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# Sinus Valsalva Aneurysm

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# Patient presentation

- A 78-year-old male presented to ER w/ left flank pain then left pleuritic pain
- h/o prostate ca s/p XRT, emphysema w/o smoking history
- Lab data within normal limit except d-dimer slightly elevated

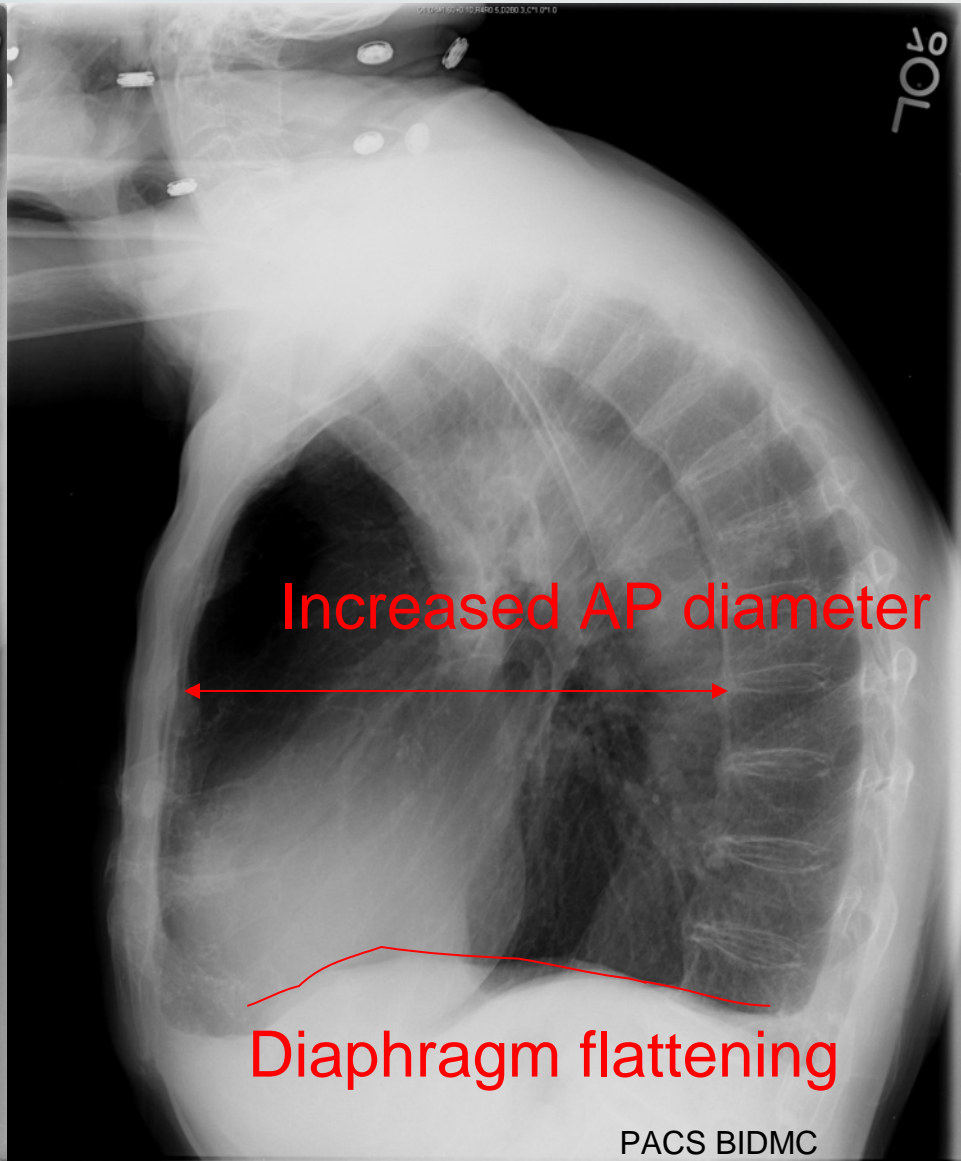
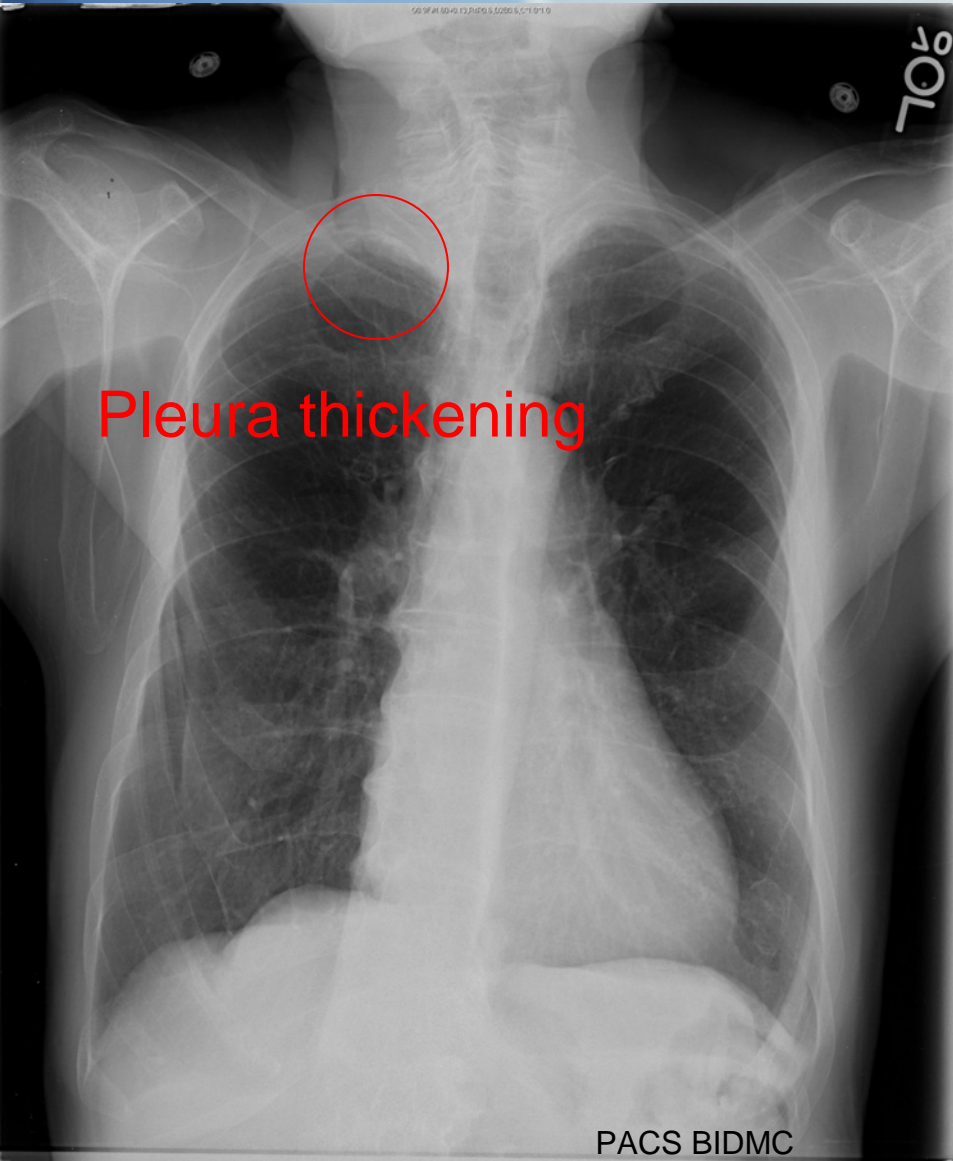


# Common causes of pleuritic pain

- Pneumonia
- Infarction / Embolism
- Neoplasm
- Rib fracture
- Muscle strain
- Early Herpes zoster reactivation
- Rare disease like Bornholm disease



