

# AMSER Case of the Month: December 2018

29 year old Female presenting with severe left thoracic back pain,  
fever and pleuritic chest pain



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# Patient Presentation

- HPI: 29 year old female transferred from outside hospital for 3 day history of severe left thoracic back pain and pleuritic chest pain
- PMH: IV drug abuse and depression
- PSH: noncontributory

# Pertinent Labs

At outside hospital 4/11/18

- Temp 39.3
- HR: 140
- RR: 22
- SpO2: 100% on room air
- BP: 136/83
- Labs significant for WBC of 15.9

At hospital

- Labs significant for WBC of 12.61
- Blood cultures positive for MRSA
- UDS positive for cocaine and opiates

# What Imaging Should We Order?

## American College of Radiology ACR Appropriateness Criteria®

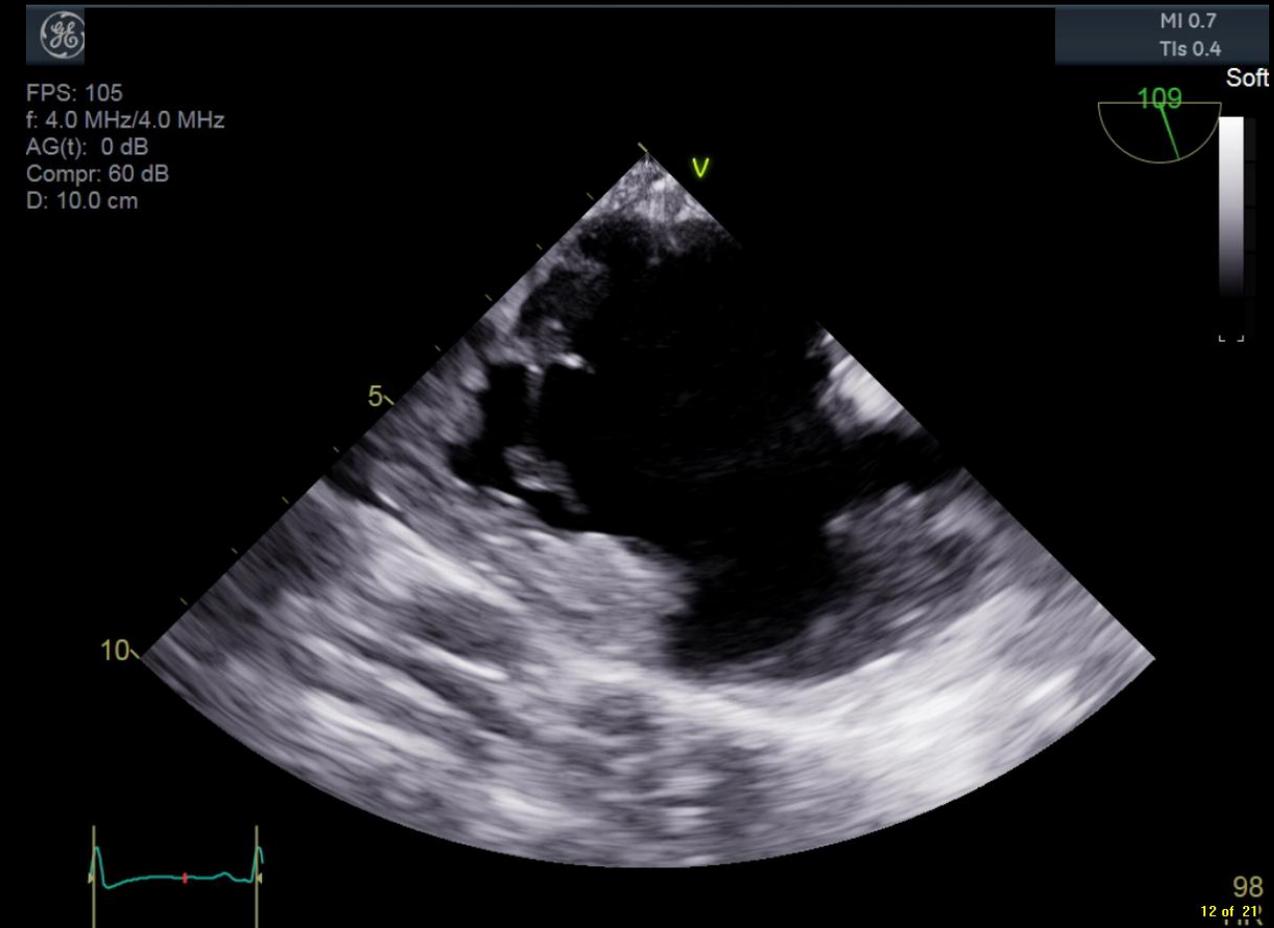
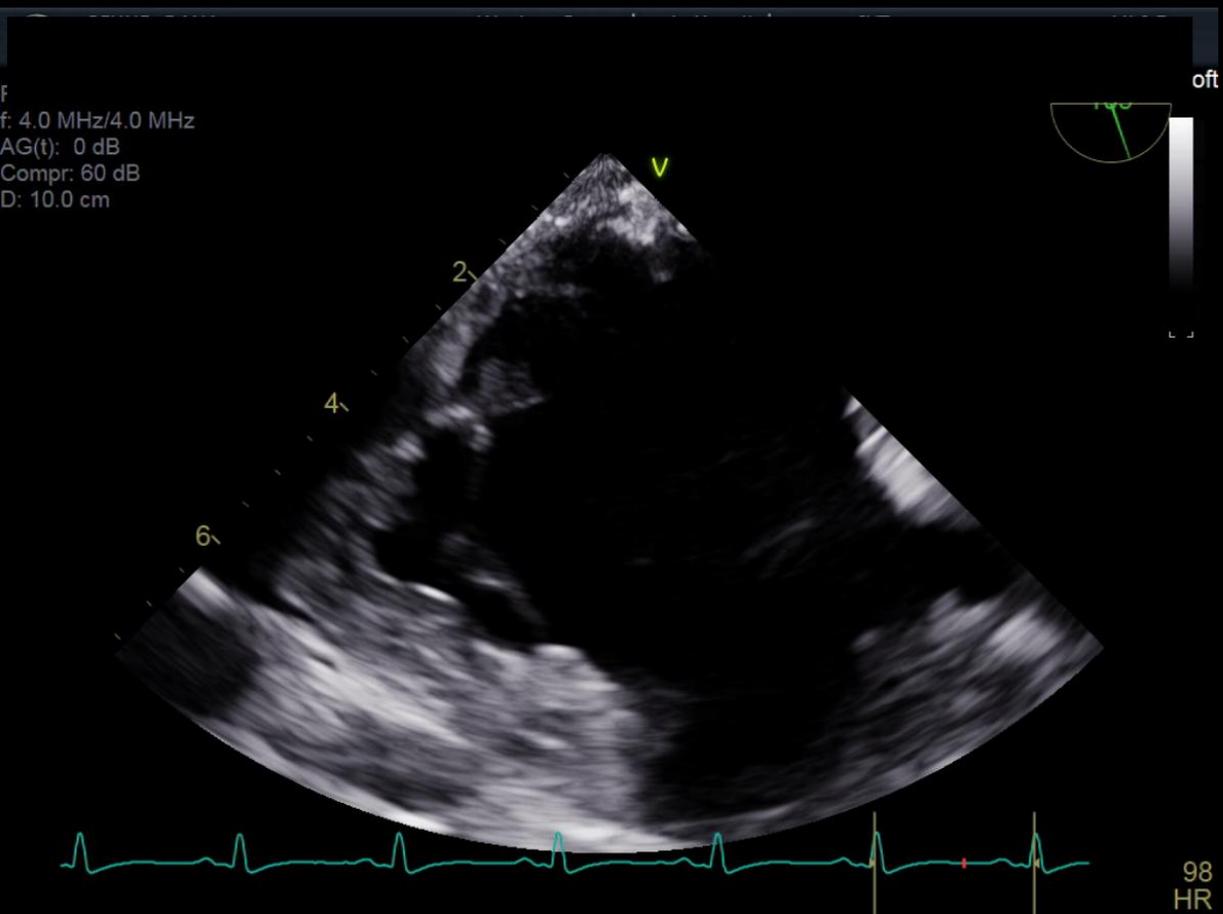
**Clinical Condition:** Suspected Infective Endocarditis

