

# AMSER Case of the Month

## February 2025

71-year-old female with a history of cardiomyopathy (s/p heart transplant 1.5 years ago), presents with shortness of breath

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# Patient Presentation

71yoF with PMH of non-ischemic dilated cardiomyopathy (s/p heart transplant 1.5 years ago) & recurrent pleural effusions since transplant, presenting with shortness of breath

- Afebrile. Denied cough & URI symptoms
- Recurrent pleural effusions, s/p multiple thoracenteses
- Social history: quit smoking 40 years ago
- On tacrolimus since heart transplant
  - Chronic immunosuppression after solid-organ transplantation is associated with increased risk of cancer.

# Pertinent Labs

- Left thoracentesis (2 weeks ago)
  - negative for malignant cells and infection
  - chronic inflammatory effusion (>1000 nucleated cells)
- Right thoracentesis (4 weeks ago)
  - negative for malignant cells and infection
  - lymphocytic effusion (>50% lymphocytes)
- Tacrolimus 8.7 ng/mL (normal)
- CMV negative after treatment

What Imaging Should We Order?

# Select the applicable ACR Appropriateness Criteria

**Variant 3:**                      **Dyspnea, cough, or chest pain with suspected pleural effusion, noninfectious. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
Radiography chest	Usually Appropriate	☢
CT chest with IV contrast	Usually Appropriate	☢☢☢ ←
US chest	May Be Appropriate (Disagreement)	○
CT chest without IV contrast	May Be Appropriate	☢☢☢
MRI chest without and with IV contrast	Usually Not Appropriate	○
MRI chest without IV contrast	Usually Not Appropriate	○
CT chest without and with IV contrast	Usually Not Appropriate	☢☢☢
CTA chest with IV contrast	Usually Not Appropriate	☢☢☢