# Chest radiograph



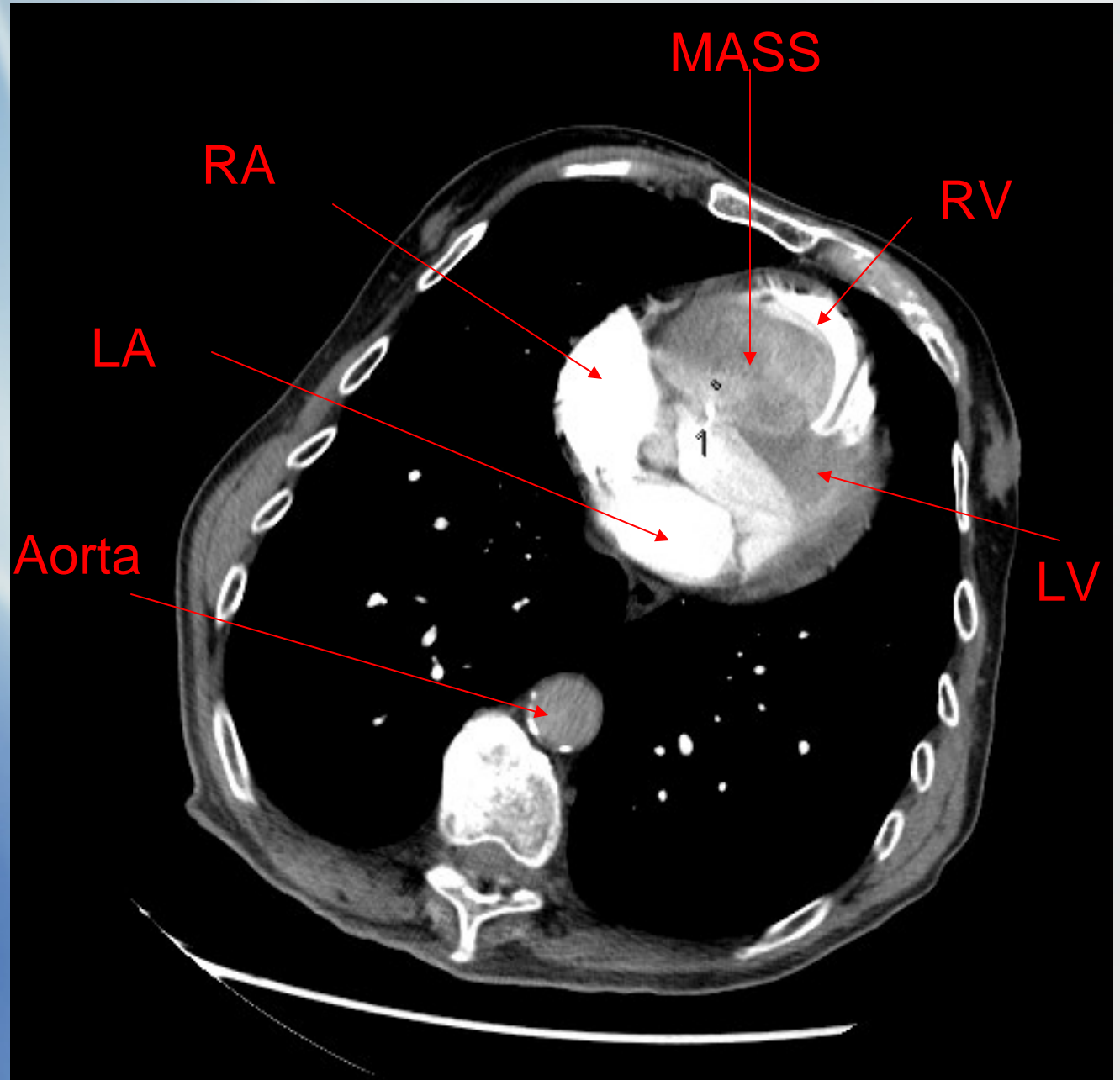
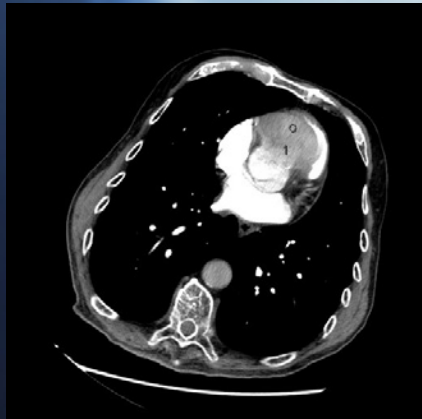
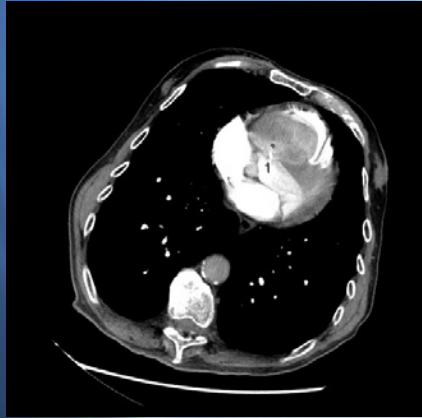


