Sir,

Congenital left atrial appendage (LAA) pseudoaneurysm may be addressed by an emergent surgical procedure as presented by Halas et al.,\(^1\) and in some instances, it can be medically followed; however, if left untreated, this congenital condition may lead to cardiomyopathy and fatal consequences. Pseudoaneurysm is a contained rupture of some components of the histologic wall. Congenital atrial aneurysm is an extremely rare defect with <100 cases being reported.\(^2\) We report a 37-year-old asymptomatic male diagnosed with severe mitral regurgitation, ejection fraction (EF) of 30%, atrial fibrillation, and a pseudoaneurysm of the LAA that was taken to surgery. A median sternotomy was performed, and the heart was arrested using cardioplegia, and a transseptal approach was chosen. The mitral valve was myxomatous with bileaflet fibrosis and calcification not amenable to repair. The pseudoaneurysm originated at the base of the LAA and then extended into a large 12 cm × 15 cm pericardial cavity [Figure 1a-d]. A web across the neck of the pseudoaneurysm was resected [Figure 1, blue arrows]. The mitral valve was replaced with a 29 mm St. Jude mechanical valve. The pseudoaneurysm was closed with a Gore-Tex patch [Figure 1d]. After weaning from cardiopulmonary bypass with an intra-aortic balloon pump, transesophageal echocardiography showed trace residual mitral regurgitation and no residual LAA aneurysm with EF 20%–25%. Several hours later, the patient was returned to surgery for instability, and the echocardiography revealed severe biventricular dysfunction. The patient was placed on extracorporeal biventricular assist devices, but ultimately expired a month after the operation due to ischemic bowel felt to indirectly result from the severe underlying cardiomyopathy. This patient illustrates that cardiomyopathy and mitral regurgitation can accompany large pseudoaneurysms of the LAA.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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An interesting case of aorto-left ventricular tunnel

Sir,

Aorto-left ventricular tunnel is a congenital connection between ascending aorta and left ventricle. It is one of the rarest conditions with an estimated incidence of 0.001% of all cardiac malformations.

Clinical spectrum is varied; at one end of the spectrum, they can be asymptomatic, while at the other end, they can have congestive cardiac failure and aortic regurgitation.

A 6-year-old female child was admitted to our hospital with complaints of fever, cough, and breathlessness on exertion, on and off for the past 1 year. General physical examination was unremarkable. On cardiovascular system examination, grade 3/6 systolic murmur was heard along the left sternal border. Electrocardiogram showed a heart rate of 95 beats/min, in sinus rhythm. Chest X-ray showed cardiothoracic ratio of 0.6. Transthoracic echocardiogram showed aorto-left ventricular tunnel from left coronary–noncoronary commissure to the left ventricle at the base of noncoronary cusp. She was taken up for surgery.

After establishing cardiopulmonary bypass with aorta and bicaval cannulation, aorta was cross-clamped. Aorta was transected and cold blood cardioplegia was given through the coronary ostia. Aortic end of the tunnel was found as an opening extending behind the left coronary cusp–noncoronary cusp commissure into both sinuses. A silk thread is passed from the opening in the noncoronary sinus, which came out through the opening in the left ventricle. Similarly, another silk thread is passed from the opening in the left coronary sinus, which also came out through the same opening in the left ventricle. On further examination, we found out that both the openings were found out to be single opening extending behind the commissure. The left ventricle end of the tunnel was closed with 0.4-mm polytetrafluoroethylene (PTFE) patch using 6-o polypropylene pledgeted interrupted sutures. Aortic end of the orifice was also closed with a small PTFE patch using 6-o polypropylene pledgeted interrupted sutures. Aortic valve was inspected and commissure was resuspended on to the patch. The patient was weaned off from cardiopulmonary bypass gradually. Postoperative transesophageal echocardiogram revealed no communication between aorta and left ventricle. The patient is doing well without any symptoms at 1-year follow-up.

Hovaguimian et al. defined four types of aorto-left ventricular tunnel. Most common site of origin of the aortic orifice of the tunnel is from the right coronary sinus, on the anterolateral side of the ascending aorta. There are some rare instances of it originating from left coronary sinus. In our patient, the aortic orifice of the tunnel originated from the left coronary–noncoronary commissure extending into both sinuses and the tunnel was posterolateral to the ascending aorta.

Clinical presentation depends upon the type of aorto-left ventricular tunnel with the development of congestive cardiac failure, common to all the types. Regardless of the presentation, even if the patient is asymptomatic, surgical treatment is advocated to prevent the development of complications such as aortic regurgitation and congestive cardiac failure. Best time for surgery is infancy because left ventricular function and size can become normal easily. Serino et al. reported that closing the aortic defect by direct suture may result in progressive distortion of the cusps, which could result in regurgitation and the need for valve replacement. Hence, patch technique may be beneficial, which can act as a support to the aortic valve.