

CASE REPORT

# Inversion of Left Atrial Appendage mistaken as Remnant of Left Atrial Myxoma: Role of Transesophageal Echocardiography

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**ABSTRACT**

An inversion of left atrial appendage (LAA) is a rare finding. It can be confused as a left atrial (LA) mass, if not diagnosed correctly. We report a case of LA myxoma patient who had developed LAA inversion, following LA myxoma excision and its significance.

**Keywords:** Inversion of left atrial appendage, Left atrial myxoma, Transesophageal echocardiography.

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**INTRODUCTION**

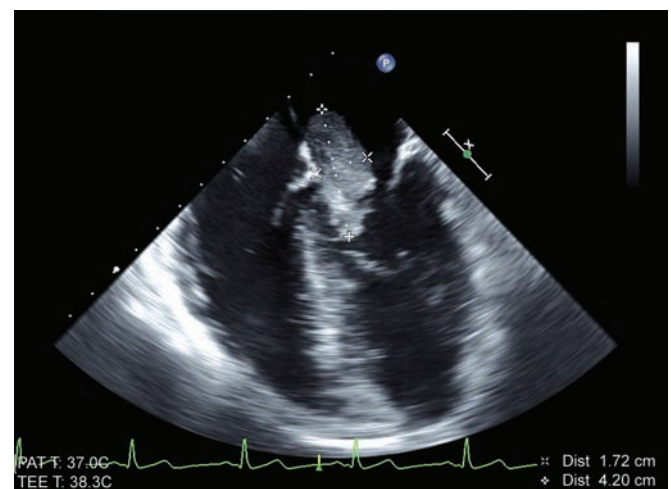
Left atrial appendage (LLA) inversion is a rare phenomenon. The natural history and incidence of subsequent complications for LAA inversion are not well defined. It is commonly misdiagnosed as LA mass. Transesophageal echocardiography (TEE) plays an important role in differentiating between LAA inversion and LA mass. We report a case of LAA inversion that was misdiagnosed as a remnant tissue of LA mass following LA myxoma excision.

**CASE REPORT**

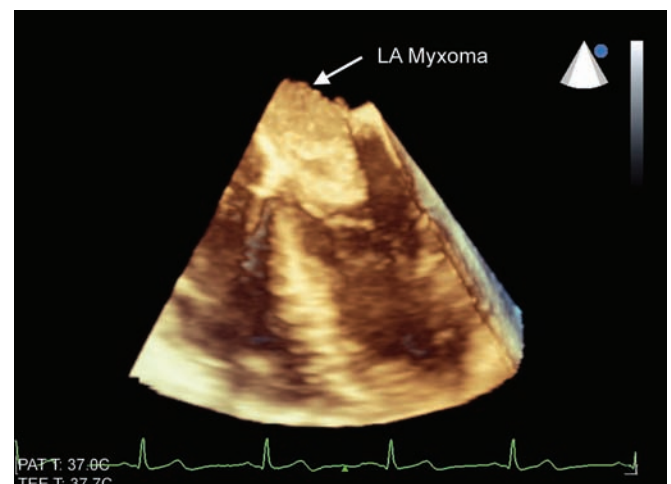
A 17-year-old male patient presented with history of dysarthria, ataxia, and abnormal gaze. He had history of unconsciousness 1 day prior to hospital admission. His magnetic resonance imaging showed bilateral thalamic and cerebellar infarct. He was on treatment for neurological manifestations and incidentally on TTE was

found to have a friable mass of size 40 × 10 mm in left atrium attached to interatrial septum. His biochemical and hematological values, electrocardiogram, and chest X-ray were normal. He was posted for emergency excision of LA mass.

