



Serendipitous detection of hiatus hernia due to stomach wall tracer uptake on ^{99m}Tc -MIBI myocardial perfusion imaging

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INTRODUCTION

The presence of extra-cardiac activity on SPECT myocardial perfusion imaging (MPI) provides circumstantial evidence of various pathologies like tumors, diaphragmatic palsy, and hiatus hernia, which warrants further evaluation.¹ We report a patient with proven coronary artery disease for myocardial viability evaluation which showed stomach wall tracer uptake adjacent to myocardial tracer on resting ^{99m}Tc -MIBI MPI SPECT/CT study. The subsequent CT scan revealed herniation of stomach into the mediastinum.

CASE SUMMARY

A 62-year-old hypertensive woman with left-sided radiating chest pain, dyspnea, sweating, and epigastric pain on medical treatment including proton pump inhibitor (PPI) showed hypokinetic LAD and RCA territories with left ventricular (LV) ejection fraction of 25-30% on echocardiography. Coronary angiography demonstrated LAD ostial cutoff, 99% stenosis of mid-

RCA, and distal LCX. Nitrate-augmented rest MPI study for LV myocardium viability assessment done with 10 mCi of ^{99m}Tc -MIBI showed a blob of extra-cardiac tracer activity in the retro-cardiac region tangential to LV myocardial tracer activity on planar projection images (Figure 1). Reconstructed images illustrated a focus of tracer activity encroaching onto inferior and inferolateral walls of the LV myocardium impacting the image interpretation (Figure 2). Subsequent CT scan thorax revealed herniation of gastroesophageal junction, fundus, and part of body of the stomach into the mediastinum (Figure 3).

DISCUSSION

Hiatus hernia is a trans-diaphragmatic migration of the abdominal viscera (most commonly stomach) into the mediastinum through esophageal hiatus of diaphragm, with old age and obese individuals being at higher risk. Hiatus hernia is incidentally detected on CT scan/chest X-ray done for unrelated symptoms; symp-

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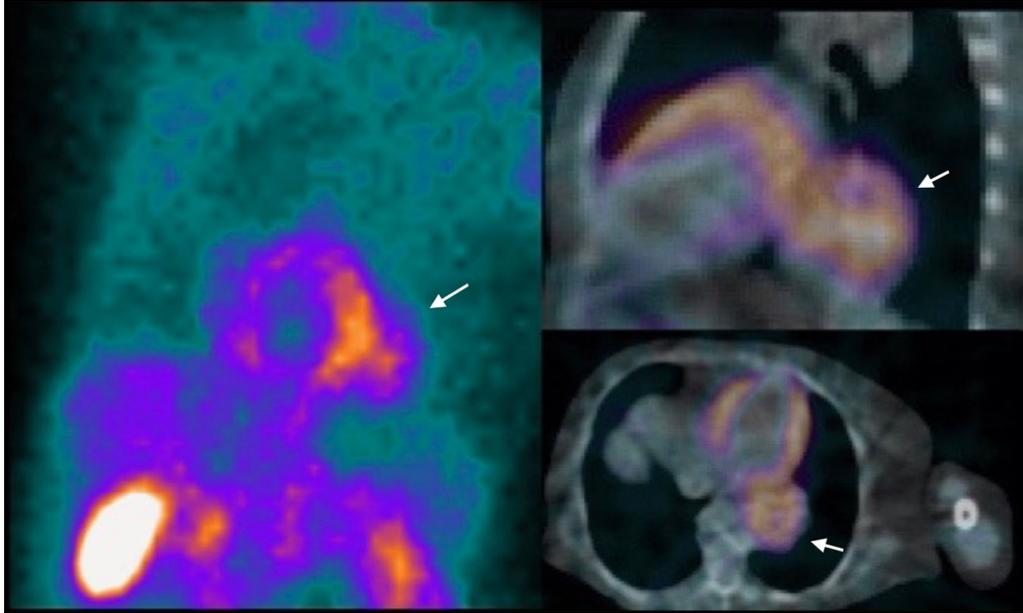


