

Acute Cardiac Emergencies

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TRAUMA & EMERGENCY RADIOLOGY



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Disclosures - None

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Objectives

- Become familiar with frequently encountered cardiac emergencies
- Identify pericardial infections and inflammatory conditions
- Recognize common cardiac conditions and how to guide management

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Cardiac Conditions

- Cardiac chambers
 - Thrombus (vs mass/myxoma)
 - Embedded/retained device
- Myocardium
 - LV aneurysm vs. pseudoaneurysm
 - Myocarditis
- Pericardium
 - Pericardial effusion and tamponade
 - Pericarditis

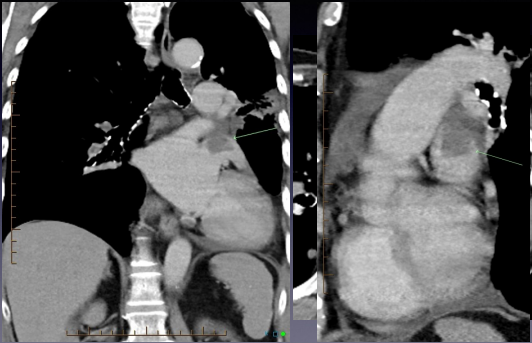
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Cardiac Thrombus



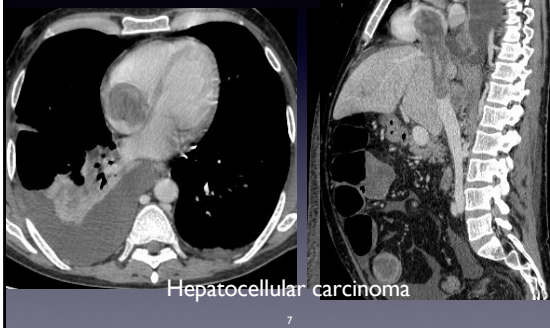
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Cardiac Tumor Thrombus



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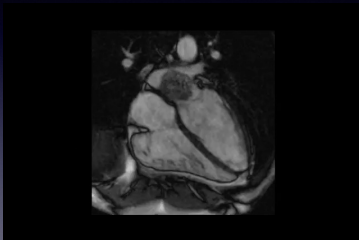
Cardiac Myxoma

- most common primary cardiac tumor in adults (~50%)
- A/w Carney Complex (multiple endocrine neoplasia syndromes)
- LA > RA



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Cardiac Myxoma



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Cardiac Myxoma

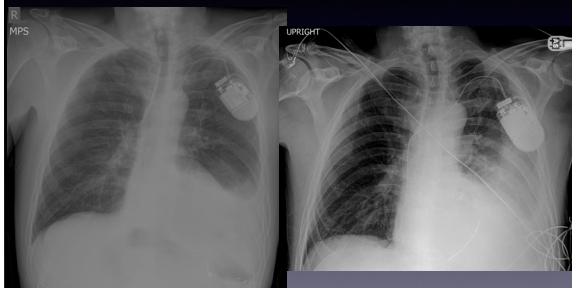
- 20% arise in RA
- Calcium more common



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Embedded/Retained Device



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Embedded/Retained Device

- Difficult to recognize on CXR
- Often discovered incidentally
- Can lead to hemorrhage/effusion
- Tx: often surgical



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Myocardium

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Pericardium

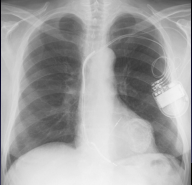
- Pericardial effusion/tamponade
- Pericarditis

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Myocardium - LV Aneurysm

- discrete, dyskinetic areas of the left ventricular wall w/ broad mouth
- true aneurysms
- aneurysmal sac contains an endocardium, epicardium, and thinned fibrous tissue (scar)
- MCC: myocardial infarction




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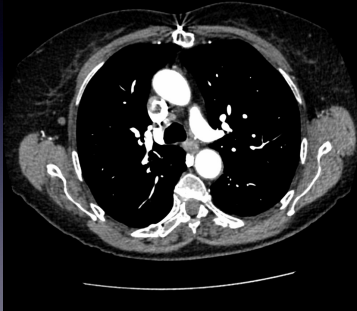
Myocardium - LV Pseudoaneurysm




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Myocardium - LV Pseudoaneurysm



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Aneurysm vs. Pseudoaneurysm

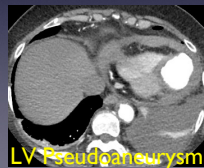
Characteristics	True Aneurysm	Pseudoaneurysm
Etiology	CAD	Mainly CAD, some other causes
Location	Anterior wall, apex	Posterolateral wall
Rupture Possibility	Low	High
Wall	Thinned out myocardium	Pericardium, fibrous tissue
Neck	Wide	Narrow
Management	Medical/surgical	Surgical (1 st line); Medical (rare)
Ventricular Function	Significant dysfunction, akinesis	Unaffected myocardium usually normal

