A large, stylized graphic of a leaf or branch, rendered in a dark blue color, occupies the left side of the slide. It has a central vein and several smaller veins branching off, creating a naturalistic but abstract shape.

62-year-old female with increased dyspnea, increased work of breathing, and hemoptysis

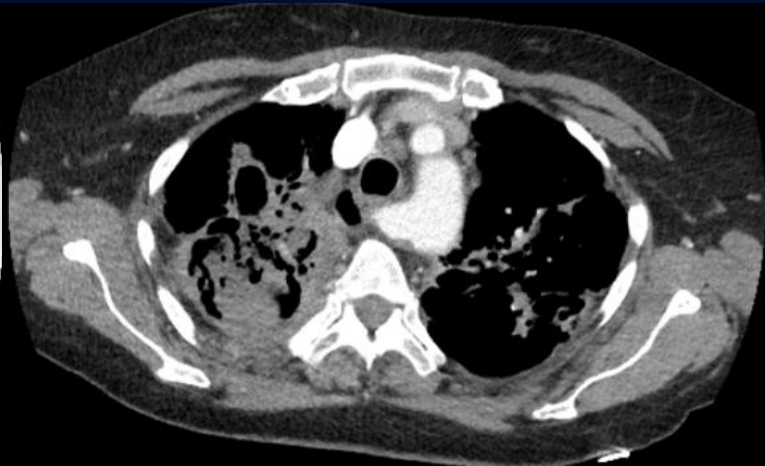
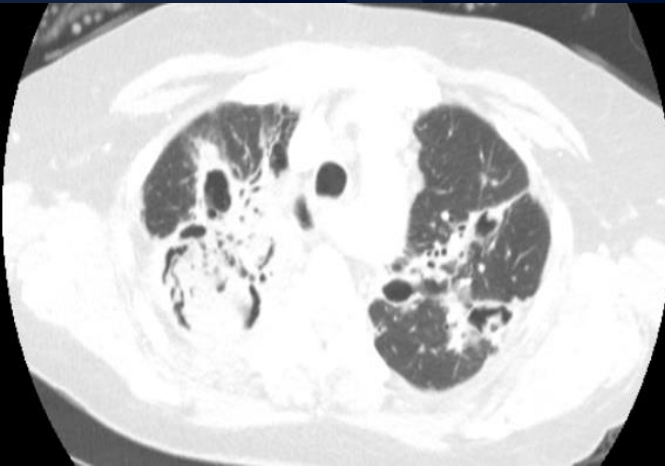
Bowen Anderson, MS3

Racquel Helsing, MD

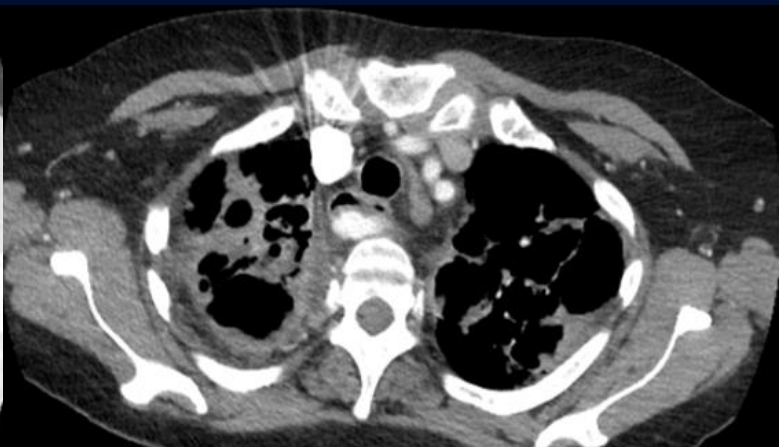
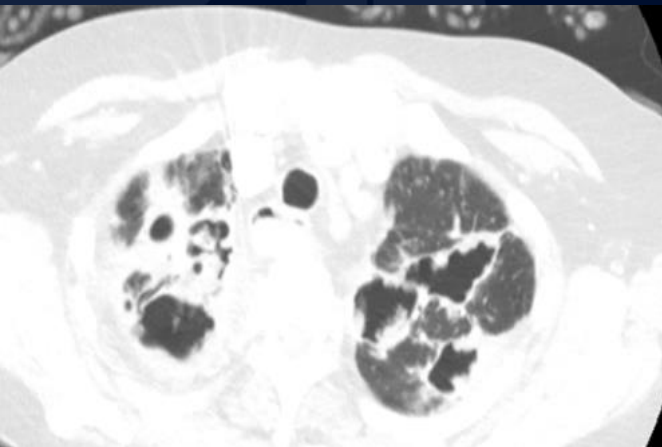
AP Radiograph



