

CIRA Case of the Month

Case Courtesy of Drs. C. Roscher, G.
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University of Manitoba

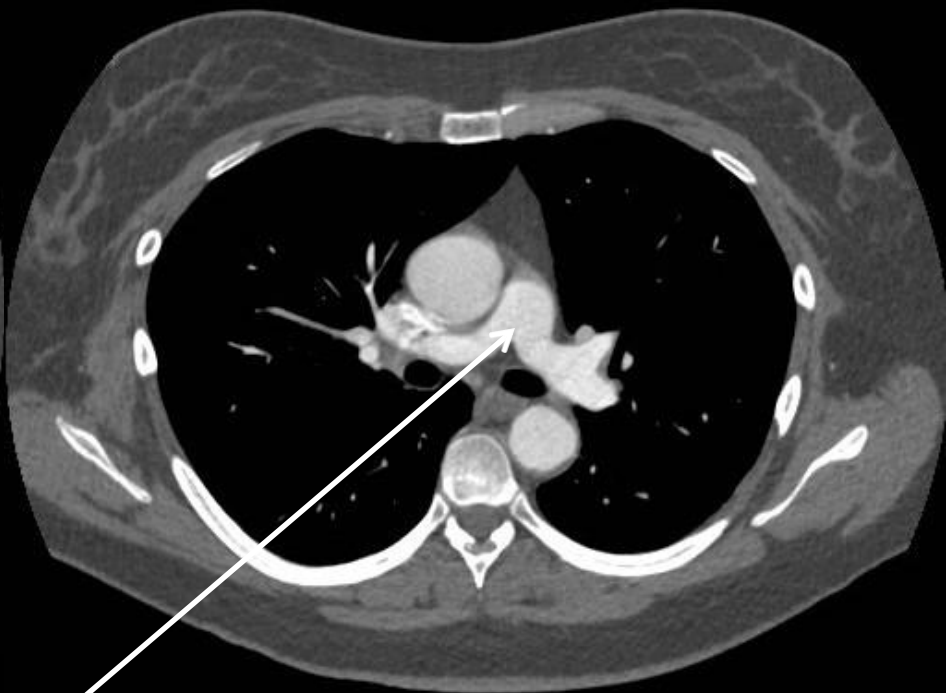
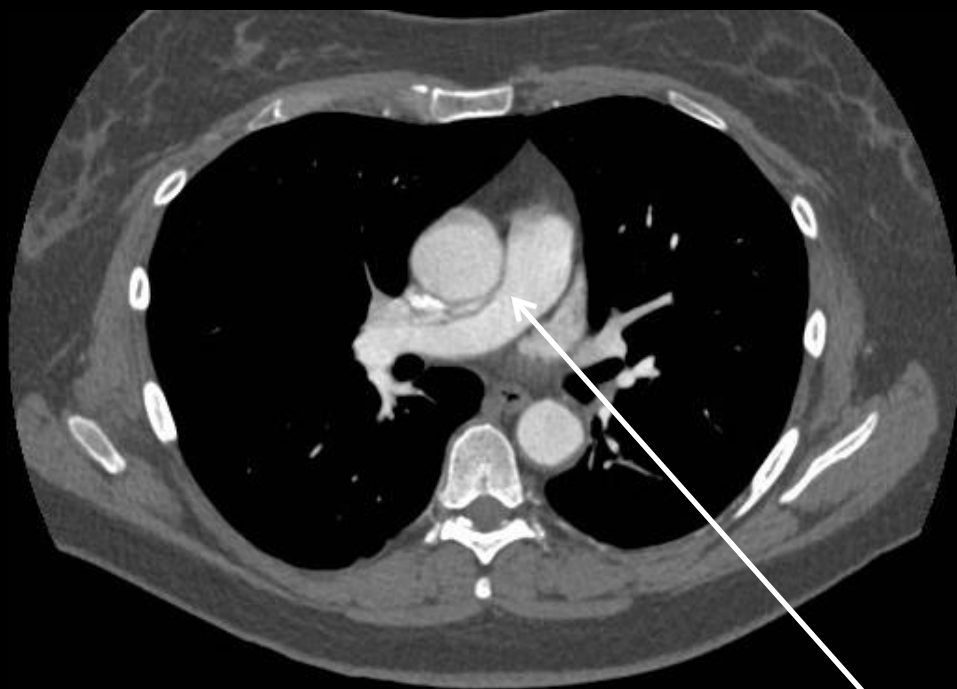