Figure 1. Planar projection image of MPI study acquired 1 hour post injection of ^{99m}Tc -sestamibi showing a blob of tracer activity (arrow) in the para-cardiac region encroaching onto the LV myocardial tracer activity. CT-attenuated fused sagittal and transaxial images showing tracer uptake in retro-cardiac region (arrows) in addition to the myocardial tracer uptake.

tomatic patients are usually managed conservatively with PPIs; however, surgery is indicated in setting of persistent regurgitation refractory to medical management or gastric volvulus/bowel obstruction.² Case report had shown large hiatal hernia on MPI perhaps secondary

to duodeno-gastric reflux.¹ PPI intake prior to the MPI may result in stomach wall tracer uptake, compromising the image quality which may be mitigated by stopping the PPI for few days before scan.³ Abnormal extra-cardiac tracer uptake in mediastinum on MPI warrants

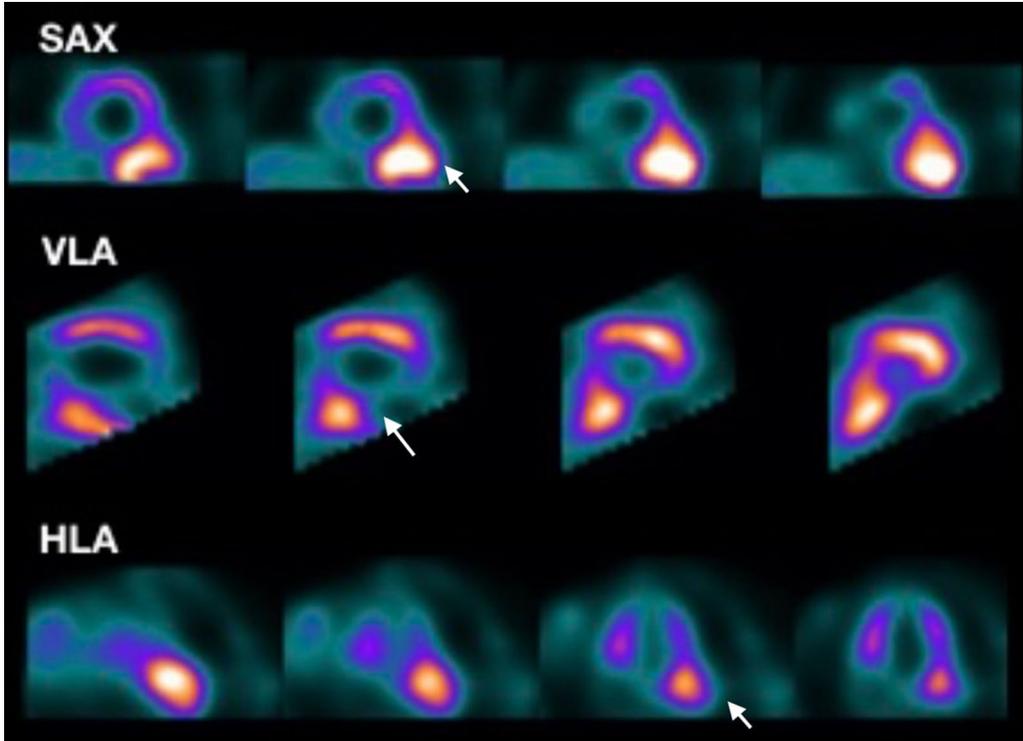


Figure 2. Attenuation corrected SAX, VLA, and HLA slices of MPI study showing perfusion defects in the LV myocardium supplied by LAD artery (apex, apical inferior, and anteroseptal wall). Tracer uptake in RCA territory is interfered by the retro-cardiac tracer activity (arrows) encroaching onto the inferior and inferolateral walls of LV myocardium. *SAX*, Short axis; *VLA*, vertical long axis; *HLA*, horizontal long axis; *LAD*, left anterior descending; *RCA*, right coronary artery.

watchful review of projection images in addition to SPECT perfusion images. In this case, PPI intake for epigastric pain probably resulted in stomach wall tracer

uptake leading to detection of unanticipated presence of hiatus hernia.

