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Transesophageal Echocardiography, A Rescue Imaging for Intraoperative Assessment of Posterior Left Ventricular Aneurysms- A Case Report

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ABSTRACT

Transesophageal echocardiographic visualization of left ventricular posterior aneurysms serves as a valuable tool intraoperatively in guiding management. We present a case of a 71-year-old male who presented with left ventricular pseudoaneurysm of infero-basal and posterior wall which underwent a patch closure. This paper emphasises the importance of transesophageal echocardiography in visualizing heart structures especially posterior.

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Introduction

Left ventricular pseudoaneurysms are a rare occurrence post myocardial infarction, however they are at an increased risk of rupture because of lack of myocardial support thus warranting surgery [1].

Transesophageal echocardiography (TEE) proves to be valuable tool in visualizing the posterior structures of heart due to the close proximity of esophagus to heart, particularly in differentiating true and pseudo ventricular aneurysms post myocardial infarction. The knowledge of this difference can be crucial for surgical planning and intervention.

In this case report we present a case of posterior ventricular aneurysm post myocardial infarction which was successfully operated.

Case Description

A 71-year-old male, known case of type 2 diabetes mellitus and hypertension presented with shortness of breath on and off since 2 months. Diagnosed as a left lower lobe pneumonia and recurrent pleural effusion, multiple pleural taps were done and the patient was started on antitubercular treatment since November 2025. He now presented to Fortis Escorts Heart institute and preoperative transthoracic echocardiogram revealed an aneurysm in inferior basal posterior wall of left ventricle (LV) likely a pseudoaneurysm with left ventricular ejection fraction of 35-40% and moderate mitral regurgitation. The contrast enhanced computed tomography scans showed evidence of contrast filled outpouching from the posterobasal part of LV measuring 50 cc3 of dimension 63*57 mm with neck of 31 mm. The cath study showed Left anterior descending artery (LAD) blockade of 80-90%, obtuse marginal with a blockade of 90% and mid right coronary artery with a blockade of 95%. He was hemodynamically stable with a euro score of 15 posted for coronary artery bypass grafting (CABG) with LV aneurysm repair and mitral valve repair.

After all standard monitors were attached, a 20-gauge intravenous cannula was inserted under local anaesthesia (larger bore cannula could not be inserted because of the presence of multiple lipomas on bilateral upper limbs). Following this a 20-gauge arterial cannula was inserted for invasive blood pressure monitoring. A 7 french triple lumen central venous catheter along with 8.5 french sheath were inserted under local anaesthesia and a pulmonary artery catheter was floated through the sheath preinduction anticipating high ionotropic requirement and need for cardiac output monitoring. Anaesthesia was induced with injection midazolam 2 milligram, fentanyl 150 milligram, etomidate 20 milligram and rocuronium 80 milligram given via intravenous route. Subsequently the patient’s trachea was intubated with oral cuffed endotracheal tube of 8.5 mm internal diameter the location of which was confirmed with 5-point auscultation and end tidal carbon di oxide concentration.

Adult transesophageal probe of size 14.3mm tip (Philip X7-2T) Was placed after adequate desufflation of stomach. The mid esophageal 2 chamber view showed eccentric jet between A2P2 and A3P3 segments of mitral valve, indicating moderate mitral regurgitation and also revealed global LV hypokinesia with normal right ventricular function. The transgastric 2 chamber view and long axis view revealed an aneurysmal outpouching from the posterior LV wall just below the mitral annulus measuring 9.8*5.5 cm.

After achieving an activated clotting time value of > 480 seconds the bicaval and aortic cannulation was performed. Cardiopulmonary bypass (CPB) was initiated and patch closure of the neck of aneurysm with marsupialization of the rest of aneurysmal outpouching was done along with CABG with 3 bypass grafts and mitral valve repair.

Total CPB time was 3 hours and cross-clamp time was 42 minutes. The patient came off CPB with minimal ionotropic support of dobutamine 5mcg/Kg/min and epinephrine 0.05mcg/Kg/min. After adequate hemostasis, sternum was closed on table and patient was shifted to cardiac intensive care unit (ICU).

The postoperative ICU stay was uneventful and the patient was extubated the next postoperative day.

Discussion

Acute myocardial infarction can result in several mechanical complications of heart like ventricular free wall rupture with or without septal rupture, mitral regurgitation etc. Left ventricular aneurysms are a common complication and the free wall rupture following an aneurysm burst can result in sudden cardiac death [2].