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Clinical Presentation

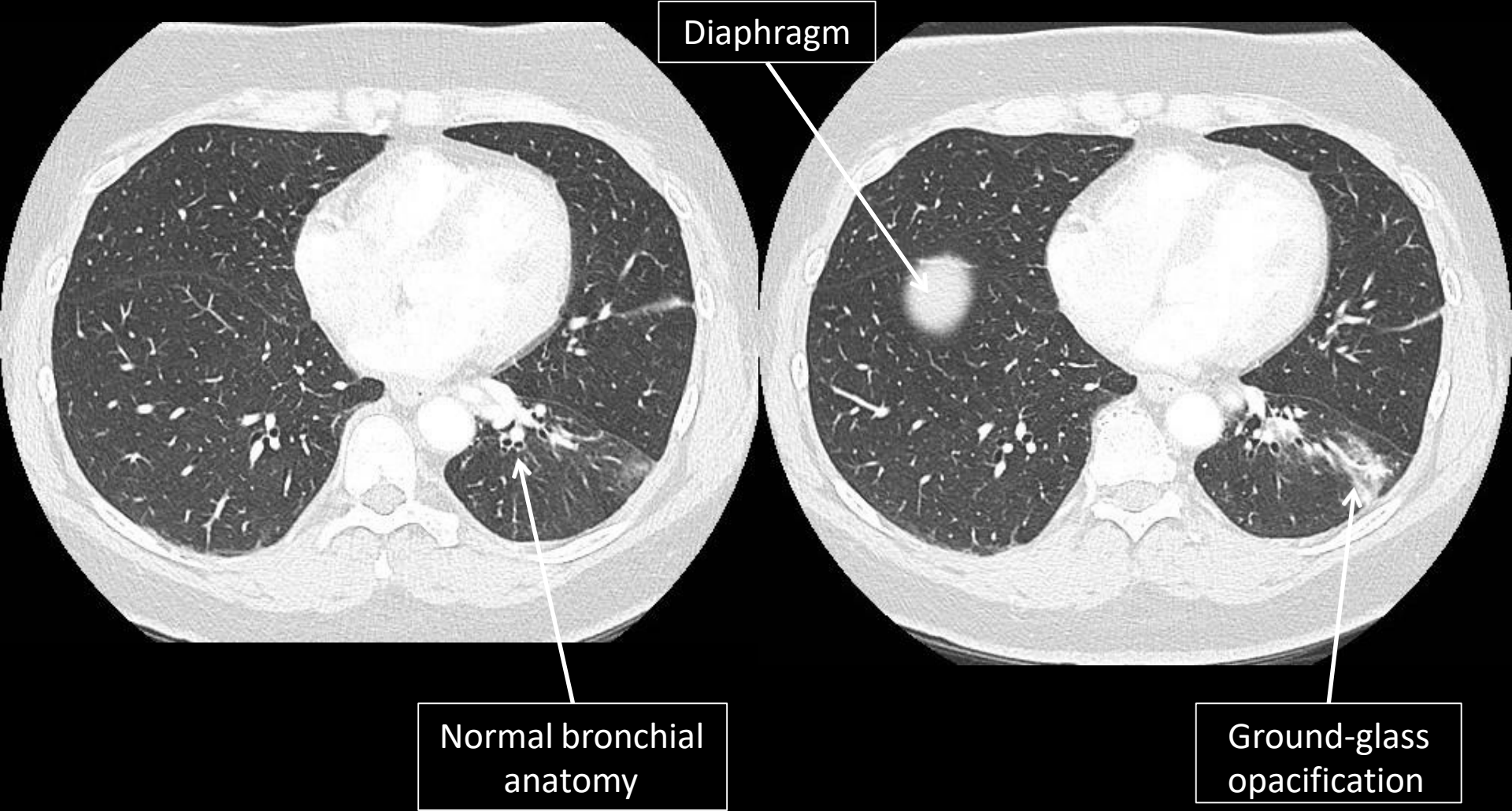
- 44 year old female presents to the ER with recurrent small volume hemoptysis and new SOB/OE
- PMHx: non-contributory, non-smoker
- Labs: WBC normal, d-dimer normal, electrolytes normal
- Physical examination: normal heart sounds, no murmurs, AE equal bilaterally, vitals stable
- A CTPE was performed to exclude PE