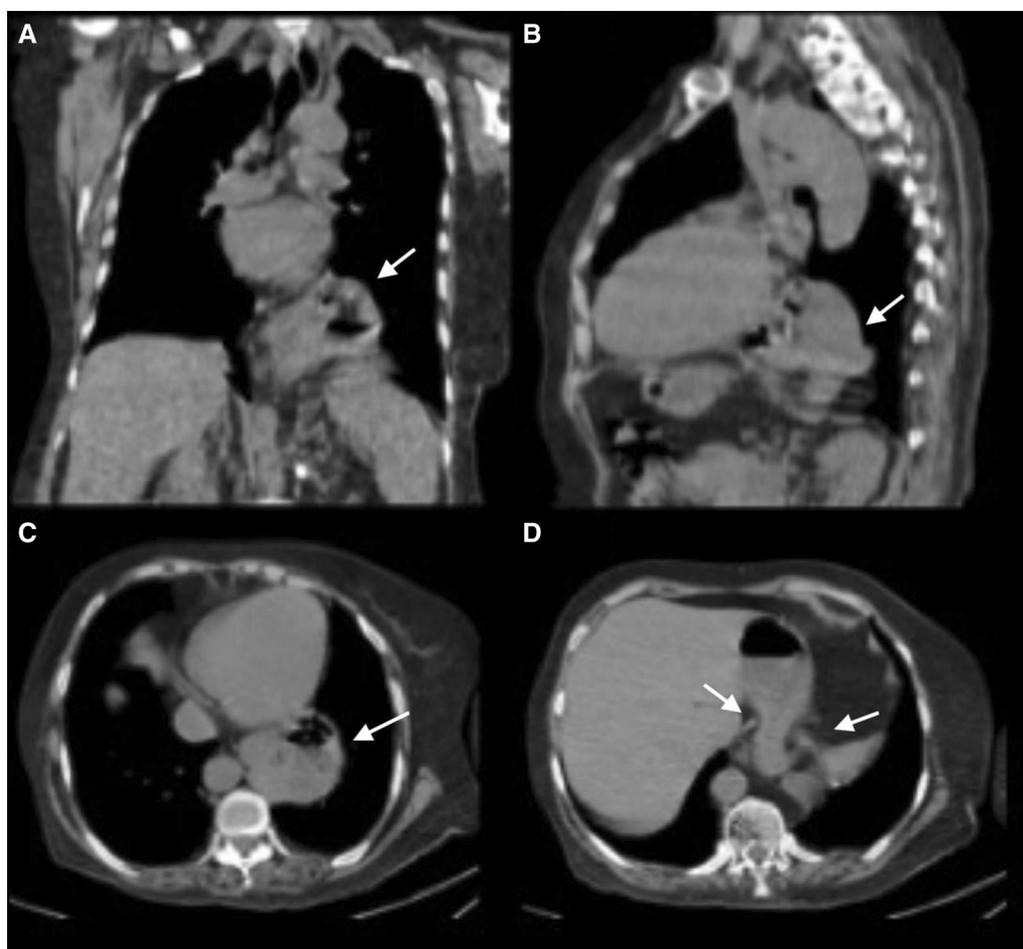


Figure 3. NCCT scan thorax obtained subsequently showing a large hiatus hernia in the mediastinum. CT coronal, sagittal, and transaxial sections showing herniated stomach with air-fluid level in the retro-cardiac position, closely abutting the LV myocardium (A–C). Widened esophageal hiatus (arrows) through that, the part of the stomach and GEJ herniating into the mediastinum (D). *NCCT*, Non-contrast computed tomography; *GEJ*, gastroesophageal junction.

Disclosures

Neeraja Bollampally, Parag Barwad, Ashwani Sood, Madan Parmar, Rajeev Dogra and Bhagwant Rai Mittal have nothing to disclose. No financial help was received for the publication for this manuscript.

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