A giant left atrium

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A 69-year-old female patient presented with complaint of pulsatile lump in the upper part of the abdomen for the last one year. She also a complained of difficulty in swallowing solid foods. There were no complaints of nausea, vomiting, jaundice or any other gastrointestinal symptoms. The patient was a known smoker with past medical history of rheumatic heart disease with mild mitral stenosis and moderate to severe mitral insufficiency associated with atrial fibrillation. Aside from mild progressive shortness of breath during the past year, the patient had been asymptomatic all her life. Her disease was detected for the first time by syncope secondary to slow atrial fibrillation following which she was regularly on medications. There were no symptoms related to the cardiac disease at the time of presentation.

On examination, a single 8 x 6 cm size cystic lump with ill-defined margins and spherical shape was present in the epigastric region. The lump did not move with respiration and showed presence of expansile pulsations. An aortic aneurysm was suspected and ultrasonography (USG) was advised, which was suggestive of a large cystic lesion in the epigastric region with compression of the inferior vena cava and shifting of the liver downwards. Chest roentgenograms revealed near complete opacification of the right mid to lower lung zones, with a shift of the mediastinal structures and heart leftwards. A mass lesion was suspected. CT scan with contrast was performed which demonstrated marked dilatation of the left atrium, measuring 15.5 cm transversely and 11 cm anteroposteriorly (Figure 1). There was marked subcarinal widening with bilateral basal atelectasis. The oesophagus was shifted to the right of the midline. There was no evidence of any thrombus in the left atrium. Marked pulmonary venous congestion with enlarged pulmonary veins was seen. Cardiothoracic ratio was 80% with right side contributing 57% of it. Barium swallow was suggestive of smooth extrinsic impression over the anterior wall of the oesophagus with marked right and posterior displacement of the oesophagus. (Figure 2)

The patient underwent open-heart surgery at a higher centre, which consisted of partial left atrial resection without plication with reconstruction of the mitral valve. Postoperatively, the course of the patient was uneventful. She maintained sinus rhythm. The volume of the left atrium reduced from 250 ml to 120 ml and the diameter to 6.9 cm. No left atrial thrombosis or spontaneous echo contrast were found during the follow-up.

Discussion

Left atrial enlargement is seen in a variety of cardiac conditions, including mitral valve disease, left ventricular failure, chronic atrial fibrillation and left to right shunts such as those occurring with patent ductus arteriosus and ventricular septal defects. Giant left atria are defined as those measuring larger than 8 cm and are typically found in patients who have rheumatic mitral valve disease with severe regurgitation. The patient usually presents with complaints of shortness of breath and/or dysphagia. Giant left atrium is a rare entity in the current era.

The correct diagnosis of left atrial enlargement is at times not possible through the routine chest roentgenogram and may

Figure 1: Barium study showing smooth extrinsic impression of the oesophagus
require echocardiography, nuclear angiogram, barium studies, computerized tomography or cardiac MRI to reach a diagnosis.\(^{[4]}\) Here in our case, diagnosis could be easily established with a contrast CT scan and barium swallow examination supported by chest roentgenogram.

Patients with giant left atrium can be divided into 2 groups: Group 1: Patients with compression symptoms who require left atrial plication. Group 2: Patients without symptoms of compression who do not require plication.\(^{[5]}\)

Group 2 patients require partial resection of the left atrium without plication. The lateral wall of the left atrium, the region between the pulmonary veins, the roof of the atrium, and the tissue parallel to the mitral annulus are resected.

Group 1 patients, presenting with significant compressive symptoms, require trimming of the left atrial wall with para-annular and superior plication combined with the conventional right-side plication. The plication procedure results in a significant decrease in the incidence of low-output syndrome and respiratory failure postoperatively, as well as a marked decrease in mortality. The plication procedure is an effective means of relieving compression in the presence of giant left atrium.

References