The patient was induced as per institutional protocol and TEE probe (iE33 Philips with X7-2t probe) was inserted. The TTE findings were confirmed by TEE examination before cardiopulmonary bypass (CPB) (Figs 1 and 2 and Videos 1 and 2). The LA mass was excised under moderate hypothermic CPB with cold blood



**Fig. 1:** Mid esophageal four chamber view showing LA myxoma



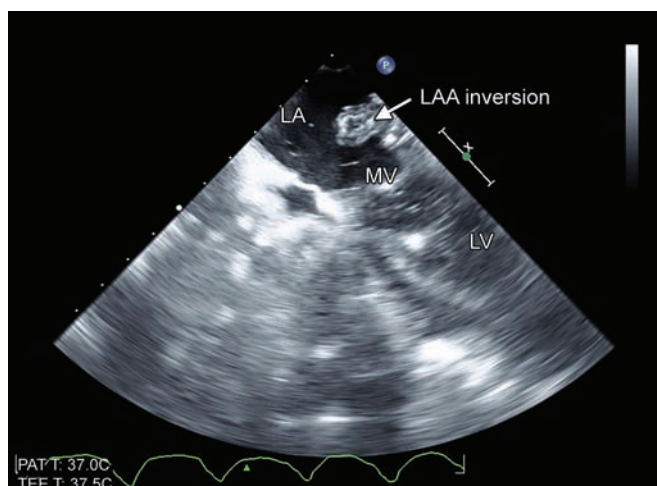
**Fig. 2:** Live 3D view showing LA myxoma

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**Fig. 3:** Mid esophageal four chamber view showing LAA inversion



**Fig. 4:** Mid esophageal four chamber view after eversion of LAA

hyperkalemic cardioplegia, and inter atrial septum was reconstructed using pericardial patch. He was weaned from CPB without any inotropic support. Post-CPB, TEE examination showed a mobile, finger-like mass from LAA (Fig. 3 and Videos 3 and 4) measuring 11 × 10 mm and was related to anterolateral wall of LA. Considering a remnant of LA mass, LA was inspected after instituting a second run of CPB. There was no mass seen in LA; however, LAA was seen inverted and eversion of LAA was done. Subsequently, post-CPB TEE did not show any abnormal mass arising from LAA (Fig. 4 and Video 5). Postoperative course was uneventful and the patient was extubated after 4 hours of mechanical ventilation. Follow-up after 3 months showed improvement in his neurological function. Histopathological examination of mass confirmed it as LA myxoma.

## DISCUSSION

The LAA is a small, muscular extension of LA and appears as a long, narrow, tubular, wavy, hooked appendage with a narrow junction and crenellated lumen.<sup>1</sup> The close proximity of the TEE transducer to the LAA allows excellent imaging of the LAA. The differential diagnosis of newly noticed mass in LA following cardiac surgery are thrombus, vegetation, remnants of cardiac tumor, septal aneurysm, pulmonary vein remnant, diaphragmatic hernia, and septal hematoma.<sup>2,3</sup> Inversion of LAA following cardiac surgery is a rare finding. It appears like a tongue-like protruding mass in LA. The LAA is typically a narrow-based, elongated structure. However, morphological difference exists between individuals. Shorter appendages with wide base are more prone for inversion. The LAA inversion may occur during deairing maneuvers or due to negative pressure created

by the LA vent via right superior pulmonary vein. The LAA inversion might be confused for a mass in LAA as in our case. Since we thought that the unusual LAA mass might be some remnant tissue from the LA mass during excision, a second run of CPB was instituted to inspect the LA. The LAA inversion can be left untreated, as it usually gets corrected automatically and does not cause thrombus formation. However, if LAA inversion disturbs the normal functioning of mitral valve, then it needs to be addressed. The LAA inversion can be corrected by filling the heart, Valsalva maneuver, and digital manipulation.<sup>4</sup> Rarely, LAA ligation can also be done.<sup>5</sup>

## CONCLUSION

Left atrial appendage inversion must be considered a differential diagnosis for a LAA mass, post-CPB. Knowledge of this condition helps to avoid unnecessary reoperation and other inappropriate anticoagulant therapy.

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