

Introduction to Cardiac Radiology

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Objectives

- Overview of the available Cardiac Imaging Modalities
- Review of their strengths and weaknesses
- Indications for each modality
- Basic Anatomy

Imaging Modalities

- Plain Radiography
- Echocardiography
- Computed Tomography
- Myocardial Perfusion testing
- Magnetic Resonance Imaging
- Catheterization

Plain Radiography

- First ordered imaging test for unknown chest disease
- Available and affordable
- Lowest radiation exposure
- No IV contrast
- Neither very specific nor sensitive

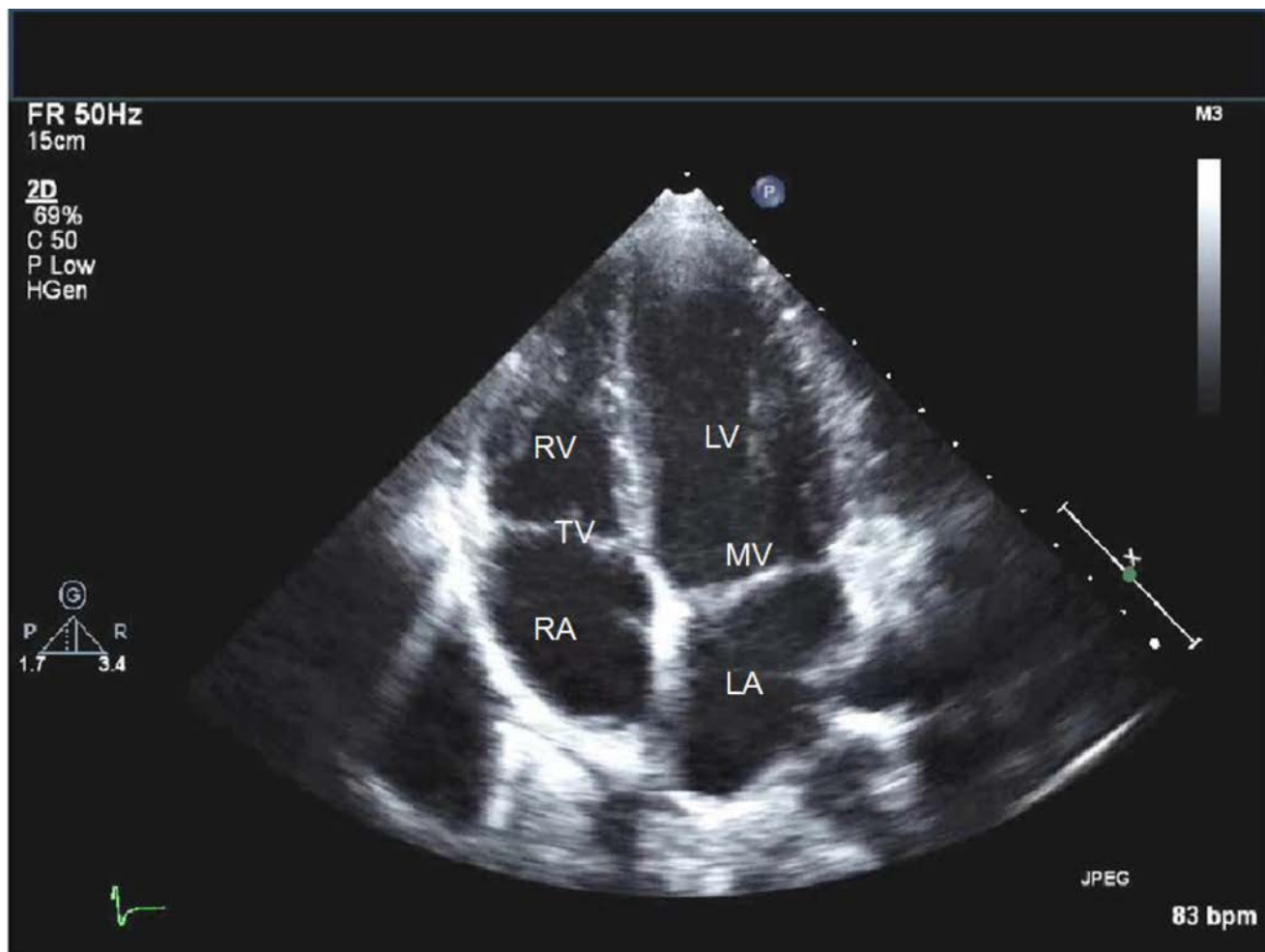
Plain Radiography



Echocardiography

- First ordered imaging test for unknown cardiac disease
- Available and affordable
- No radiation exposure
- No IV contrast
- Anatomy and physiology
- Operator dependent

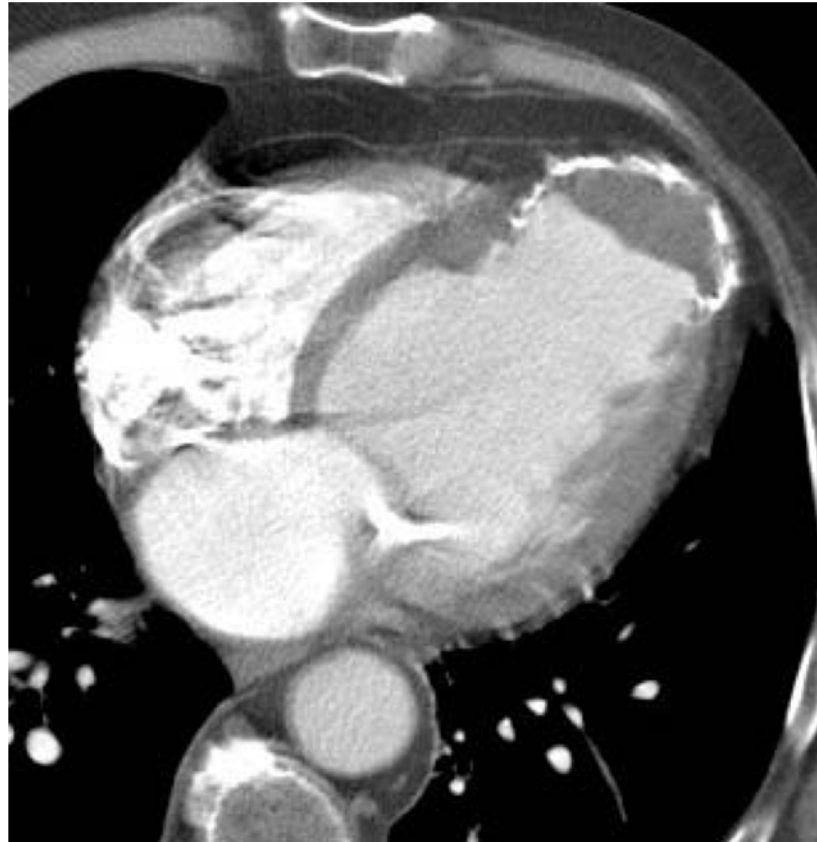
Echocardiography



Computed Tomography

- Excellent anatomic details; some physiology at cost
- Available but more expensive
- Radiation exposure
- IV contrast