CTPE

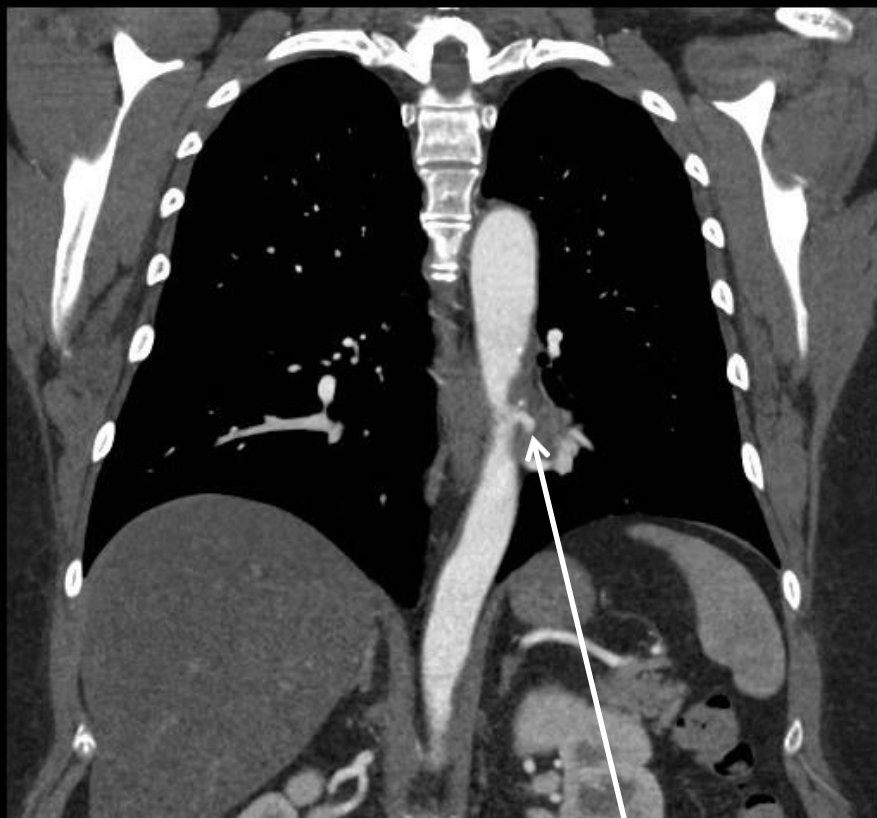


No evidence of
PE

CTPE



CTPE



Aberrant systemic arterial supply to
left lower lobe

CTPE Findings

- No evidence of pulmonary embolus
- Aberrant arterial supply to LLL from descending thoracic aorta
- Normal pulmonary venous drainage
- No evidence of chronic inflammation
- Normal bronchial anatomy

