Respiratory System
Pathology Lab 2

Dr. Ola Abu Al Karsaneh

Pulmonary Infections

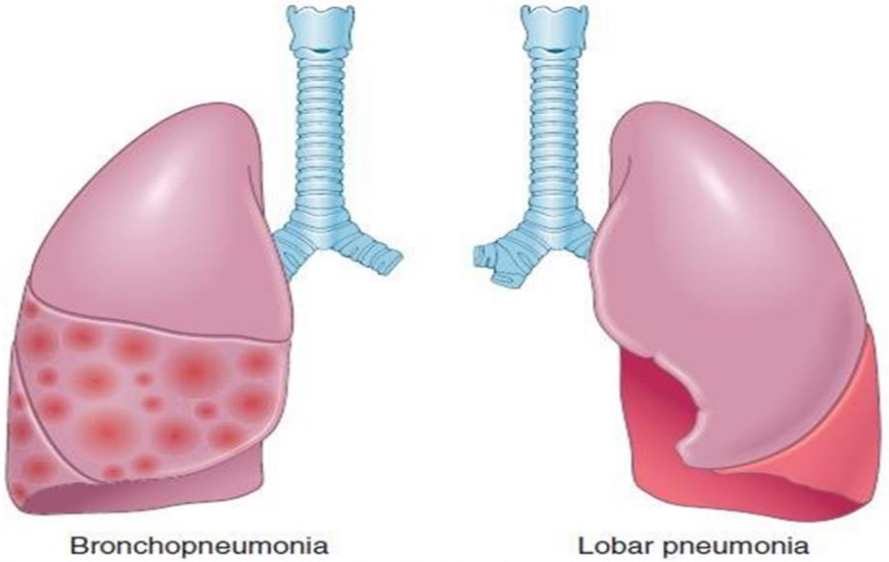