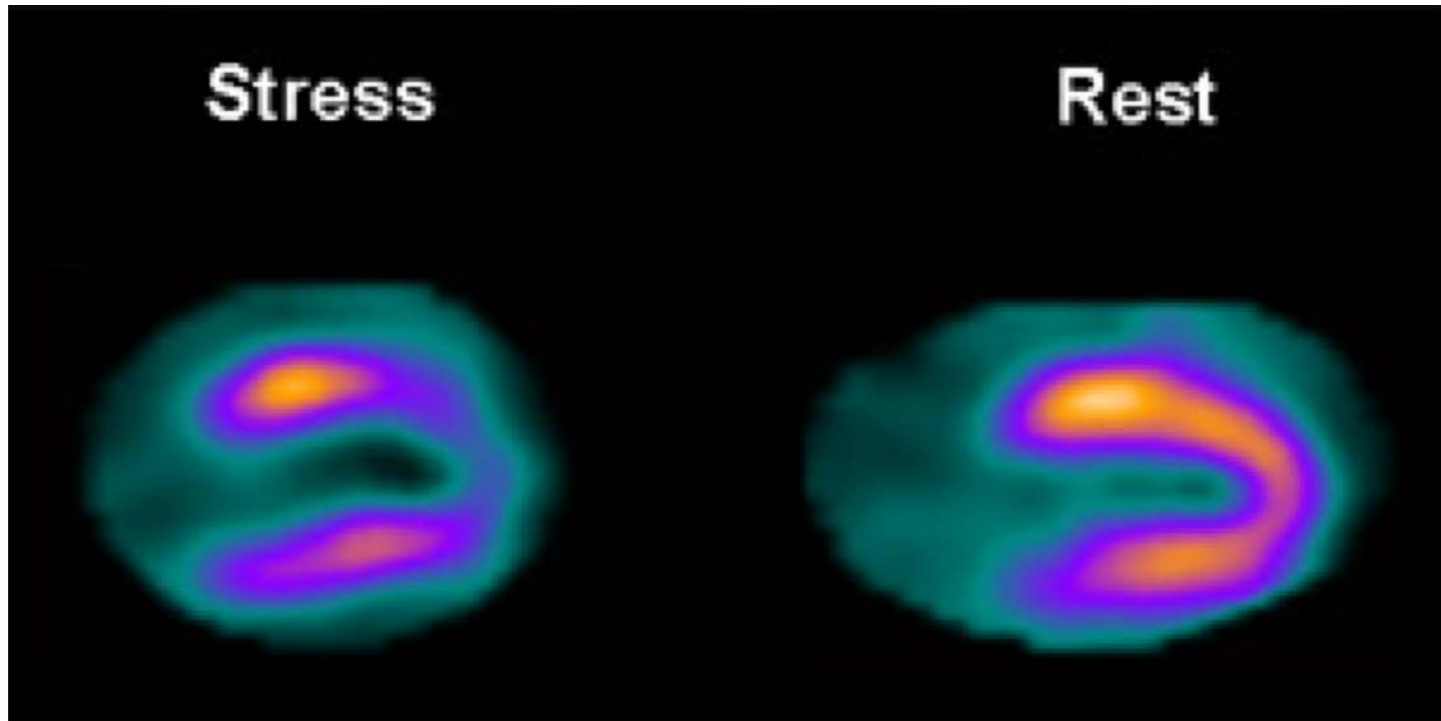
Computed Tomography



Myocardial Perfusion Testing

- Physiology; No anatomic details (low spatial resolution)
- Less available and more expensive
- Radiation exposure
- No IV contrast

