

Myocardial Infarction

Case

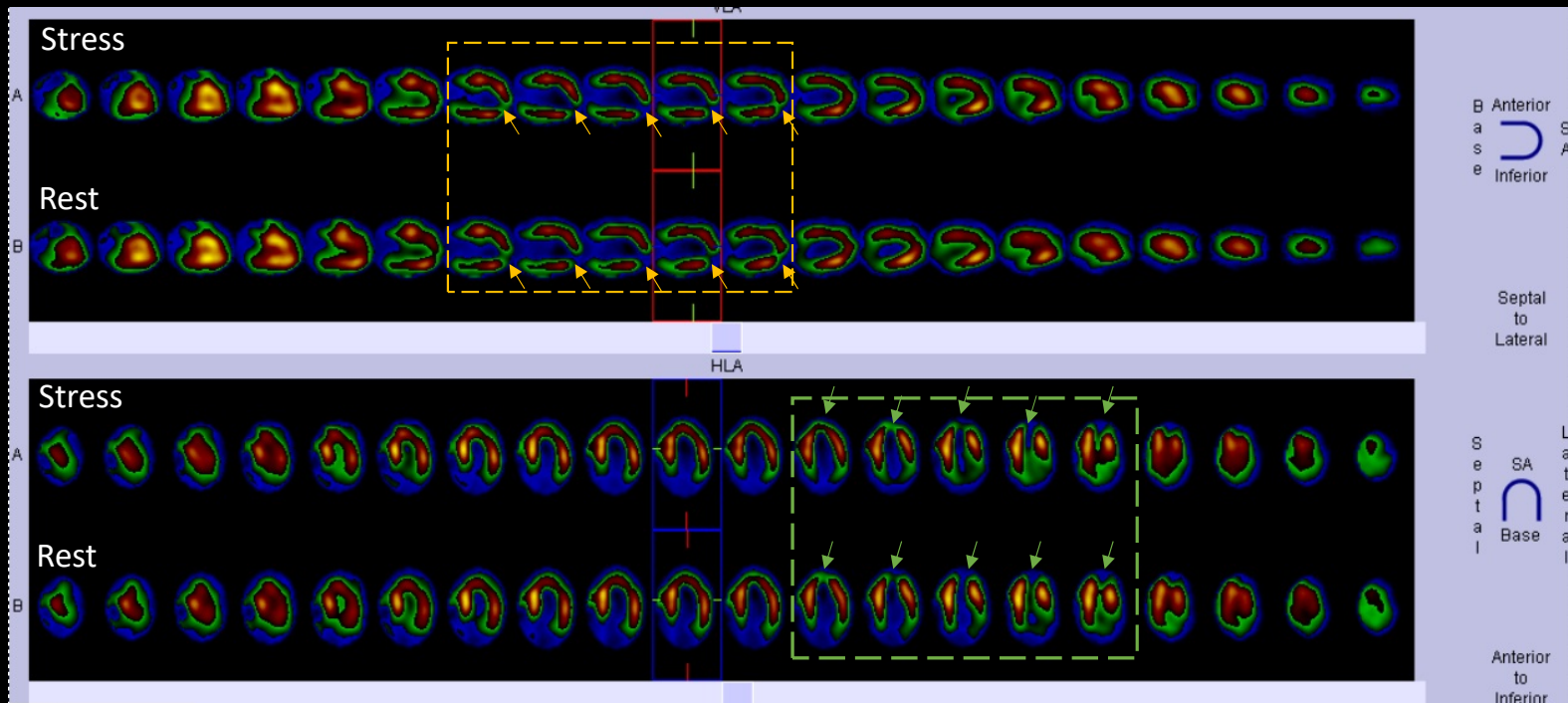
- 64 yo obese male presents to the Emergency Department with chest pain that radiates to his left arm and up to his jaw, shortness of breath, and diaphoresis
- PMHx significant for prior MI of the RCA, coronary artery disease, hypertension, and diabetes
- ECG shows new ST elevations in leads I, aVL, V3-6, consistent with an anterolateral STEMI
- Troponins are elevated

Life-threatening causes of chest pain

- **MI:** chest pain and pressure that radiates to jaw, neck, shoulder, arm, or back
- **Aortic dissection:** tearing chest pain that radiates to the back
- **Pulmonary embolism:** pleuritic chest pain
- **Pneumothorax:** pleuritic chest pain
- **Esophageal rupture:** epigastric or retrosternal chest pain after excessive vomiting
- **Cardiac tamponade:** chest pain, muted heart sounds, JVD