This imaging modality was ordered by the thoracic surgeon

# Findings: (unlabeled)



Axial: Soft tissue window

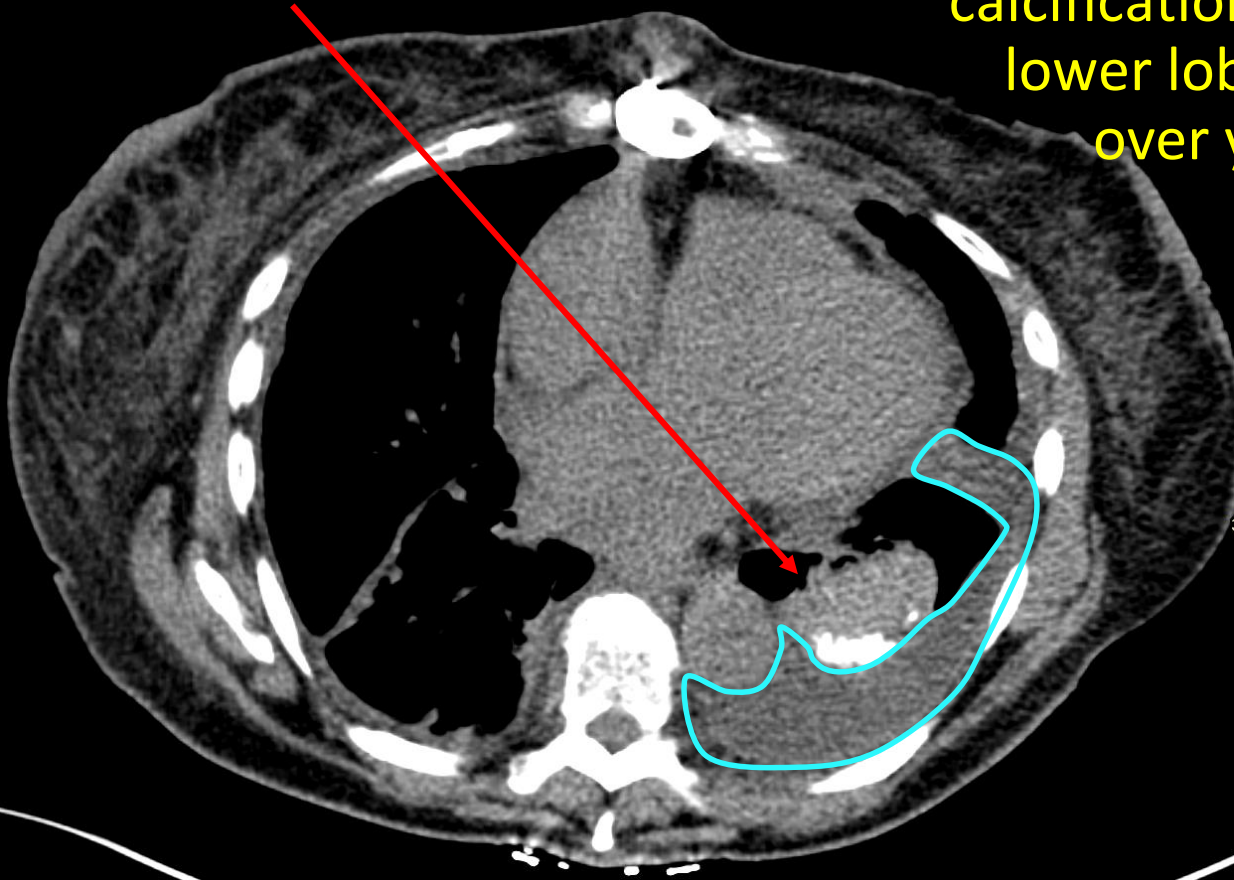


Axial: Lung window

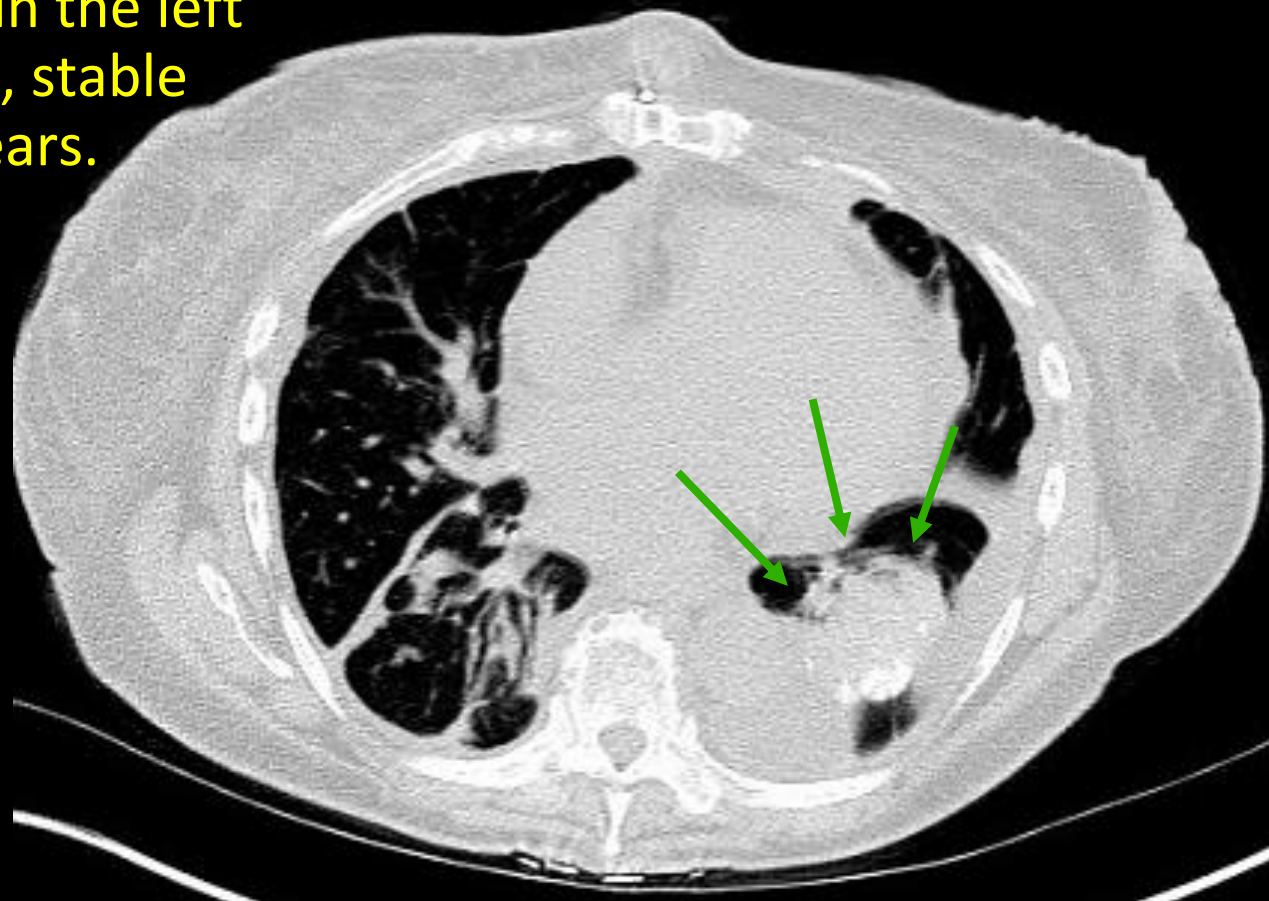