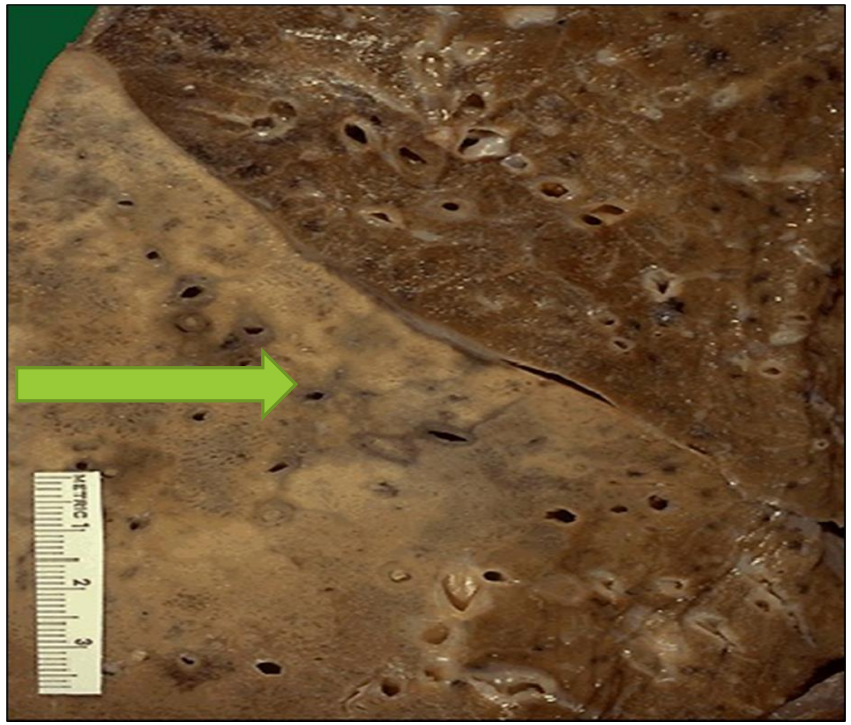
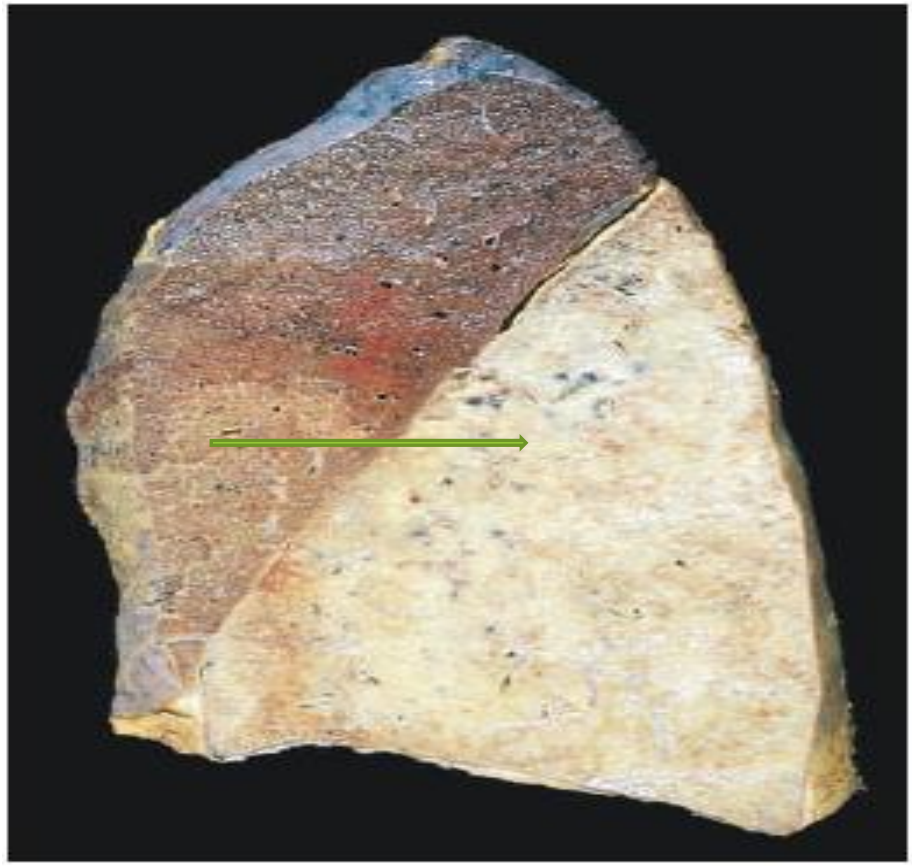