# Chest radiographic findings

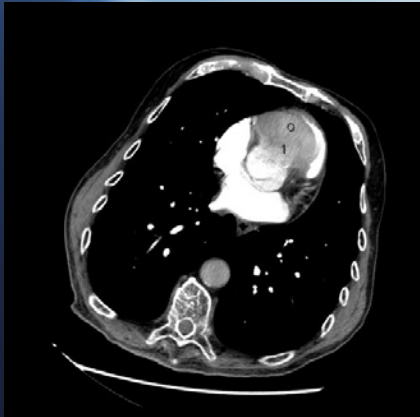
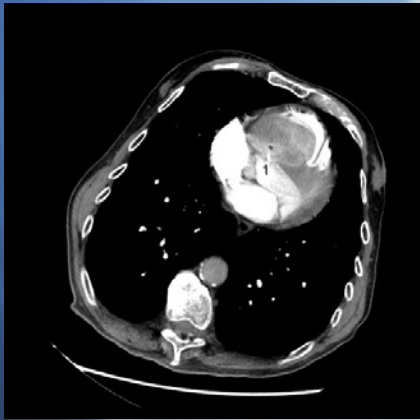
- Pleura thickening found on chest radiograph 2 years ago, no obvious interval changes
- Increased AP diameter and diaphragm flattening consistent with emphysema
- Heart slightly enlarged for a COPD patient