# Findings: (labeled)

Peripheral rounded opacity



Chronic dystrophic calcification in the left lower lobe, stable over years.



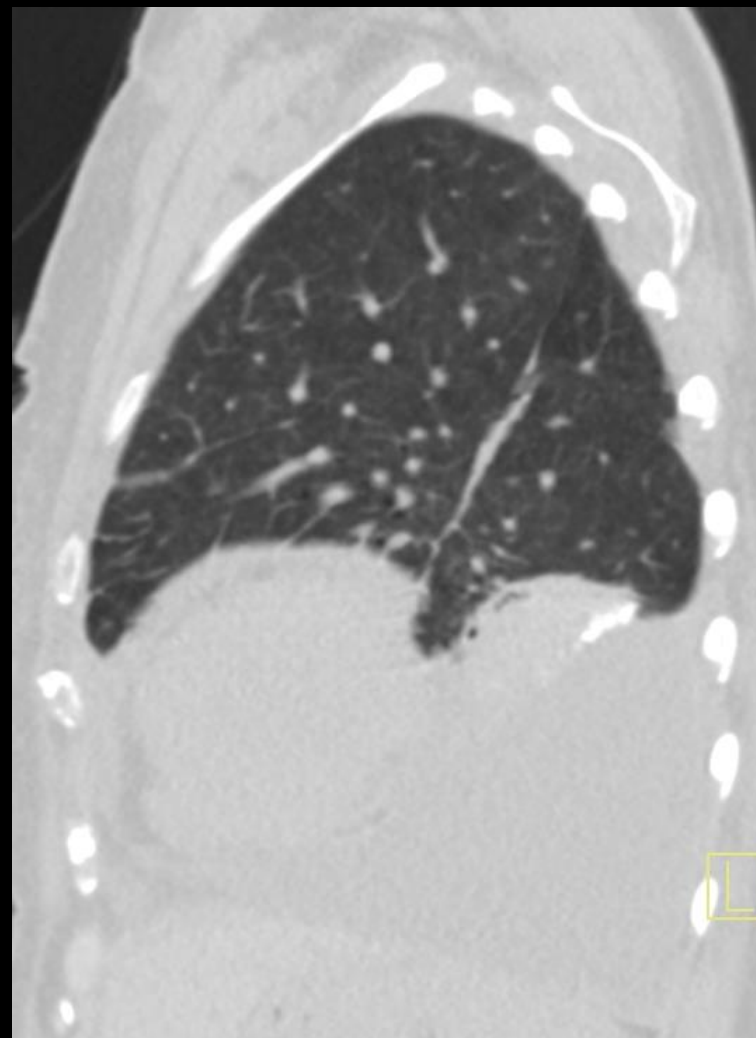
Peripheral, round opacity associated with pleural effusion