Figure 12–31 The anatomic distribution of bronchopneumonia and lobar pneumonia.

Lobar Pneumonia

- Consolidation of the entire lobe

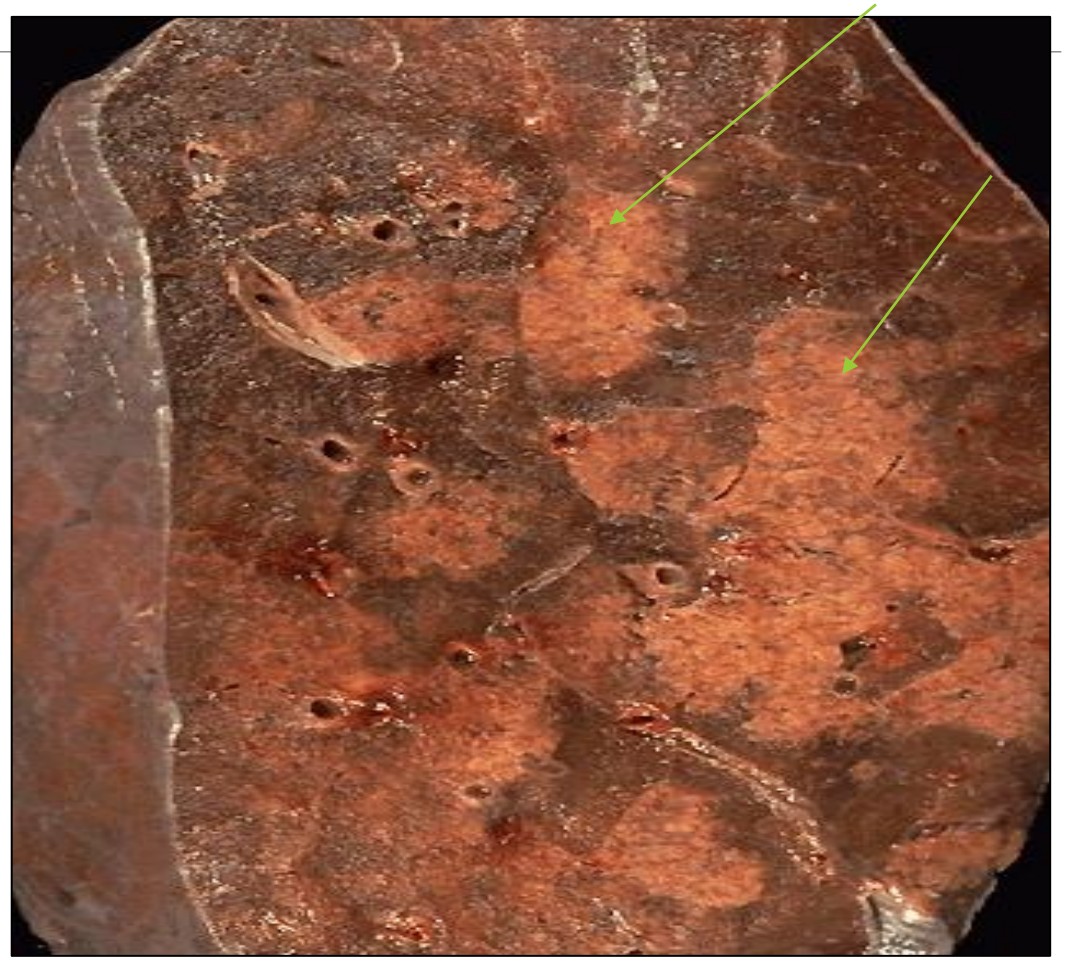