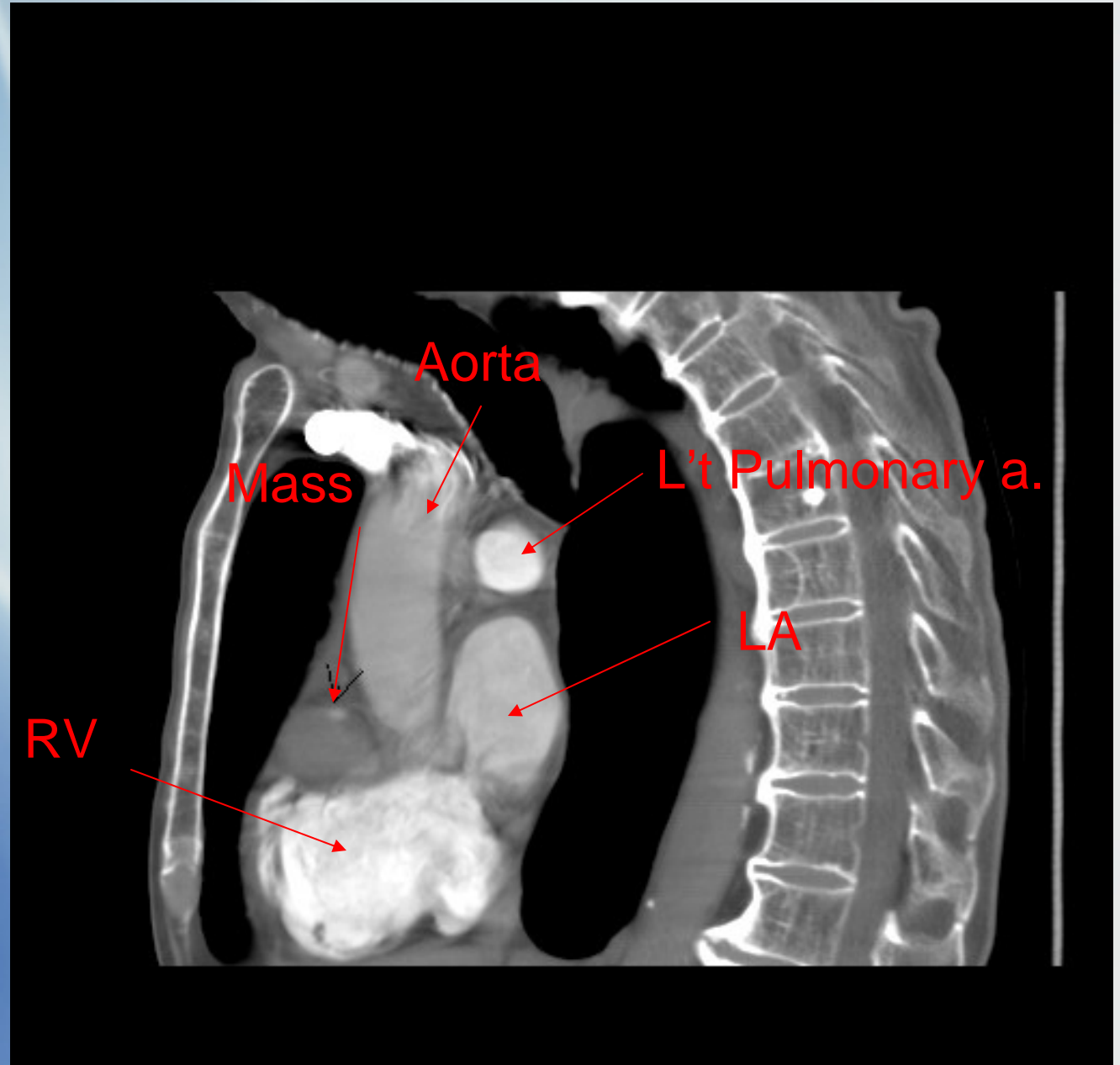
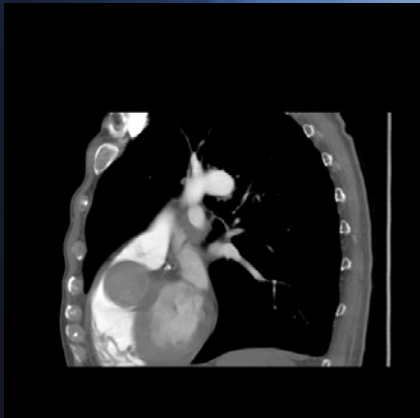
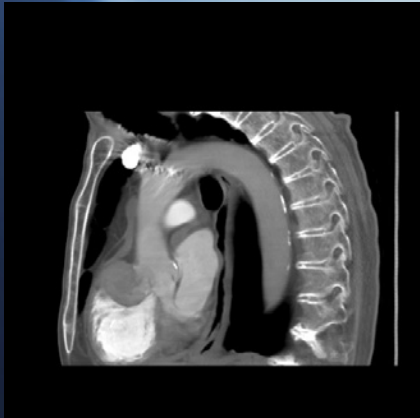
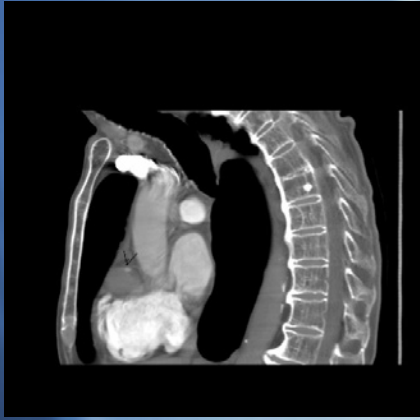
# CT Angiography