Radiologic Procedure	Rating	Comments	RRL*
US echocardiography transthoracic resting	9	This is the preferred modality.	O
X-ray chest	8	This procedure is useful for monitoring cardiopulmonary status.	⊕
US echocardiography transesophageal	8	This invasive procedure is used when better definition of anatomy is required.	O
CT heart function and morphology with IV contrast	6	This procedure is used mainly in the setting of suspected paravalvular infections and to evaluate prosthetic heart valves.	⊕ ⊕ ⊕ ⊕
MRI heart function and morphology without IV contrast	6	This procedure is used mainly in the setting of suspected complications and for quantifying the volume of valvular regurgitation.	O
MRI heart function and morphology without and with IV contrast	6	This procedure is used mainly in the setting of suspected complications and for quantifying the volume of valvular regurgitation.	O
CT chest with IV contrast	5	This procedure can be helpful to evaluate pulmonary findings such as septic infarcts.	⊕ ⊕ ⊕
CTA coronary arteries with IV contrast	5	This procedure is used mainly for better definition of coronary artery origin and course prior to surgery.	⊕ ⊕ ⊕

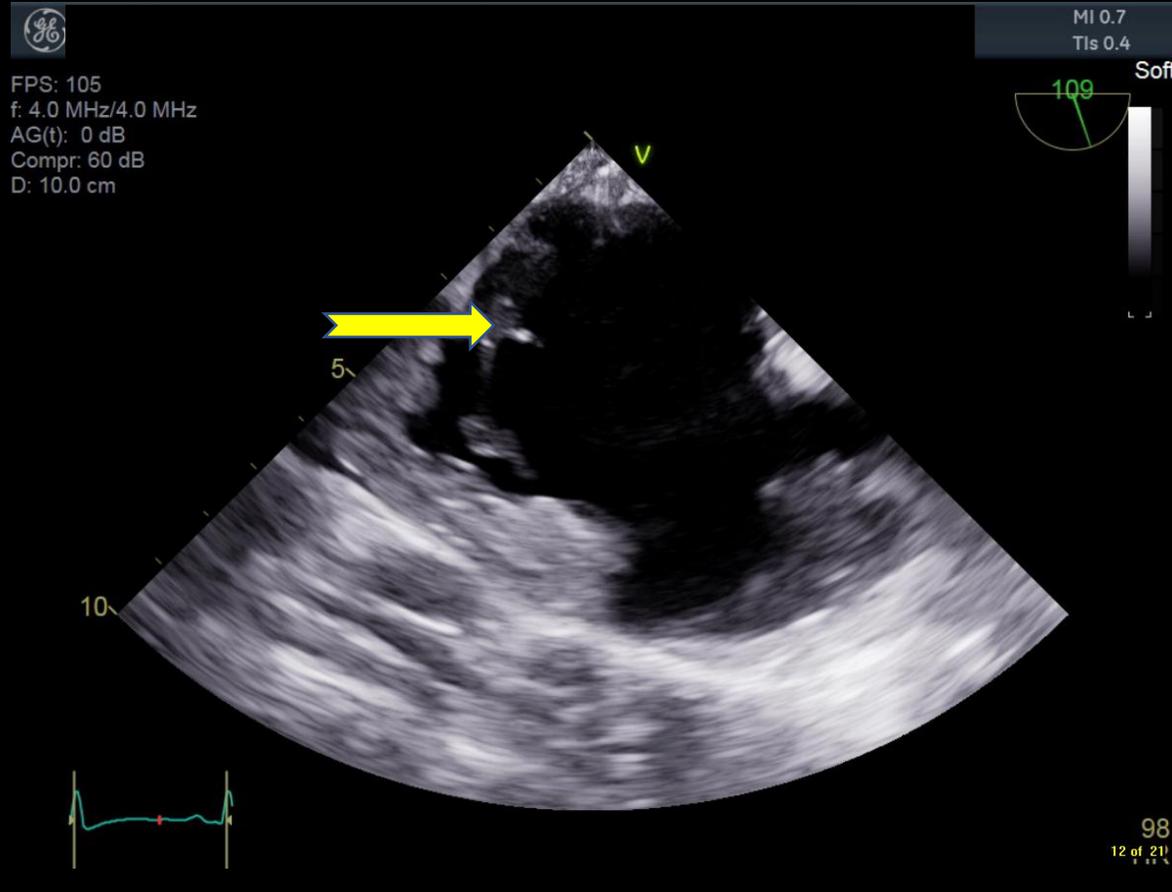
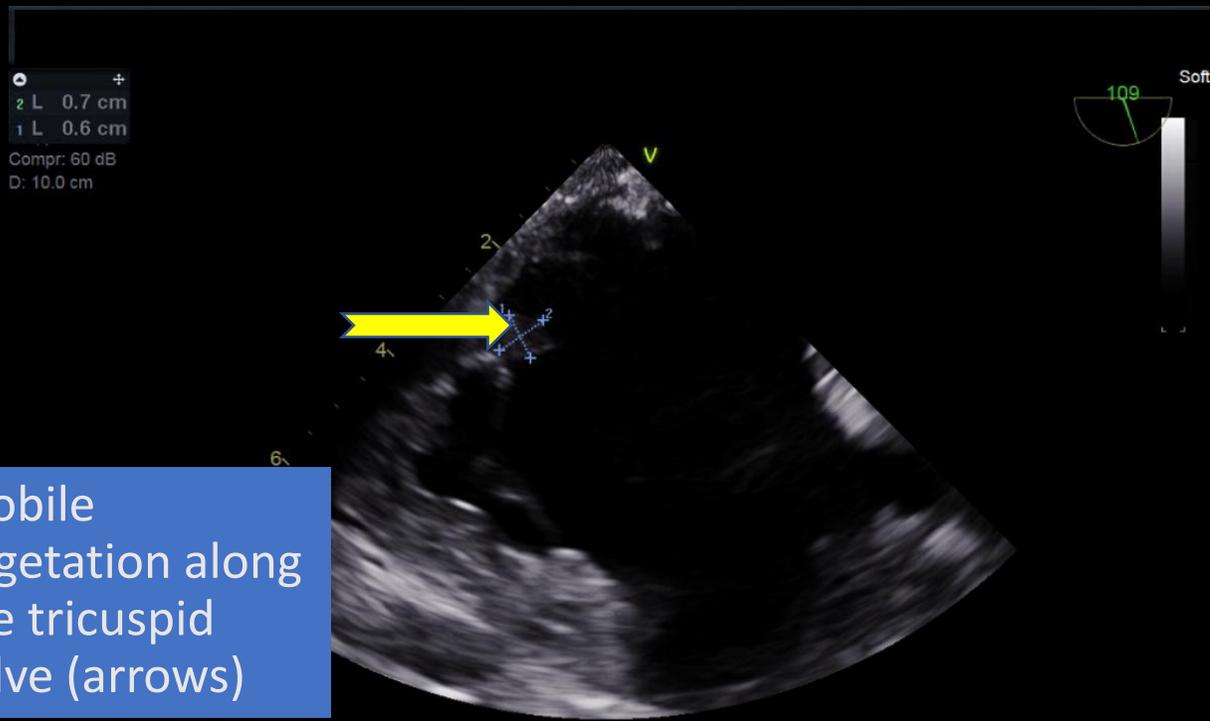
These imaging modalities were initially ordered by the hospitalist

