THE RAILROAD TRACK SIGN: INTENSE GASTRIC WALL UPTAKE ON TC-99M SESTAMIBI SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY MYOCARDIAL PERFUSION IMAGING IN PATIENTS WITH END-STAGE LIVER DISEASE

Poster Contributions
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Background: End-stage liver disease (ESLD) patients undergoing pre-transplant Tc-99m sestamibi single photon emission computed tomography (SPECT) myocardial perfusion imaging (MPI) often have intense parallel curvilinear gastric wall uptake resembling railroad tracks (Fig. 1). This study correlates the “railroad track” sign with clinical parameters.

Methods: This is a single-center, retrospective study of 50 patients with ESLD who underwent regadenoson Tc-99m sestamibi SPECT MPI. From the raw data, an anterior planar image was selected to minimize overlap of abdominal viscera. Standard 20-pixel regions-of-interest were drawn over the anterior (A) and inferior (I) myocardium and the gastric (G) fundus; ratios of A to G (A:G) and I to G (I:G) were calculated. Clinical data included endoscopy. Analysis of continuous variables with Pearson’s correlations and binary variables with T-tests were performed.

Results: Over half of the population (54%) had higher G compared to A or I (that is, A:G or I:G <1). This finding was most strongly associated with portal hypertensive gastropathy (PHG); those 24 patients had lower A:G (mean 0.22, p-value 0.04) and I:G (mean 0.25, p-value 0.02).

Conclusion: Intense gastric wall uptake (“railroad tracks”) is a common finding on regadenoson Tc-99m sestamibi SPECT MPI in patients with ESLD. This is associated with the higher gastric wall vascularity in patients with portal hypertensive gastropathy. The clinical significance of this finding is uncertain.