Bronchopneumonia

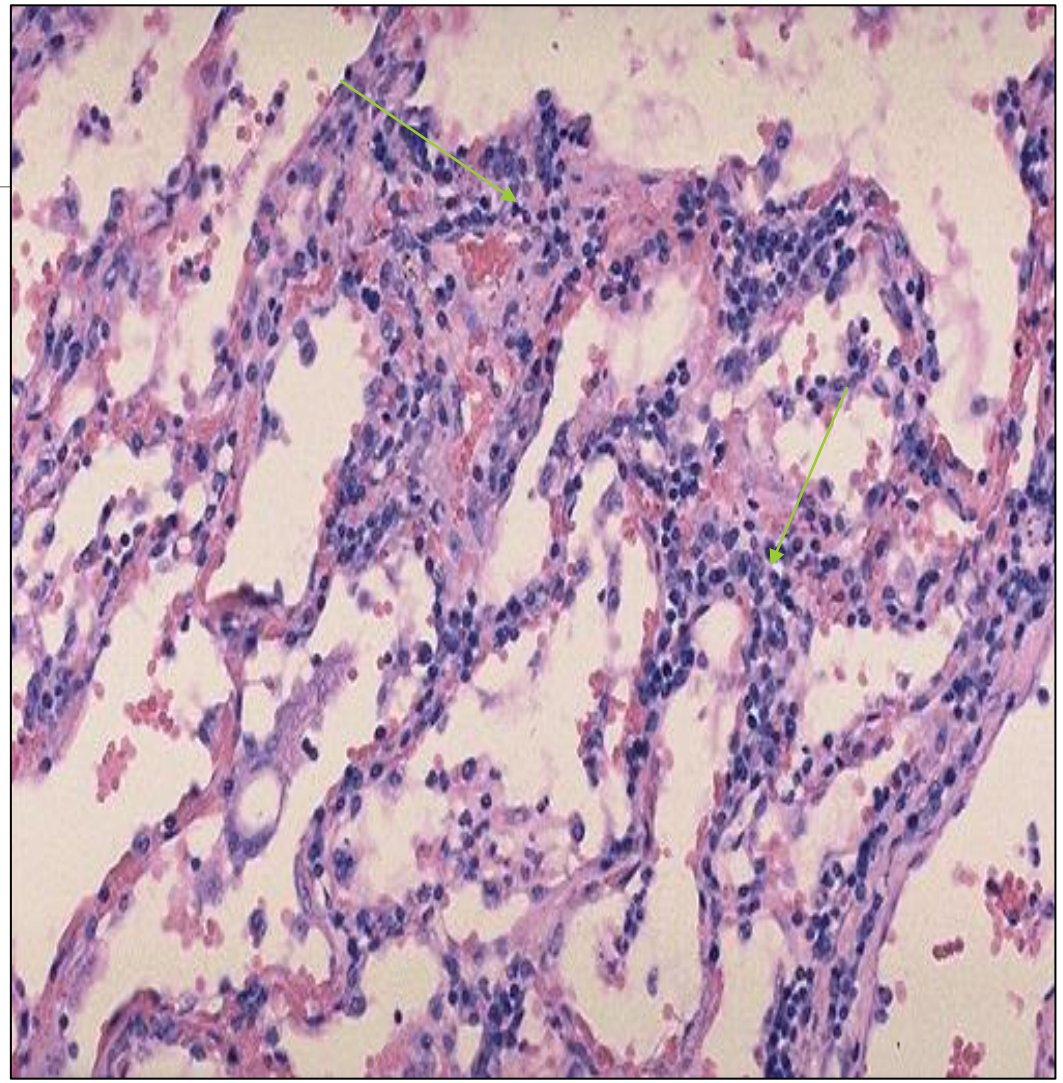
Patchy distribution of bronchopneumonia

Figure 15-33 Bronchopneumonia. Section of lung showing patches of consolidation *(arrows)*.