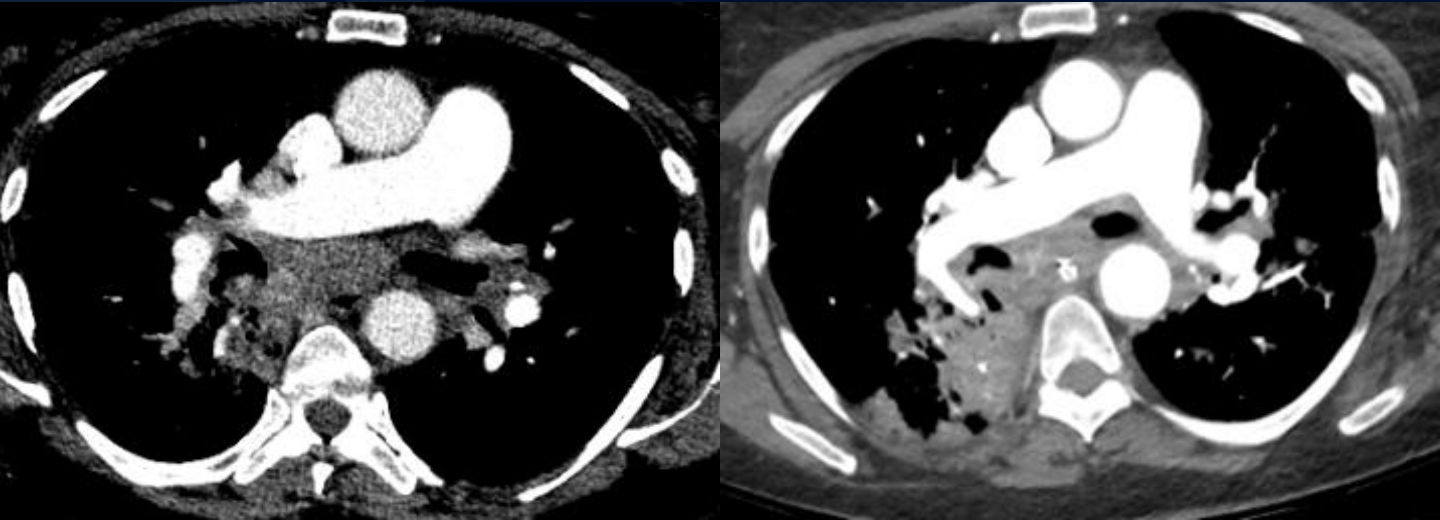
CT IV Contrast



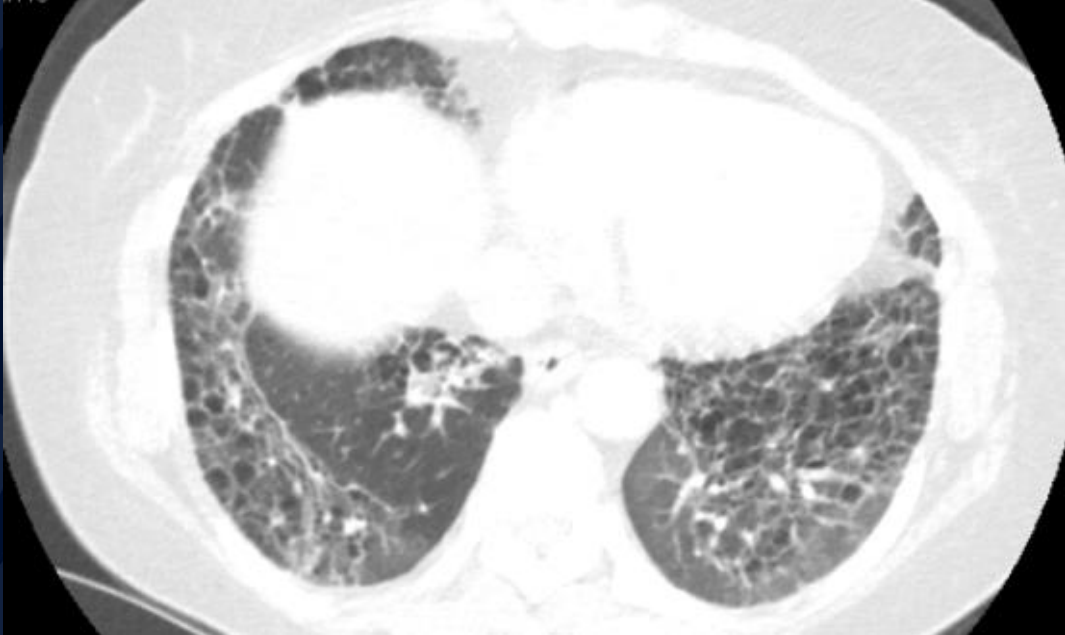
CT IV Contrast



CT IV Contrast



CT IV Contrast



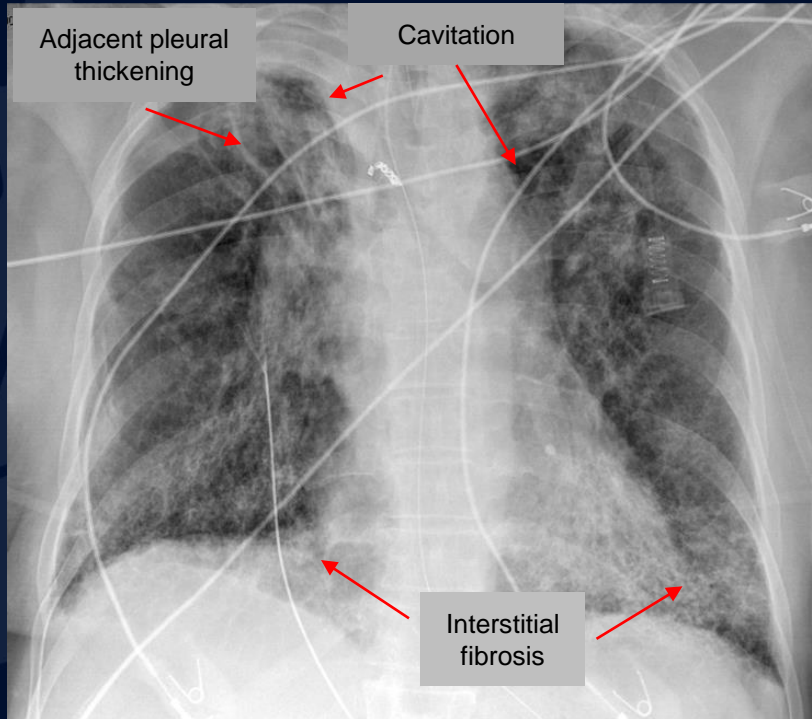