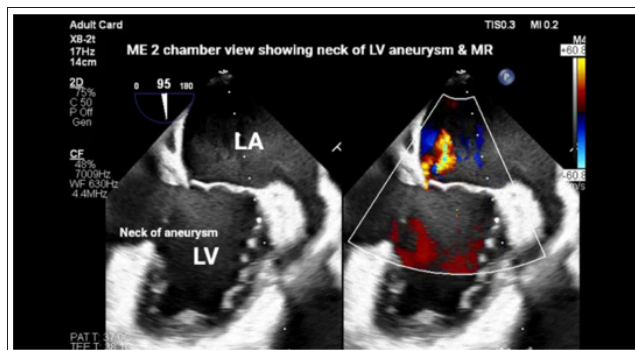
Left ventricular aneurysms occurs when a patch of tissue from the ventricle wall gives rise to a thin-walled bubble filled with blood [3].

Left ventricular pseudoaneurysms following transmural infarction have a mortality rate of 20% and other etiologies include cardiac surgery, trauma and infection [1]. Left ventricular pseudoaneurysms are formed when the ventricular rupture is contained by pericardium, thrombus and hematoma [4].

Pseudoaneurysms are at a high risk of rupture and that makes the prognosis unfavourable [5]
However, the aneurysms of posterior wall are rare and benign with only a small risk of rupture. Yet if the rupture happens it can lead to catastrophic hemodynamic consequences [2].
Multimodal cardiac imaging is required to delineate the boundaries and connections of aneurysms of and around ventricle. Transesophageal echocardiography (TEE) proves to be an indispensable tool for that in the perioperative period especially for structures not easily visible during transthoracic echocardiography.

The TEE can provide essential diagnostic information during cardiac surgery as has been reported in 12.8-38.6 % of the previous cases and can also change management in 4.4-14.6% of the cases [2].

In our case, the patient had an aneurysm arising from the posterior ventricular wall near the mitral valve annulus like an outpouching resulting in moderate mitral regurgitation which was visualized clearly in the transgastric long axis view. Examination with TEE helped assess the left ventricular function and valve function too.



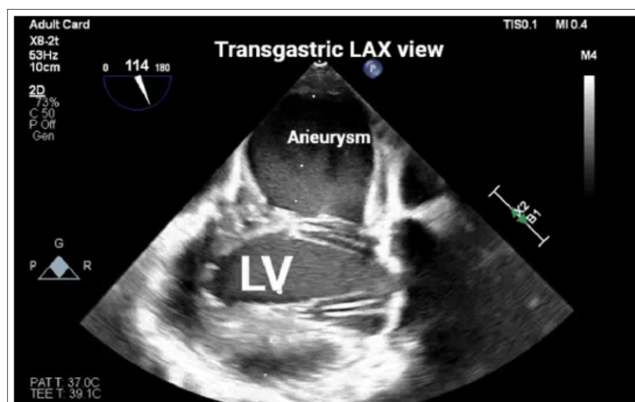


Figure 2

Conclusion

The TEE remains to be a valuable tool in visualizing the cardiac structures especially the ones poorly visualized by transthoracic echocardiography in the perioperative period. It's ability to visualize posterior cardiac structures along with ventricular and valvular function makes it an indispensable tool.

References

1. Negi SL, Munirathinam GK, Bhat IH, Puri GD, Thingnam SK, et al. (2018) Role of Perioperative Transesophageal Echocardiography in Left Ventricular Apical Pseudoaneurysm Surgery. Journal of Perioperative Echocardiography 6: 20-24.
2. Tagawa T, Sakuraba S (2018) Intraoperative diagnosis of an unsuspected ruptured left ventricular aneurysm using transesophageal echocardiography: A case report. Clinical Case Reports 7: 37-39.
3. Lee CH, Lee DK, Lim SH, Kim H (2016) Anesthetic management during surgery for left ventricular aneurysm and false aneurysm occurring in stage: a case report. Korean Journal of Anaesthesiology 69: 518.
4. Shah S, Chauhan M (2018) Cardiac Arrest during anesthesia induction in a patient with LV aneurysm. RGUHS Journal of Medical Sciences 8.
5. Sokolskaya N, Kopylova N, Slivneva I, Kolesnikov Y, Alshibaya M, et al. (2015) CASE REPORTS Echocardiographic diagnosis of a massive left ventricular pseudoaneurysm: a case report. Polish Journal of Cardio-Thoracic Surgery 2: 181-183.

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