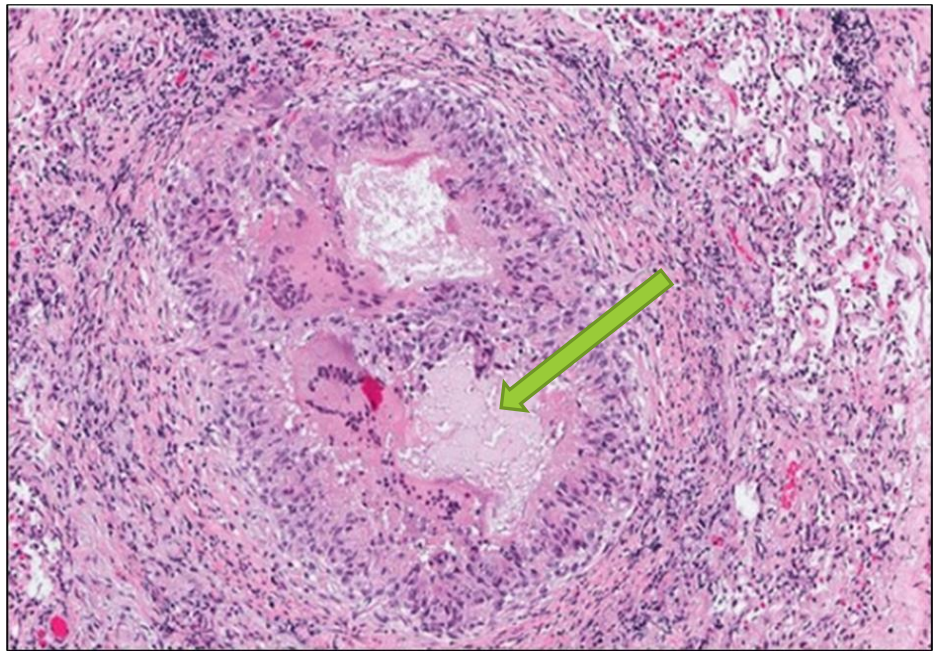
Atypical Pneumonia

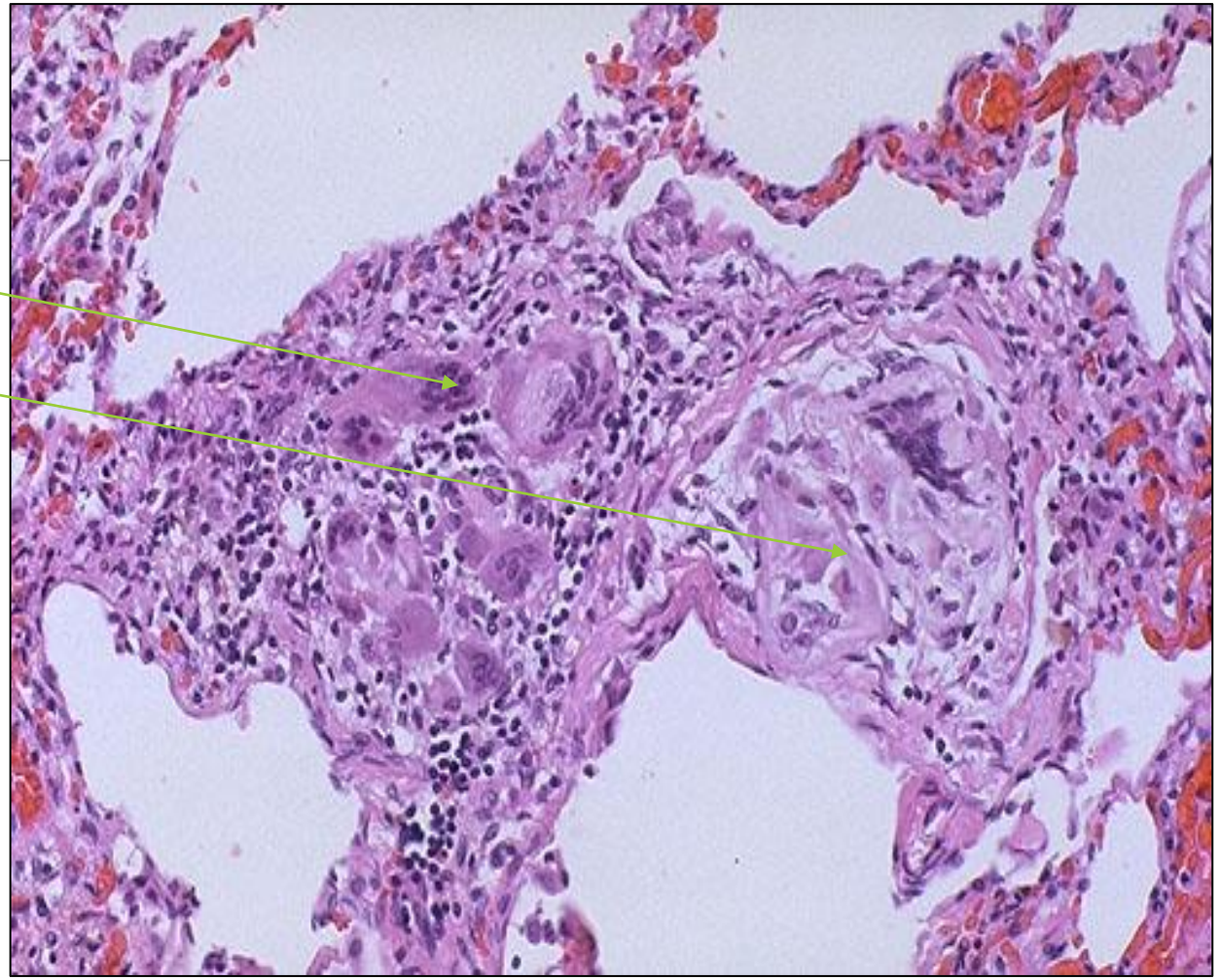
Here is the microscopic appearance of viral pneumonia with interstitial lymphocytic infiltrates. Note that there is no alveolar exudate.