CT scan was performed one week after the echocardiogram

# TEE (unlabeled)



# TEE (labeled)



# Findings (unlabeled)

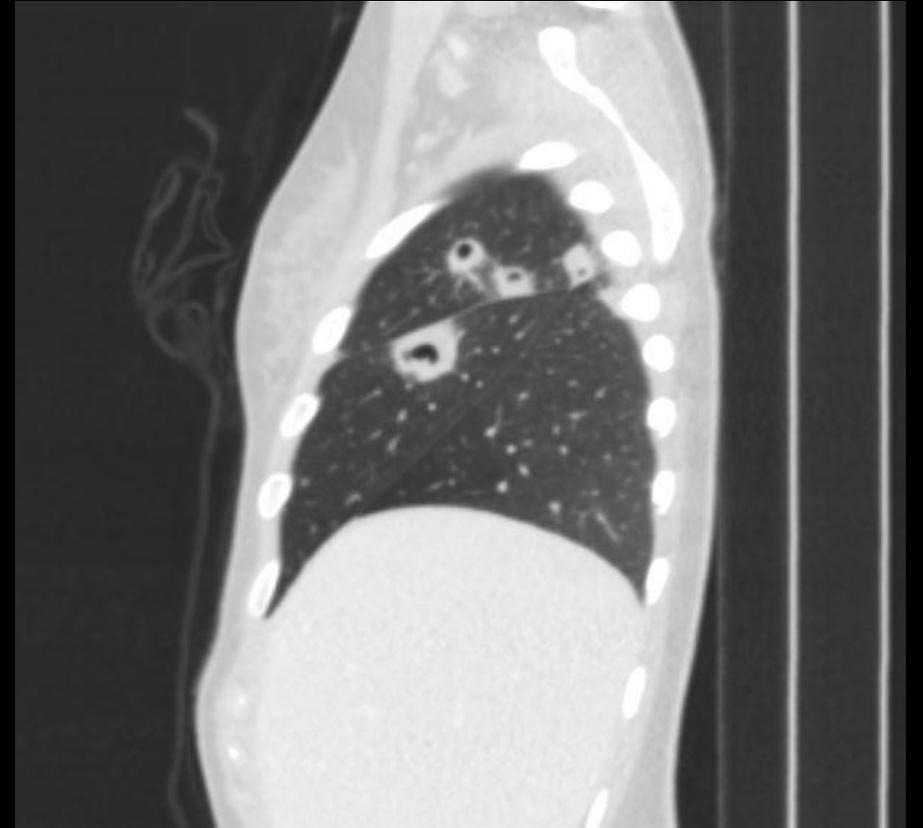
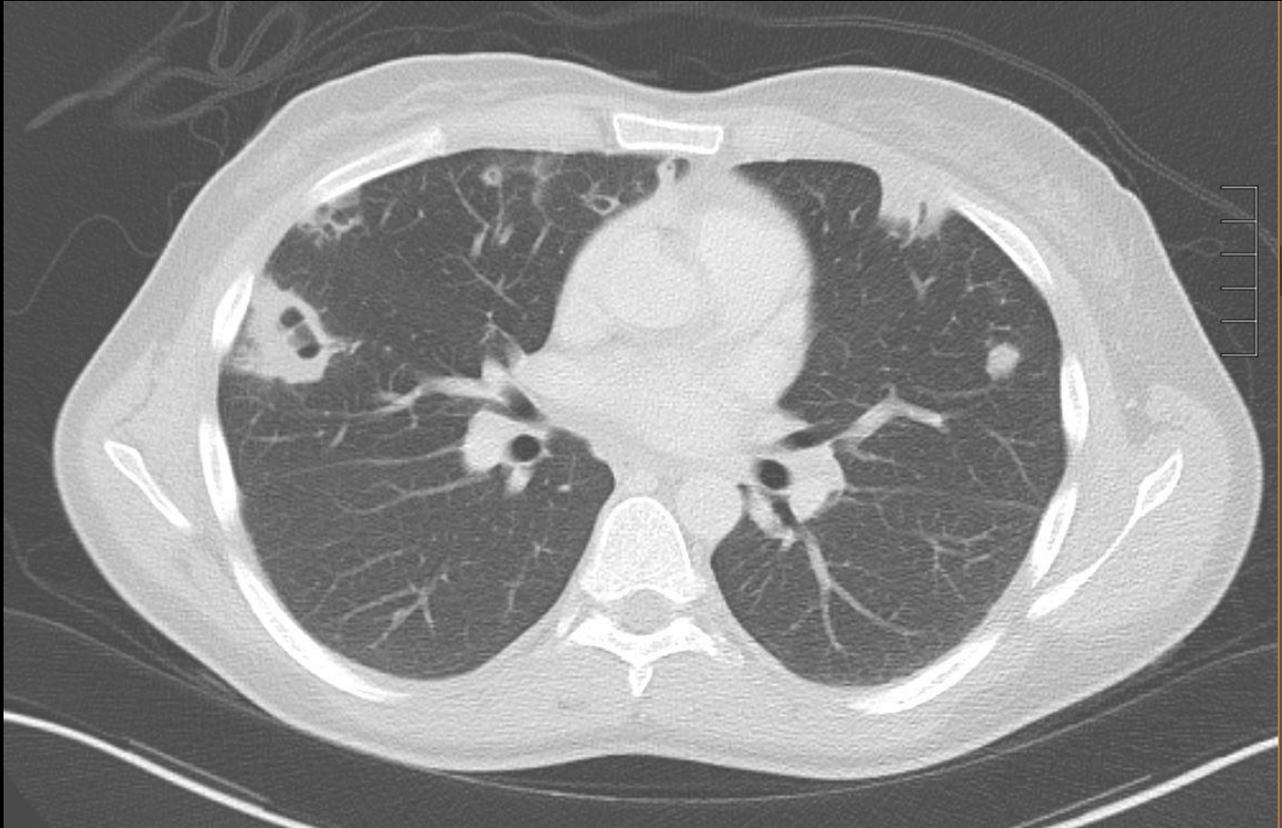