Airway and vessel leading to opacity curves around it

# Findings (unlabeled)



Sagittal: Soft tissue window

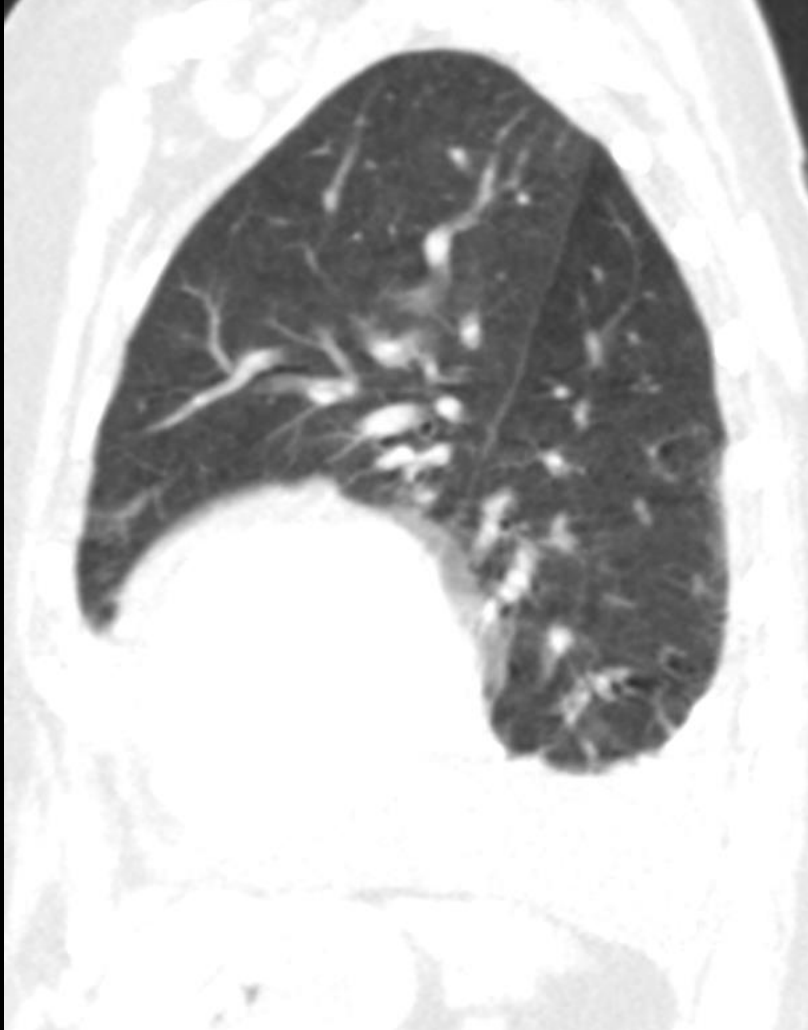
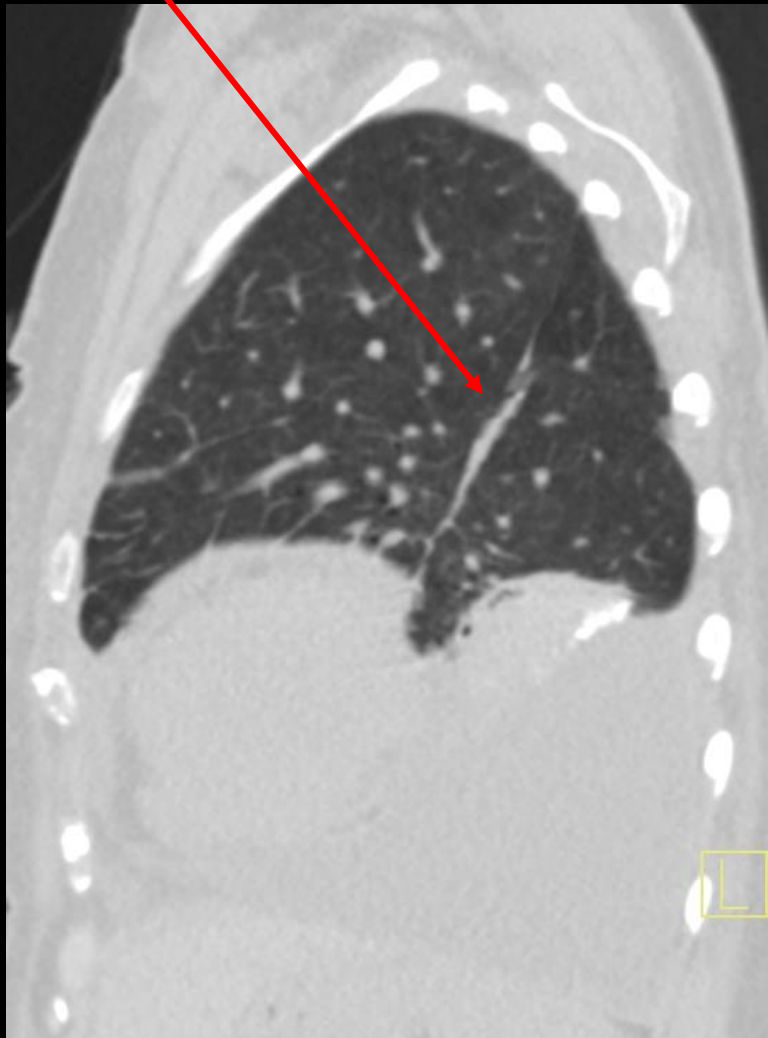