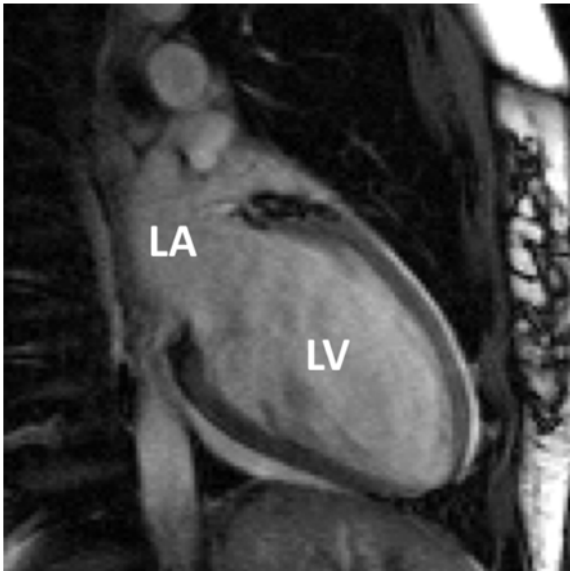
Myocardial Perfusion Testing



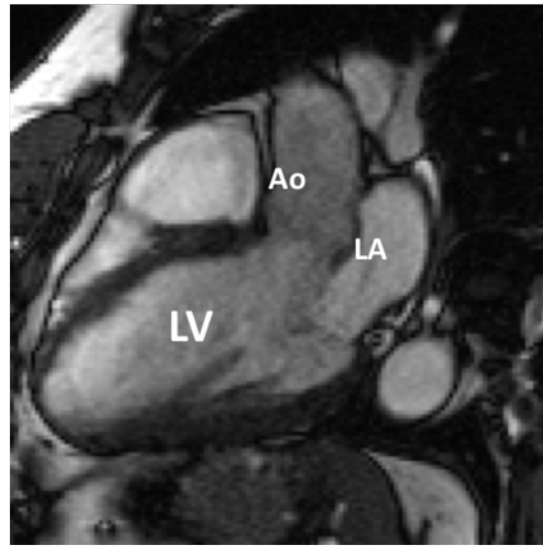
Magnetic Resonance Imaging

- Anatomy and physiology
- Less available and very expensive
- No radiation exposure
- IV contrast (Gadolinium based)
- Unique tissue characterization