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Subacute Invasive Pulmonary Aspergillosis (SIPA)

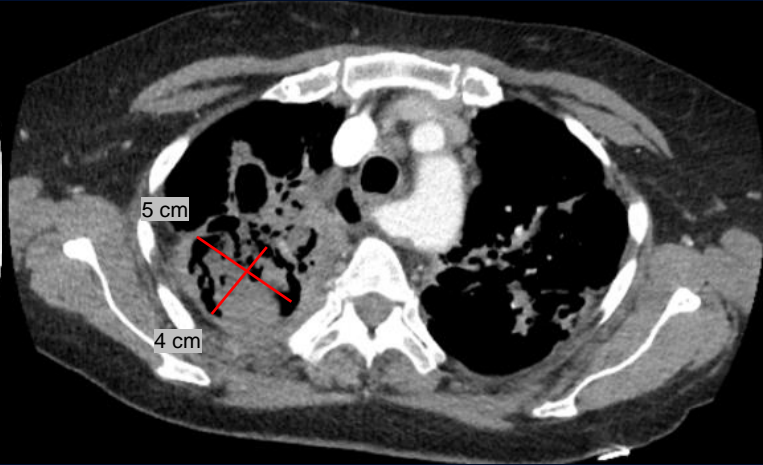
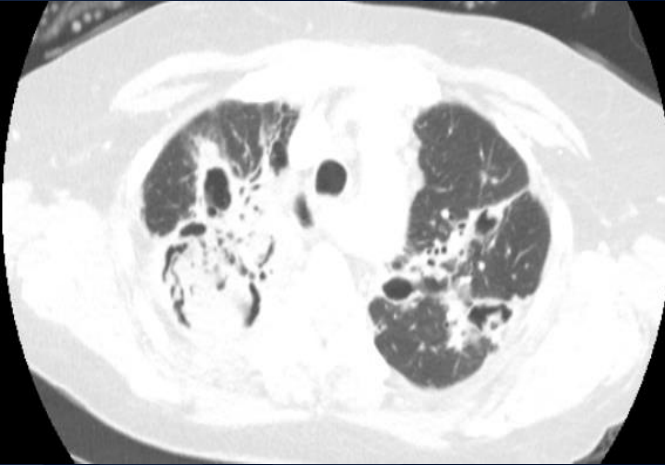
Formerly Chronic Necrotizing Pulmonary Aspergillosis