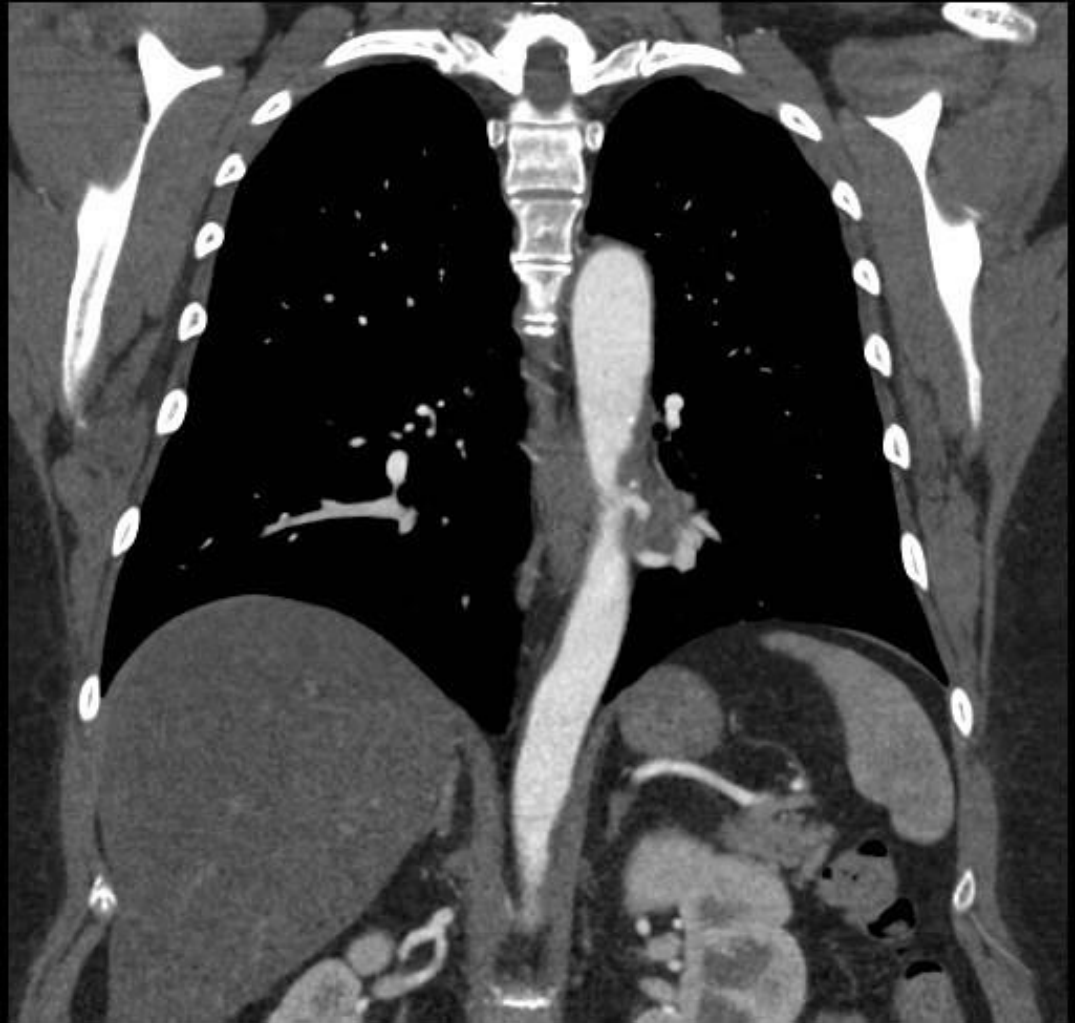
Aberrant Systemic Arterial Supply DDX

1. Acquired

- Chronic inflammatory disease
- Post-operative

2. Congenital

- Bronchopulmonary sequestration
- Hypogenetic lung (scimitar) syndrome
- Aberrant arterial supply to the normal lung



Systemic arterial supply to the lung

Chronic Inflammation?

Hypertrophied systemic artery associated with chronic inflammation

Yes

No

Aberrant systemic artery in congenital anomaly

Hypogenetic lung w/ abnormal venous return?

Yes

Scimitar syndrome

No

Normal bronchial distribution?