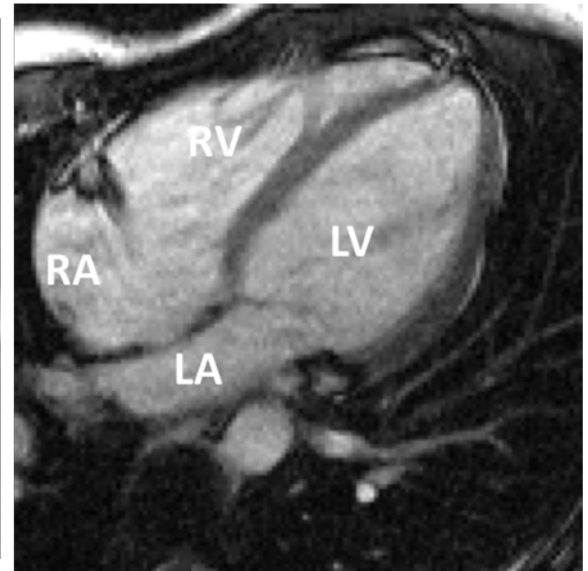
Magnetic Resonance Imaging



2 chamber

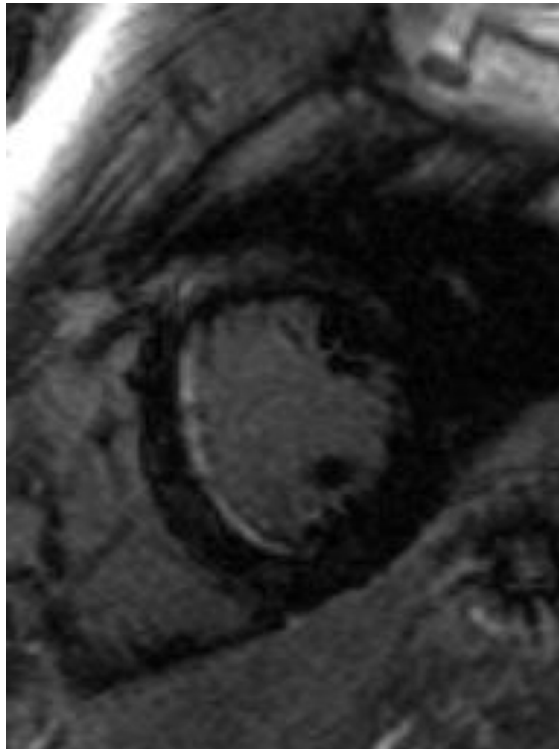


3 chamber



4 chamber

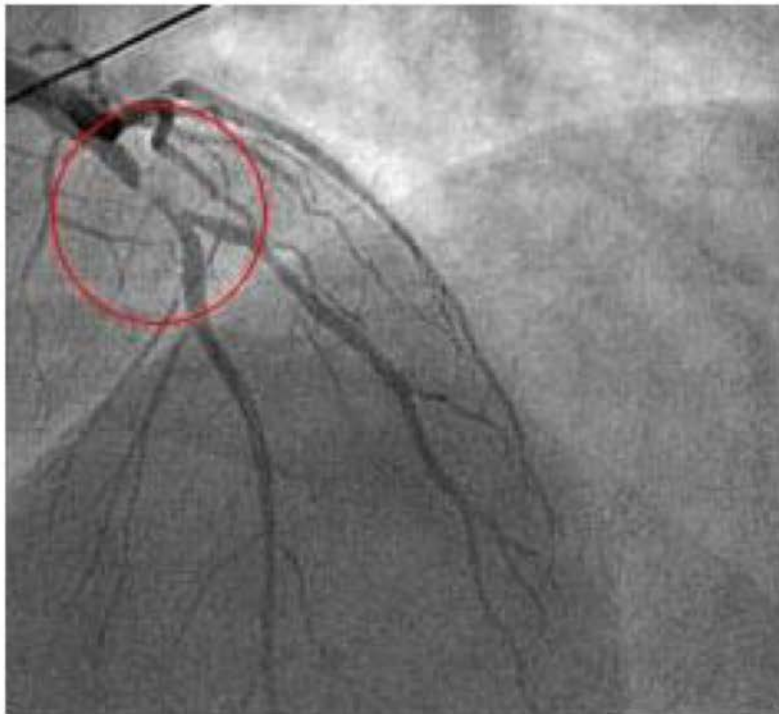
Magnetic Resonance Imaging



Cardiac catheterization

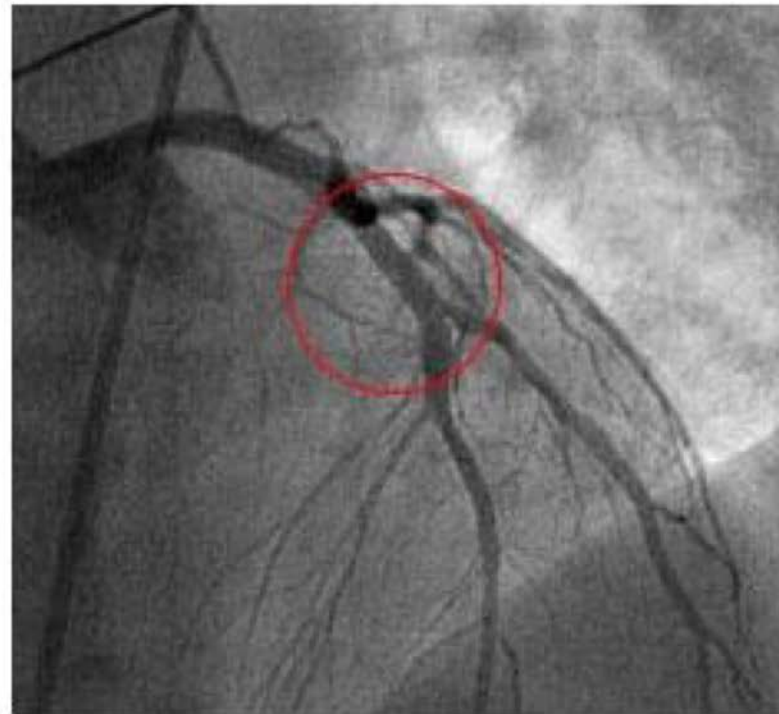
- Invasive
- Anatomy and some physiology
- Less available and most expensive
- Radiation exposure
- IV contrast
- Treatment

Cardiac catheterization



Before

99% proximal left anterior descending artery (LAD) stenosis



After

Status post stent of proximal left anterior descending artery (LAD)