AP Radiograph



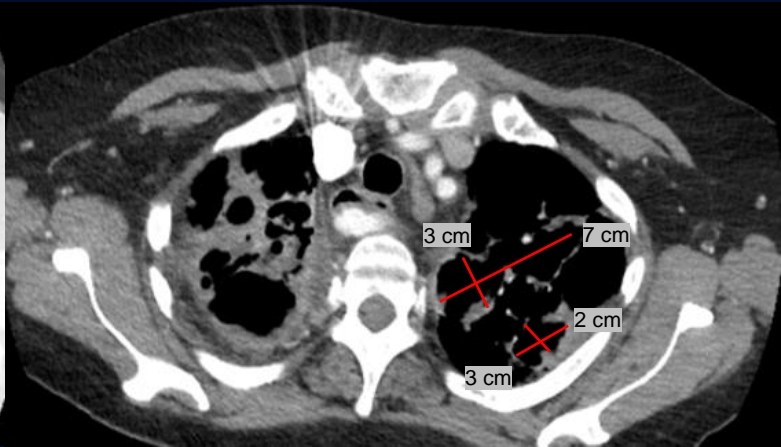
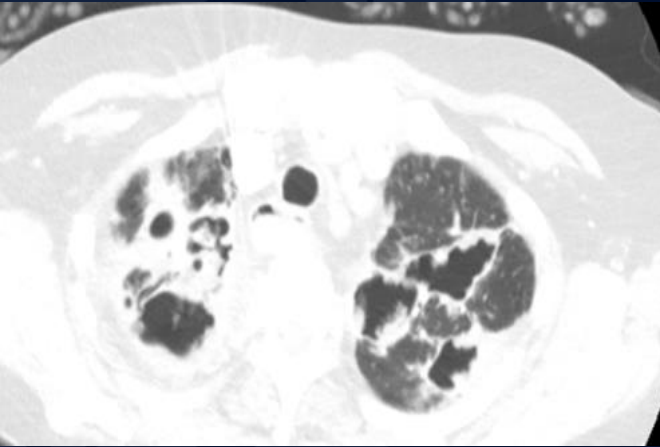
Numerous bilateral upper lobe cavitory nodules and masses → suspicious for fungal or mycobacterium infection

CT IV Contrast



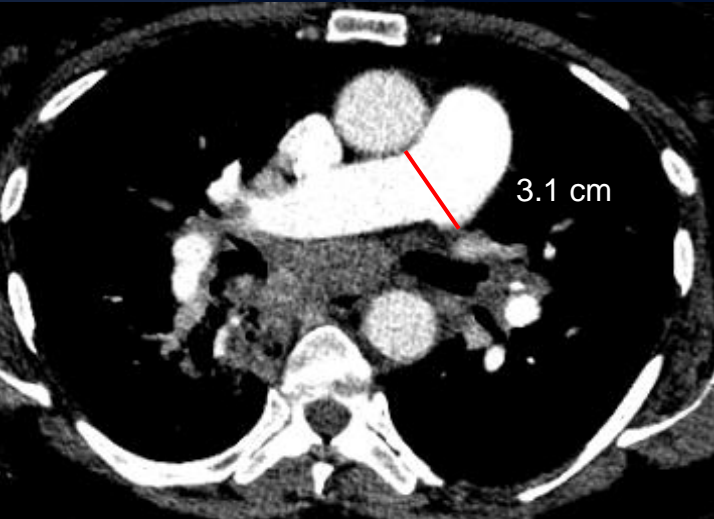
RUL cavities containing air and internal debris

CT IV Contrast



LUL cavities containing air and internal debris

CT IV Contrast



Main pulmonary artery diameter 3.1 cm (> 2.9 cm general predictive cut off for pulmonary hypertension); likely due to chronic lung disease