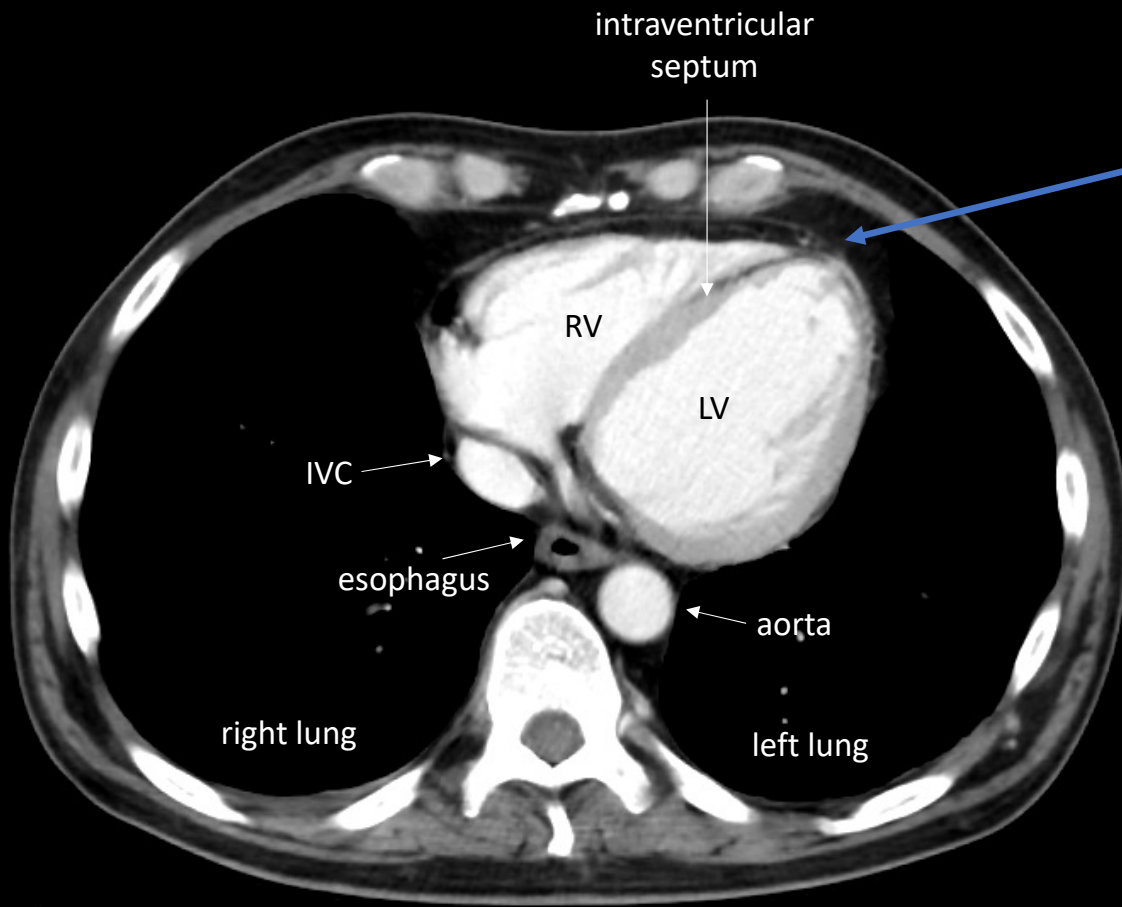
MYOCARDIAL PERFUSION SCAN

A myocardial perfusion scan uses nuclear imaging to assess blood flow through the myocardium. Areas that don't show radioactivity = areas that don't receive blood flow. Blood flow when the patient is undergoing exercise ("stress") is compared to blood flow when the patient is resting. These can be done to diagnose CAD, after an MI to assess muscle damage, or after bypass or stent placement.



“Small fixed defect in the inferior apical wall consistent with prior myocardial infarction (RCA).”

“Small fixed defect in the apical and anterolateral wall consistent with prior myocardial infarction (LAD/LCx).”



CT

“There is thinning of the myocardium with fatty change involving the apical segments of the left ventricle consistent with prior myocardial infarction.”

About MI

- Most commonly caused by rupture of an atherosclerotic plaque in the coronary arteries
- Myocardial infarction can be either a STEMI or NSTEMI
 - STEMI = ST-elevation MI. Caused by a full thickness, transmural infarct
 - NSTEMI = non-ST-elevation MI. Caused by partial thickness, subendocardial infarct. ECG shows ST depression
- Risk factors for MI are the same as risk factors for atherosclerosis (HTN, HLD, diabetes, smoking, etc)
- Complications of MI can occur between one day-several weeks after!
 - i.e. cardiac arrhythmia, myocardial rupture, papillary muscle rupture, aneurysm formation, Dressler syndrome