CAD: Coronary Artery Disease



LV Aneurysm

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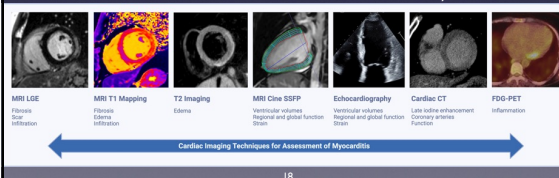
LV Pseudoaneurysm

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Myocarditis

- general term describing the inflammation of the heart muscle or myocardium
- usually refers to non-ischemic myocardial inflammation
- Acute vs chronic
- Multiple etiologies
 - Infectious vs non-infectious

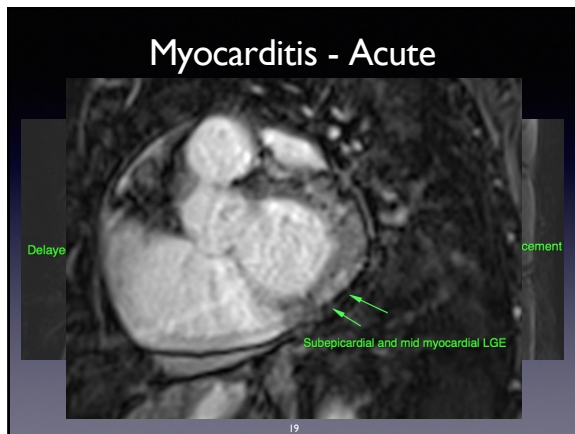
Courtesy: Hanneman et al. 2022



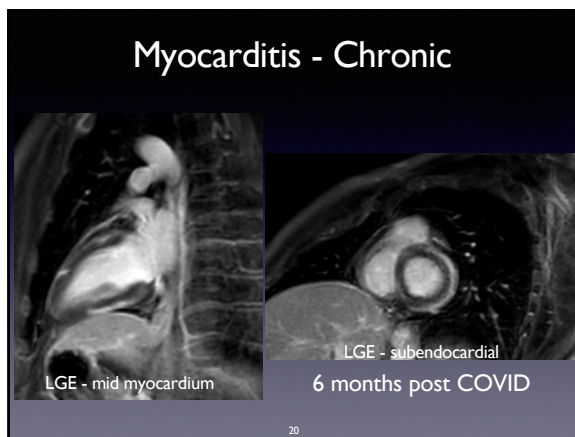
Cardiac Imaging Techniques for Assessment of Myocarditis

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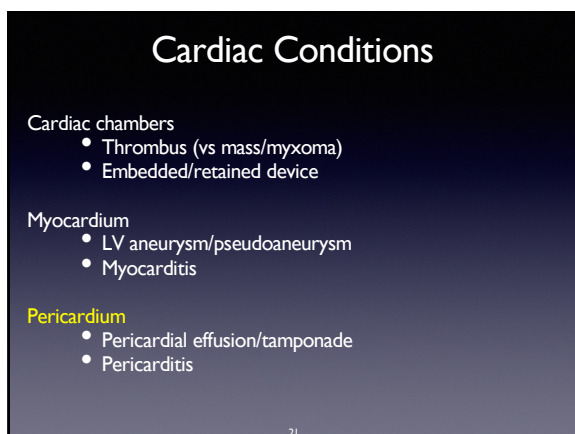
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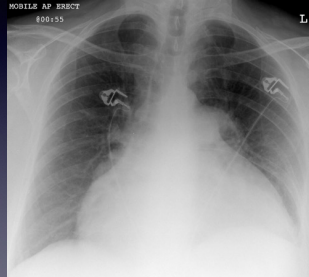
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Pericardial Effusion

- Presentation: speed of accumulation more important than volume
- Leads to impaired cardiac function
- Multiple etiologies: idiopathic, infection, neoplasm, etc.



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Pericardial Effusion

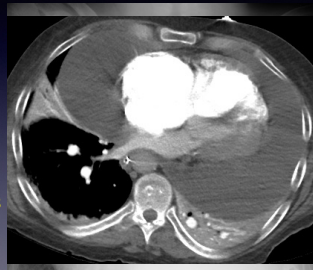


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Pericardial Tamponade

- Accumulation of fluid, pus, blood, gas, or benign or malignant neoplastic tissue
- Results in impaired cardiac output
- Emergent recognition is critical



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THANK YOU & BEST WISHES!

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