A novel technique of repair of congenital left atrial appendage aneurysm using bovine pericardial patch: A video presentation

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Abstract

Because of its rarity and association with life threatening complications like supraventricular arrhythmias, systemic embolization, congestive cardiac failure, prompt recognition of congenital left atrial appendage aneurysm is important in patients with an enlarged cardiac silhouette and a prominent convex bulge of the left upper cardiac border without carinal widening.

We report here-in a new technique of resection of the congenital left atrial appendage aneurysm and anatomical reconstruction using a bovine pericardial patch under cardiopulmonary bypass, permitting us to avoid undersizing and deformation of the left atrium.

A 22-year-old woman with intermittent episodes of chronic atrial fibrillation, and transient ischemic attacks diagnosed to be suffering from congenital left atrial appendage aneurysm undergoing resection of the left atrial appendage aneurysm and anatomical reconstruction using an onlay bovine pericardial patch, thereby avoiding undersizing and deformation of the left atrium. The postoperative recovery was uneventful.


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1. Following median sternotomy, the thymus is dissected and the pericardium is incised in the midline in between stay sutures.
2. The pericardium is distended and intact without adhesions.
3. A large cucumber-like aneurysm of the left atrial appendage is noted extending up to the apex of the left ventricle.
4. The aneurysm is compressing the obtuse border of the heart, which has made the lateral wall of the left ventricle concave and the left anterior interventricular coronary artery is following a course along an abnormal acute anterior margin.

5. The wall of the aneurysm is thin, poorly contractile and fibrillating.

6. The operation is performed with mild hypothermic cardiopulmonary bypass through angled venous cannulas into the superior and inferior caval veins and aortic cannulation. Cold hyperkalemic blood cardioplegia and topical hypothermia is used for myocardial preservation.

7. The right pleural cavity is opened up to facilitate elective cardiac dislocation.

8. After dislocating the heart into the right pleural cavity, the aneurysmal sac is incised in between stay sutures.

9. After excising the redundant aneurysmal sac, the cavity of the left atrium and left ventricle is examined and irrigated using cold normal saline ensuring no intracavitary clot.

10. The wide neck of the aneurysm is repaired using an onlay 3 x 3 cm circular bovine pericardial patch and 4-0 polypropylene suture (Johnson and Johnson Ltd., Ethicon, LLC, San Lorenzo, USA).

11. This technique has allowed us to repair the left atrial appendage avoiding undersizing and deformation of the left atrium. Post resection, the intraoperative transesophageal echocardiography confirmed the disappearance of atrial appendage aneurysm.