Sagittal: Lung window



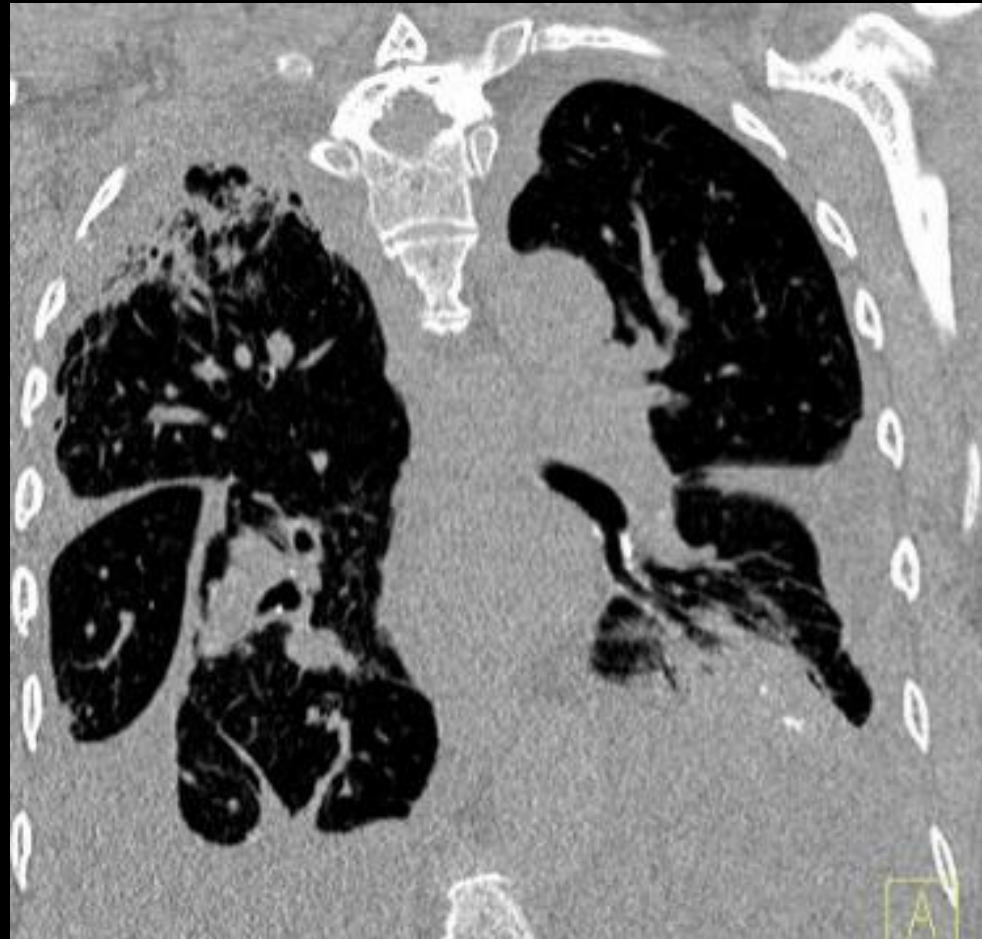
Volume loss of left lower lobe  
Indicated by posterior  
retraction of fissure