# Findings: (labeled)

There are multiple cavitory lesions

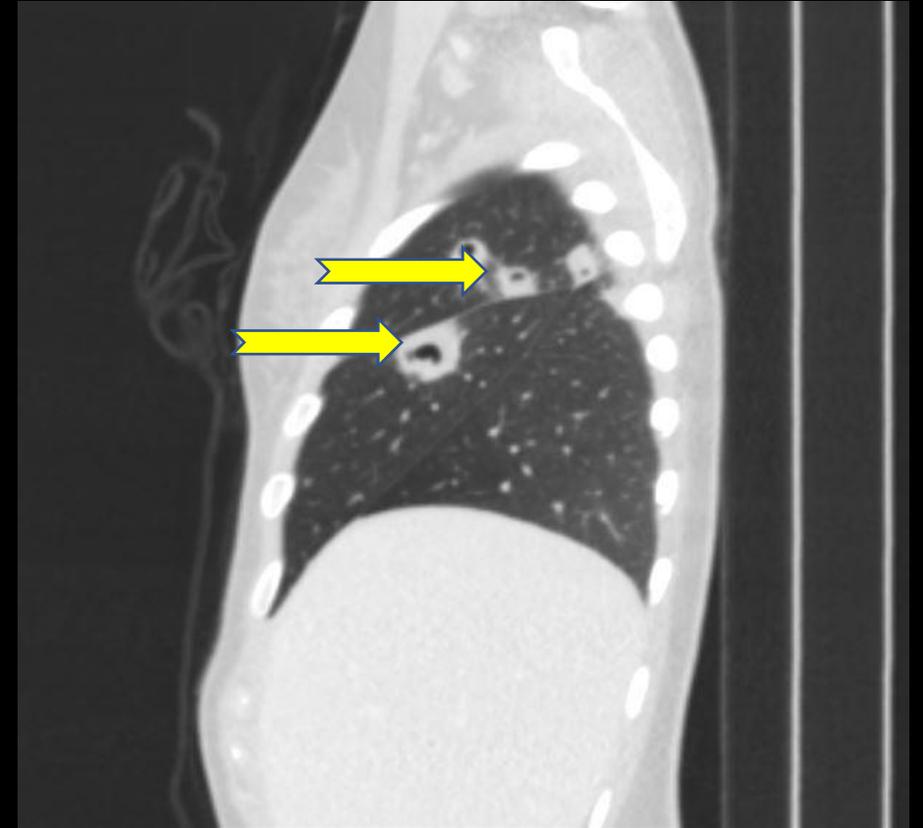
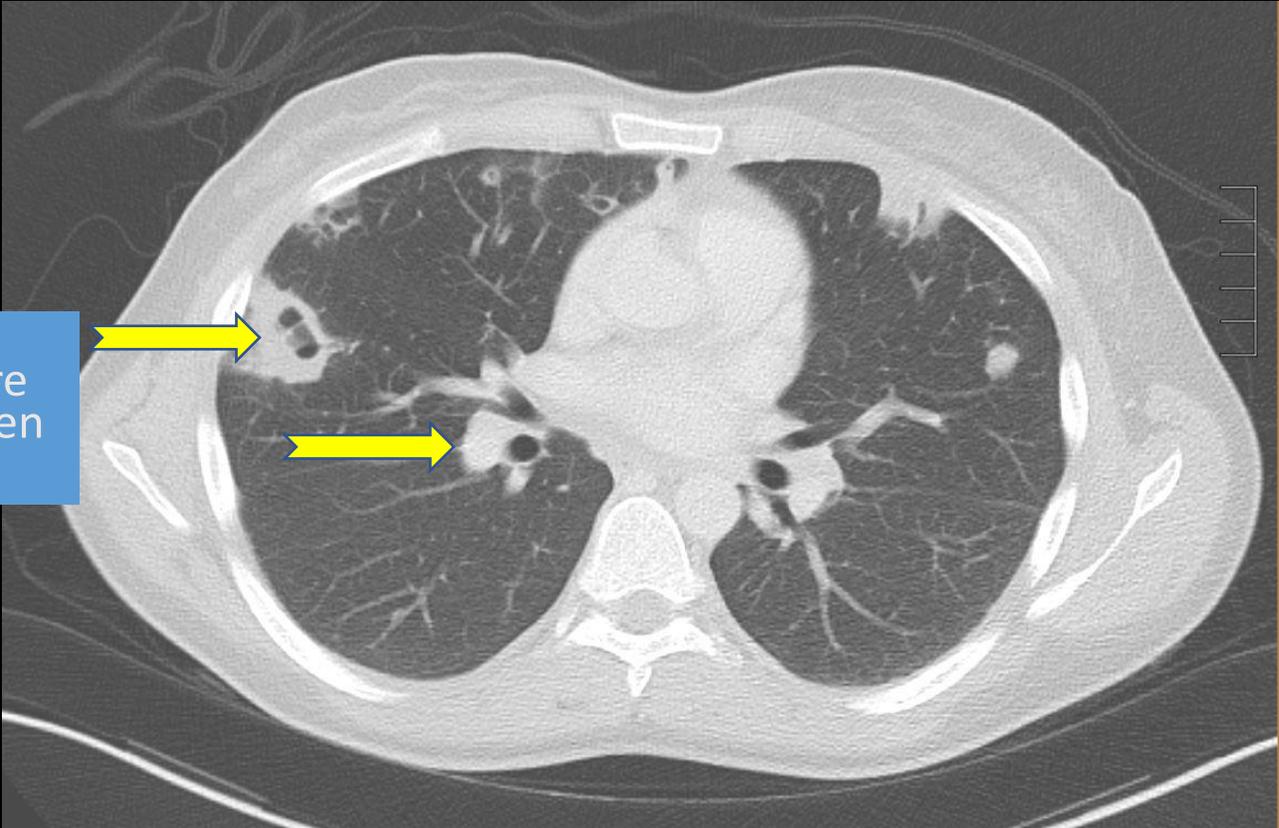


