purse-string techniques, and stapling, with or without aneurysmal excision [15]. Median sternotomy is usually favorable in situations requiring other surgical procedures, like surgical thrombectomy, the Maze procedure in persistent atrial fibrillation<sup>16</sup>, and in mitral regurgitation requiring the valvuloplasty<sup>7</sup>. Otherwise minimal invasive approach may be an alternative to median sternotomy for LAAA surgery<sup>17,18</sup>. However, though good surgical outcome, the optimal strategies for the LAAA are still under debate.

#### Conclusion:

Though the LAAA is a rare cardiac anomaly this is associated with fatal complications. The Echocardiography or CT scan are the main tools to diagnose the patient. In some situations although medical treatment can be considered, Early surgical management is generally recommended to prevent these complications, even in asymptomatic cases.

#### References:

1. Dimond EG, Kittle CF, Voth DW. Extreme hypertrophy of the left atrial appendage. *Am J Cardiol.* 1960;5(1):122-125..
2. Jonavicius K, Lipnevicius A, Sudikiene R, Zurauskas E, Lebetkevicius V, Tarutis V. Surgical repair of a giant congenital right atrial aneurysm: a case report. *J Cardiothorac Surg.* 2015;10:72.
3. Pawar R, Patel S, V SK, Suresh PV, Shekhar Rao. Giant left atrial appendage aneurysm in association with tricuspid atresia. *Eur Heart J Cardiovasc Imaging.* 2016;17(3):352.

4. Chen Y, Mou Y, Jiang LJ, Hu SJ. Congenital giant left atrial appendage aneurysm: a case report. *J Cardiothorac Surg.* 2017;12:15.
5. Victor S, Nayak VM. Aneurysm of the left atrial appendage. *Tex Heart Inst J.* 2001;28(8):111-118.
6. Morales JM, Patel SG, Jackson JH, Duff JA, Simpson JW. Left atrial aneurysm. *Ann Thorac Surg.* 2001;71(2):719-722.
7. Stone KS, Brown JW, Canal D, Caldwell R, Hurwitz R, King H. Congenital aneurysm of the left atrial wall in infancy. *Ann Thorac Surg.* 1990;49(3):476-478.
8. Bansal M, Kasliwal RR. Echocardiography for left atrial appendage structure and function. *Indian Heart J.* 2012;64(5):469-475.
9. Foale RA, Gibson TC, Guyer DE, Gillam L, King ME, Weyman AE. Congenital aneurysms of the left atrium: recognition by cross-sectional echocardiography. *Circulation.* 1982;66:1065-1069.
10. Chowdhury UK, Seth S, Govindappa R, Jagia P, Malhotra P. Congenital left atrial appendage aneurysm: a case report and brief review of literature. *Heart Lung Circ.* 2009;18(6):412-416.
11. Plonska-Gosciniak E, Larysz B, Jurczyk K, Kasprzak JD. Five-chambered heart: a 20-year story of left atrial appendage aneurysm. *Eur Heart J.* 2009;30(8):1014.
12. Sharma J, Kapoor A. The fifth cardiac chamber: case of a huge left atrial appendage aneurysm. *Indian J Med Res.* 2015;142(6):770-771.
13. Valentino MA, Al Danaf J, Morris R, Tecce MA. Giant left atrial appendage aneurysm: a case of mistaken identity. *J Cardiol Cases.* 2017;15(4):129-131.
14. Schneider B, Stollberger C, Sievers HH. Surgical closure of the left atrial appendage - a beneficial procedure? *Cardiology.* 2005;104:127-132.
15. Shih YJ, Lin YC, Tsai YT, et al. Left atrial appendage aneurysm with paroxysmal atrial fibrillation. *Heart Surg Forum.* 2012;15:E1-E3.
16. Ruttkay T, Scheid M, Gotte J, Doll N. Endoscopic resection of a giant left atrial appendage. *Innovations (Phila).* 2015;10(4):282-284.
17. Kiaii B, Doll N, Kuehl M, Mohr FW. Minimal invasive endoscopic resection of a giant left atrial appendage aneurysm. *Ann Thorac Surg.* 2004;77(4):1437-1438.