# Findings (labeled)



Sagittal: Lung window @present    Sagittal: Lung window @ 1.5yrs back

# Findings: (unlabeled)



# Findings: (labeled)



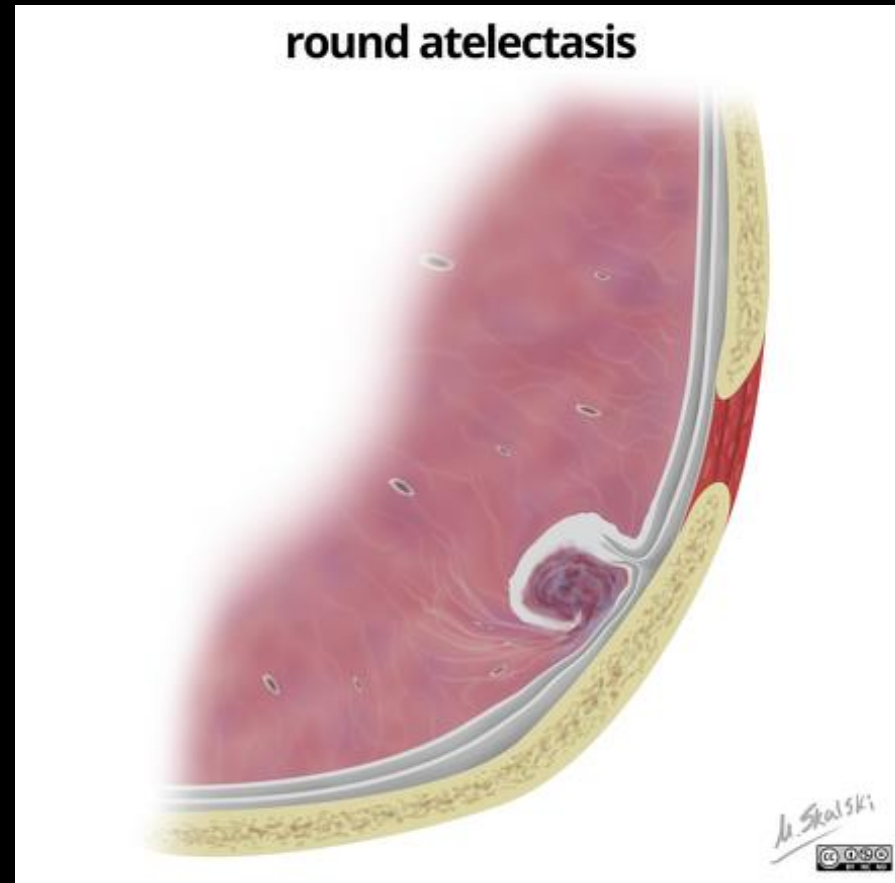
Comet tail sign  
Curvilinear bronchioles and  
vessels, appearing to be pulled  
into a nearby mass

Final Dx:

Round atelectasis  
(A pulmonary pseudotumor)