# Findings (unlabeled) Chest CT (lung windows)



# Findings (labeled)

Cavitary lesions are better seen on CT



Final Dx:

Pulmonary emboli from bacterial endocarditis

# Right Sided Infective Endocarditis

- Less common than left sided infective endocarditis
- 90% of right sided infective endocarditis involves the tricuspid valve
- Risk factors:
  - IV drug use
  - Pacemaker leads, defibrillator leads, vascular access for dialysis
- Micro
  - Predominant causative organism (60-90%): Staph aureus
  - Other causes: Pseudomonas aeruginosa, other gram negative micro-organisms, fungi, enterococci, streptococci, and poly-microbial infections
- Diagnosis
  - Persistent fever and bacteremia
- Treatment:
  - Antibiotics
  - 5-16% require surgical intervention (in instances of failed medical therapy, large vegetations >20mm, recurrent septic pulmonary embolism)

# Septic Pulmonary Emboli

- Diagnosis
  - Chest pain, cough, occasional hemoptysis
- Findings
  - Chest X-ray: nonspecific findings
  - CT: bilateral nodules or multifocal infiltrates, often involving peripheral lung zones, associated with cavitation
- Important tests to order
  - CT of chest, blood cultures, echocardiogram
- Complications
  - Lung abscesses, pleural effusion, empyema, and pneumothorax

# References:

Cook, R. J., Ashton, R. W., Aughenbaugh, G. L., & Ryu, J. H. (2005). Septic pulmonary embolism\*: Presenting features and clinical course of 14 patients. *Chest*, *128*(1), 162-6. Retrieved from <http://ezproxy2.library.drexel.edu/login?url=https://search-proquest-com.ezproxy2.library.drexel.edu/docview/200458859?accountid=10559>

Hussain ST, Witten J, Shrestha N, Blackstone EH, Pettersson GB. Tricuspid valve endocarditis. *Ann Cardiothoracic Surg* 2017; 6:255.