# CT Angiography

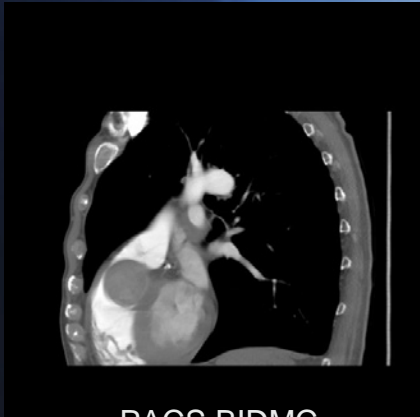
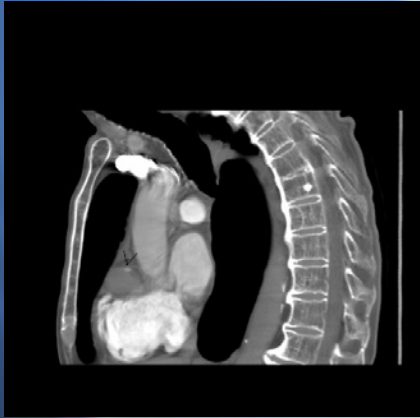


# CTA sagittal reconstruction

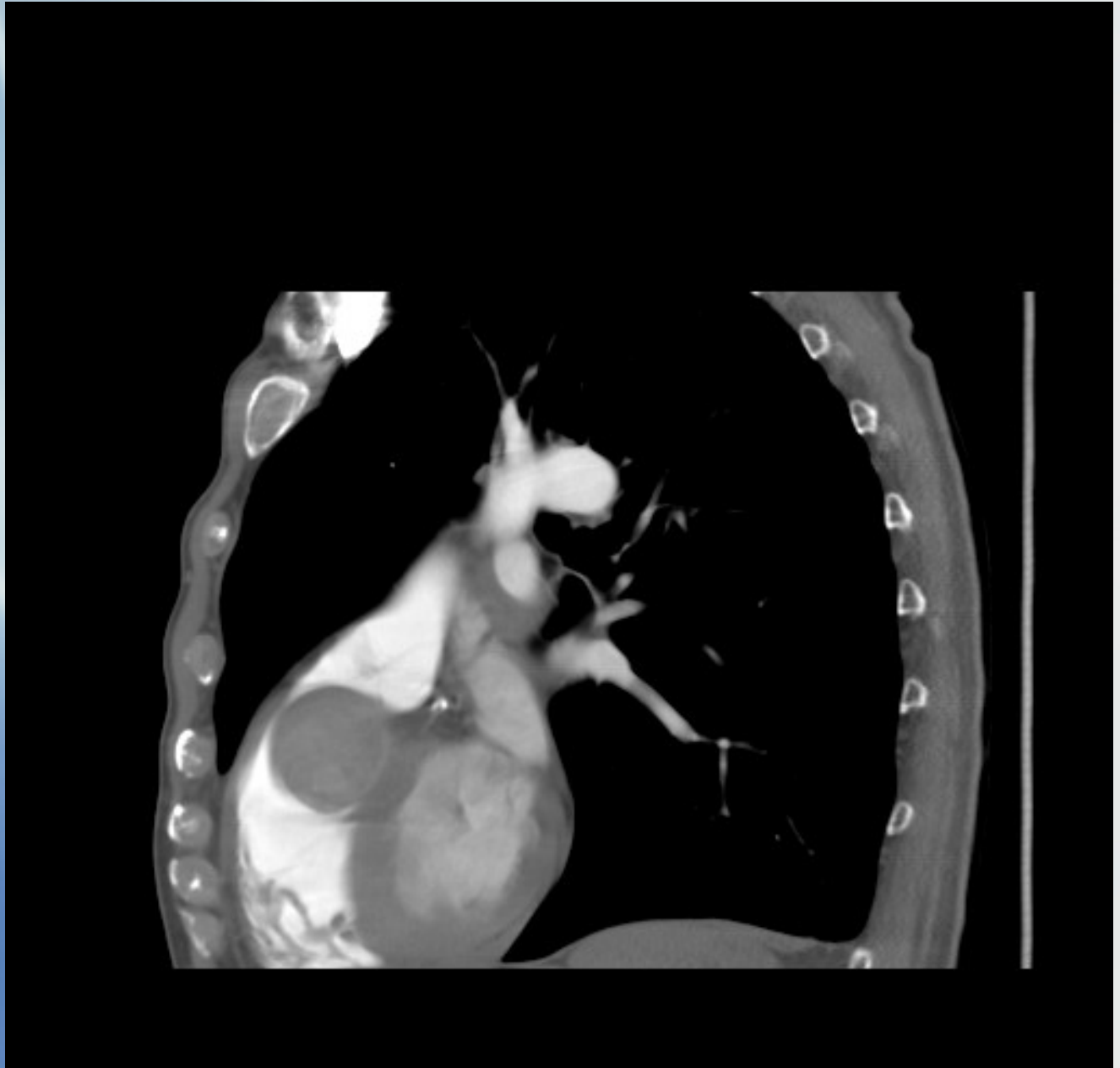
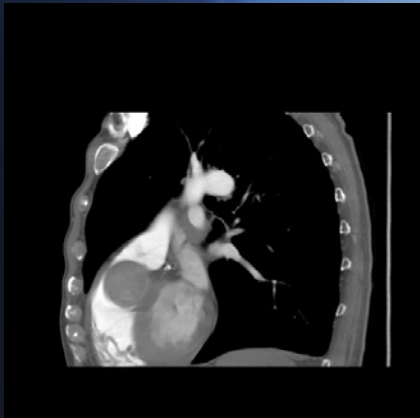
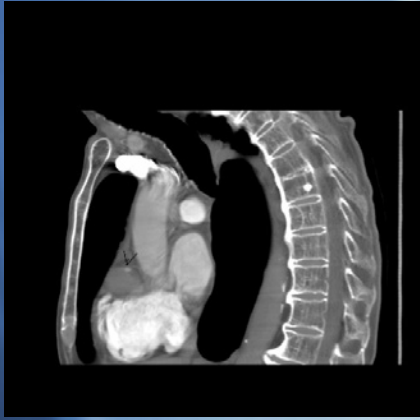




# CTA sagittal reconstruction



# CTA sagittal reconstruction





# Differential diagnosis

Intracardiac enhancing mass  
within the right ventricular outflow tract,  
which could be:

- Primary heart tumor - ex: myxoma
- Metastatic tumor
- Aneurysm
- Thrombus



- Some more information about

# Sinus valsalva aneurysm



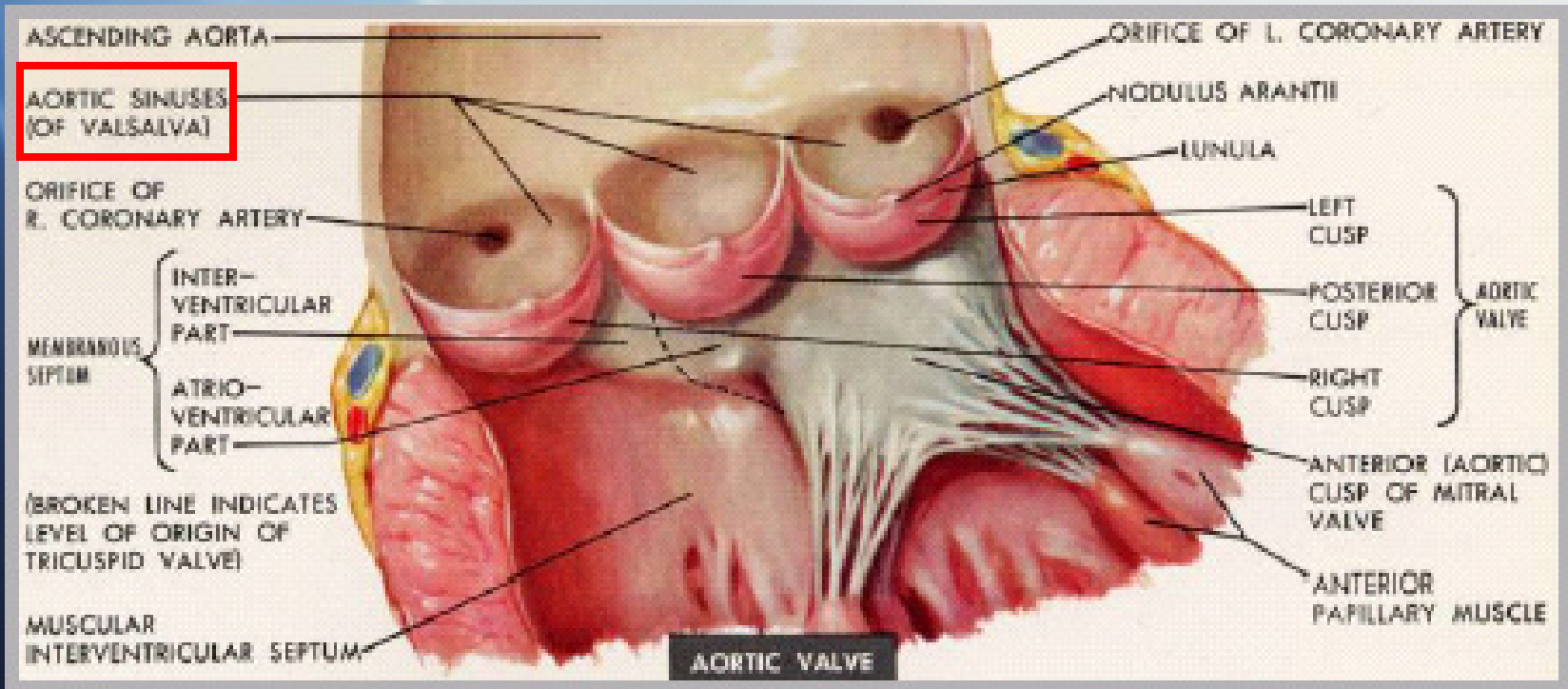
# Epidemiology

- Prevalence: US: 0.09% during autopsy, higher in Asia.
- Mostly congenital
- Male/female ratio = 4:1
- 75~90% on Right cusp, then the non-coronary cusp, rare on left
- Average age of ruptured ones is 30





# Pathophysiology



- From incomplete fusion of the distal bulbar septum which divides the aorta and pulmonary artery during embryological development



# Acquired Sinus Valsalva Aneurysm

Rare, more often on left cusp, common  
etiology including:

- Bacterial endocarditis
- Trauma
- Syphilis
- TB
- Behcet disease



# Clinical presentation

- No-rupture: asymptomatic, or angina, syncope or dizziness due to coronary and conduction system compression
- Small rupture: asymptomatic or s/s of progressive heart failure
- Massive rupture: acute chest pain with dyspnea, s/s like acute MI



# Radiographic findings

- Not apparent on chest radiograph, occasionally R't mediastinum contour change, enlarged heart size
- 2-D Dopplar echo as the principal technique to diagnose
- CT and MR helpful in the planning of appropriate surgical or transcatheter approach.



# Acknowledgement

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- Thanks to all the residents and attendings that taught and guided me in the 4 weeks.





# References

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