No

Yes

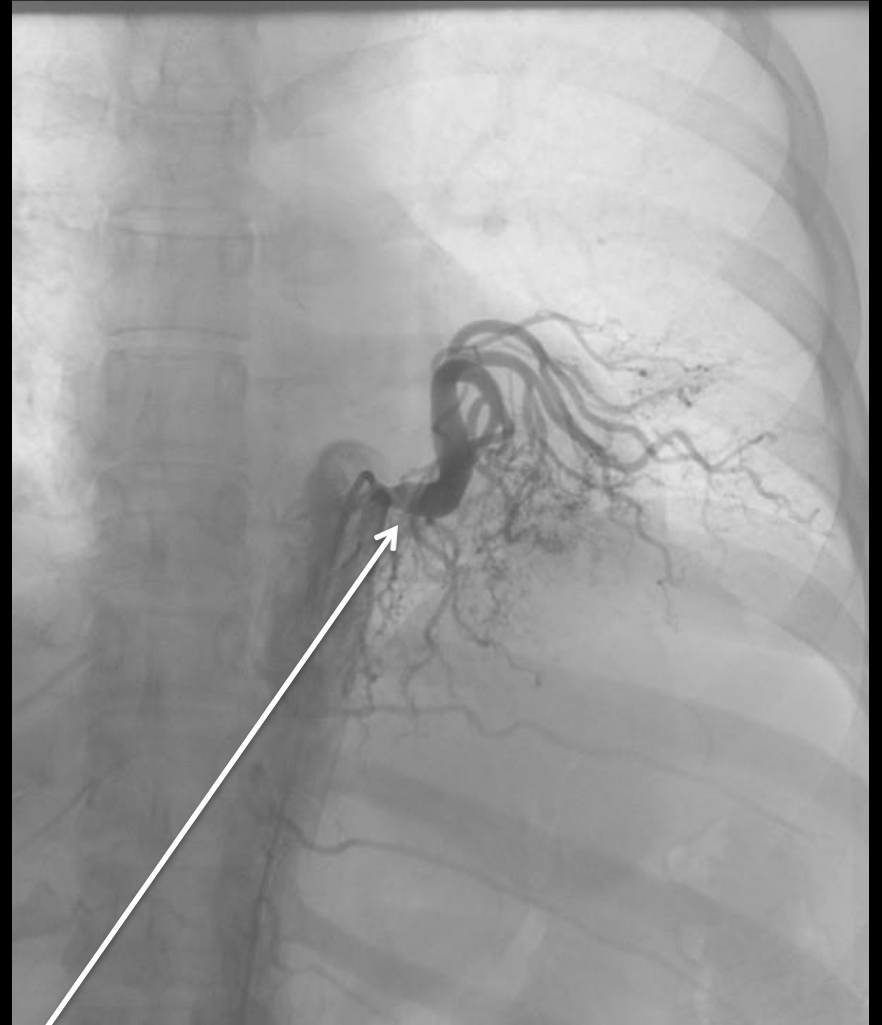
Pulmonary sequestration

Aberrant arterial supply to the normal lung

Extralobar

Intralobar

Angiography

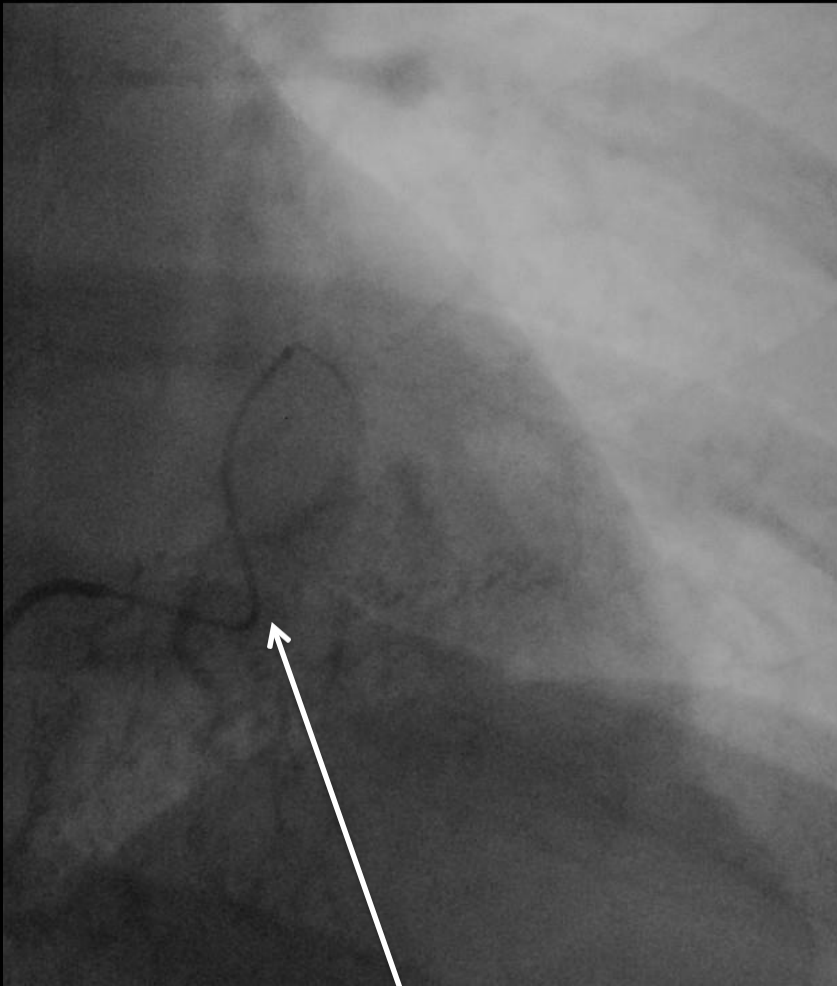


Aberrant systemic arterial supply

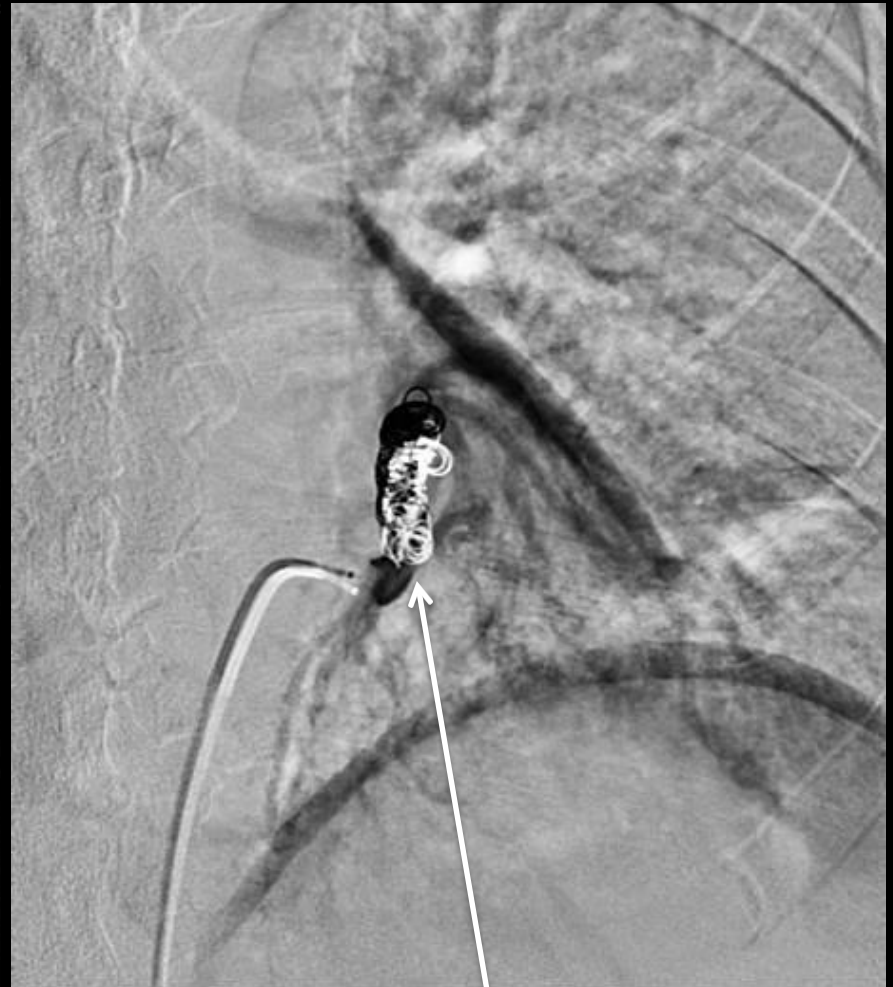
Clinical Progression

- 44 year old female presents to the ER with recurrent small volume hemoptysis and new SOB
- CT demonstrated no evidence of sequestration or hypogenetic lung syndrome
- Angiogram confirmed aberrant supply to the left lower lobe
- Initially, in consultation with referring clinician, no treatment was performed (small volume hemoptysis)
- Patient returns with massive hemotypsis

Embolization



Super Selective
Microcatheter



Embolization Coils

Embolization



Post embolization

Discussion

- Aberrant systemic arterial supply to normal lung
 - Rare
 - Presents with cardiac murmur, recurrent hemoptysis, dyspnea on exertion, and CHF (left to left shunt)
 - Decision for treatment controversial
 - Symptomatic - requires treatment
 - Incidental - new trend for preventative treatment in Asia

Discussion

- Aberrant systemic arterial supply to normal lung
 - Treatment
 - Surgical ligation of aberrant arterial supply
 - Endovascular embolization



Discussion

- Endovascular embolization
 - Small body of literature
 - Reported 47% recanalization within 12 months (based on 3 cases)
 - 100% successful treatment of hemoptysis 6 months post-embolization
 - To date 19 cases reports of successful embolization
 - Particles, coils, and vascular plugs utilized
 - No strong evidence for either technique



Clinical Progression

- No further hemoptysis following embolization
- Dyspnea on exertion improved
- Six month follow-up CT demonstrates persistent exclusion of the aberrant systemic supply from circulation