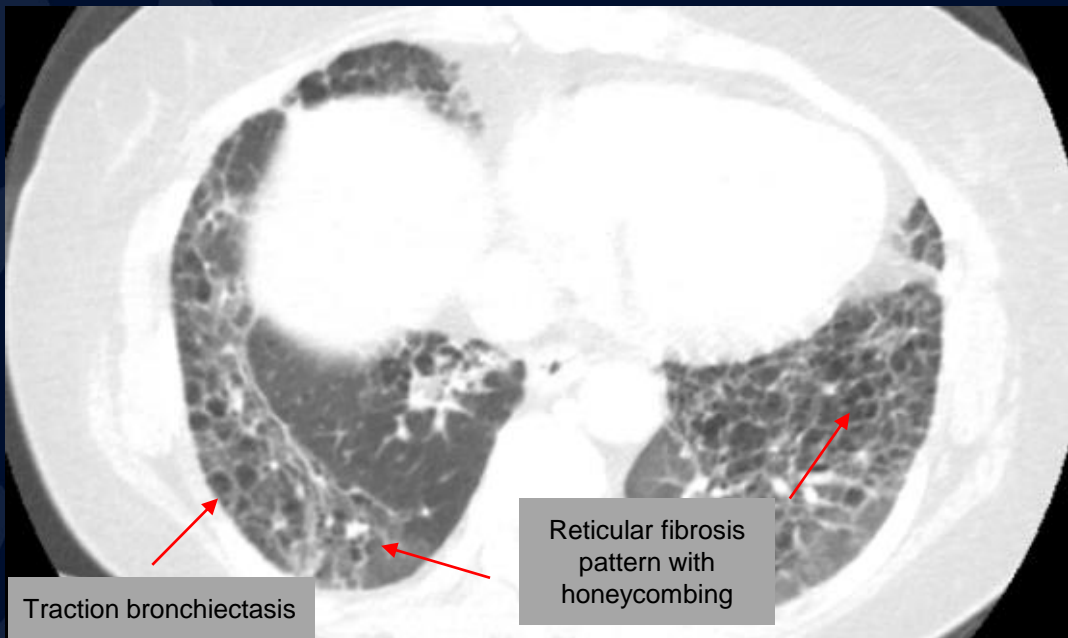
No filling defects are present within the pulmonary arteries → no pulmonary embolism present

CTA



No filling defects within the pulmonary arteries → no pulmonary embolism present

CT IV Contrast



Fibrotic changes throughout the lungs with honeycombing and traction bronchiectasis at the lung bases

Subacute Invasive Pulmonary Aspergillosis (SIPA)

Pathophysiology: invasive Pulmonary Aspergillosis is a rare pulmonary infection ranging from chronic (months-years) to subacute (weeks-months)

- Different from Aspergillomas, as the fungus is causing cavitation to occur rather than colonizing pre-existing cavities

Risk Factors: typically occurs in immunosuppressed patients (i.e., 80% cases with pre-existing pulmonary conditions such as Sarcoidosis, COPD, pulmonary fibrosis, and asthma; chronic steroid use; diabetes, etc.)

Clinical Presentation: several months (subacute) to years (chronic) progressive respiratory (cough, dyspnea, sputum production, hemoptysis) and constitutional symptom (e.g., fever, fatigue, weight loss, loss appetite)

Imaging Findings

- Usually involves upper lung zones
- Begins as an opacity
- Over weeks to months becomes centrally necrotic and separates from surrounding lung parenchyma creating an “air crescent sign”
- Cavitation
 - +/- central mycetoma
 - Thick-walled
 - Often multiple
- May have adjacent pleural thickening, local pulmonary fibrosis, surrounding ground-glass infiltrates, and invasion into pulmonary vasculature

References

- Jones, J., & Gaillard, F. (2010). Subacute invasive pulmonary aspergillosis. *Radiopaedia.Org*. <https://doi.org/10.53347/RID-8696>
- Clinical manifestations and diagnosis of chronic pulmonary aspergillosis - UpToDate. (n.d.). Retrieved April 8, 2023, from https://www.uptodate-com.online.uhc.edu/contents/clinical-manifestations-and-diagnosis-of-chronic-pulmonary-aspergillosis?search=aspergillus&source=search_result&selectedTitle=3~150&usage_type=default&display_rank=3
- Epidemiology and clinical manifestations of invasive aspergillosis - UpToDate. (n.d.). Retrieved April 8, 2023, from https://www.uptodate-com.online.uhc.edu/contents/epidemiology-and-clinical-manifestations-of-invasive-aspergillosis?search=aspergillus&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H429431
- Wilopo, B. A. P., Richardson, M. D., & Denning, D. W. (2019). Diagnostic Aspects of Chronic Pulmonary Aspergillosis: Present and New Directions. *Current Fungal Infection Reports*, *13*(4), 292–300. <https://doi.org/10.1007/S12281-019-00361-7>
- Weerakkody, Y. (2013). Pulmonary fibrosis. *Radiopaedia.Org*. <https://doi.org/10.53347/RID-22678>