# Case Discussion

Round atelectasis: in-folding of redundant pleura



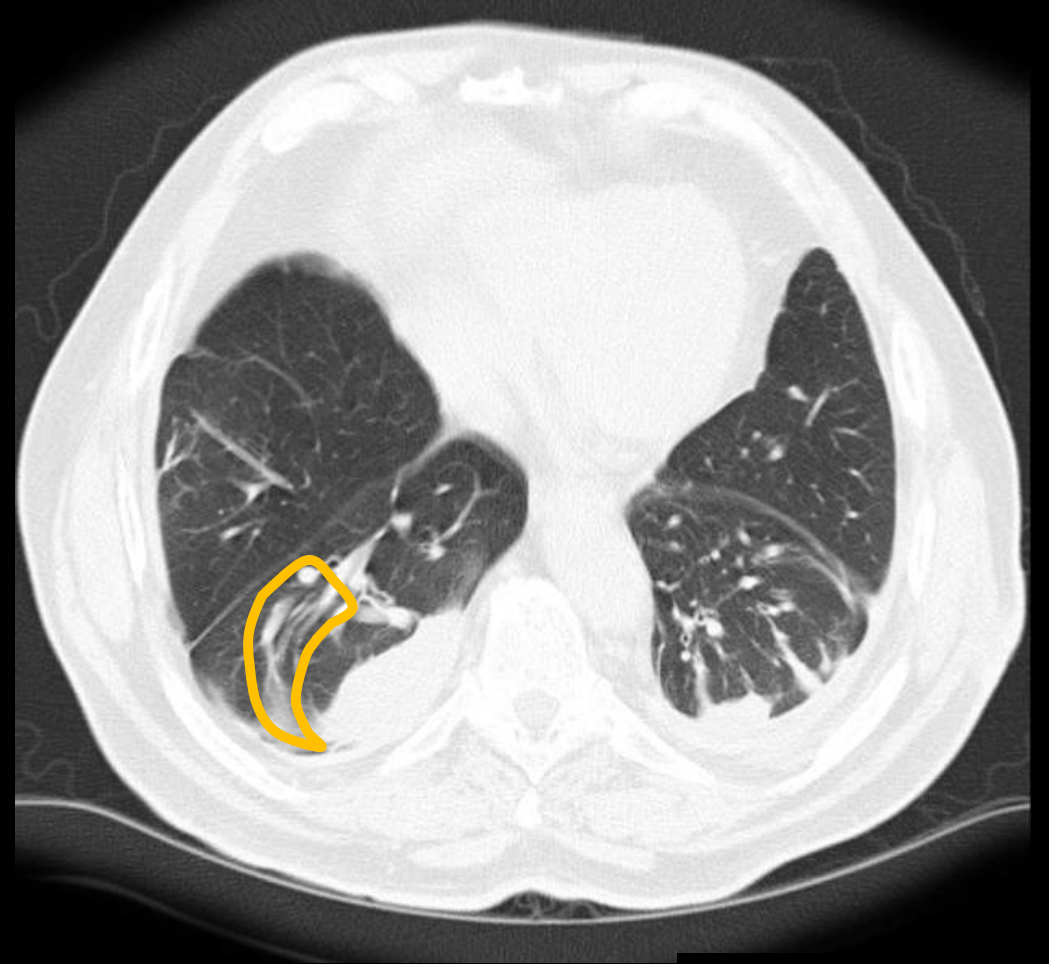
Skalski M Pleural thickening: illustrations. Case study, Radiopaedia.org  
(Accessed on 19 Dec 2024) <https://doi.org/10.53347/rID-53333>



# Case Discussion

Round atelectasis has 5 criteria

- ✓ 1. Adjacent pleura must be abnormal (e.g., effusion, thickening)
- ✓ 2. Opacity must be peripheral and in contact with the pleura.
- ✓ 3. Opacity must be round or elliptical.
- ✓ 4. Volume loss must be present in the affected lobe.
- ✓ 5. Pulmonary vessels and bronchi leading into the opacity must be curved — **comet tail sign**.



# Case Discussion

- Patient met all 5 criteria for rounded atelectasis, a radiologic diagnosis
- No further work-up is recommended for rounded atelectasis
- Given the post cardiac transplant status with recurrent effusions, our patient received pleural fluid sampling to exclude infection, transplant rejection, or malignancy.
- Patient's recurrent pleural effusions causing dyspnea are likely a complication of her cardiac transplant and reactive

# References

- Génébès C, Brouchet L, Kamar N, Lepage B, Prévot G, Rostaing L, Didier A, Mazières J. Characteristics of thoracic malignancies that occur after solid-organ transplantation. *J Thorac Oncol*. 2010 Nov;5(11):1789-95. doi: 10.1097/JTO.0b013e3181f19226. PMID: 20975378.
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