Aspiration Pneumonia

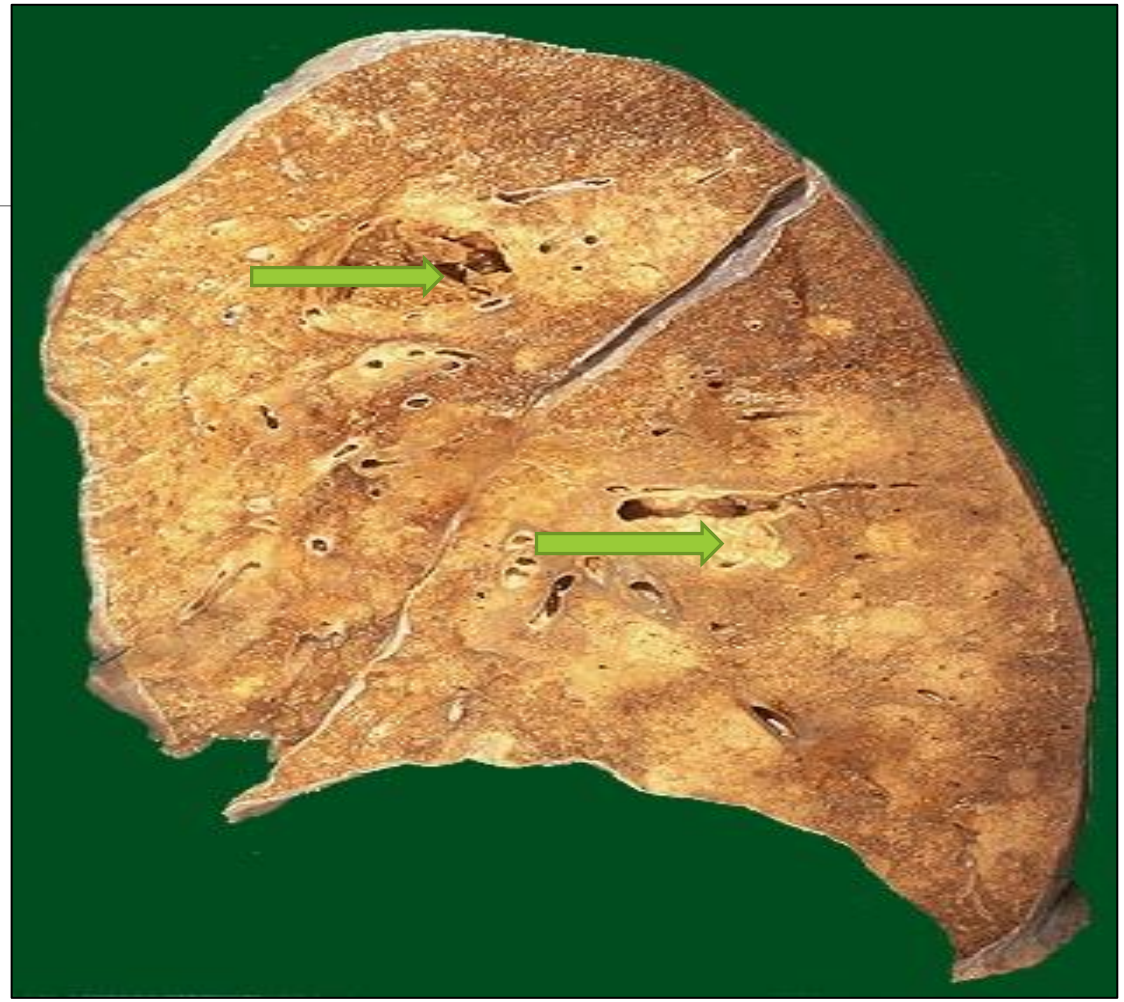
A localized foreign body giant cell response to the aspirated material





Abscesses

- Irregular-shaped cavities within lung parenchyma filled with necrotic tissue.



Ghon Complex With Primary Tuberculosis

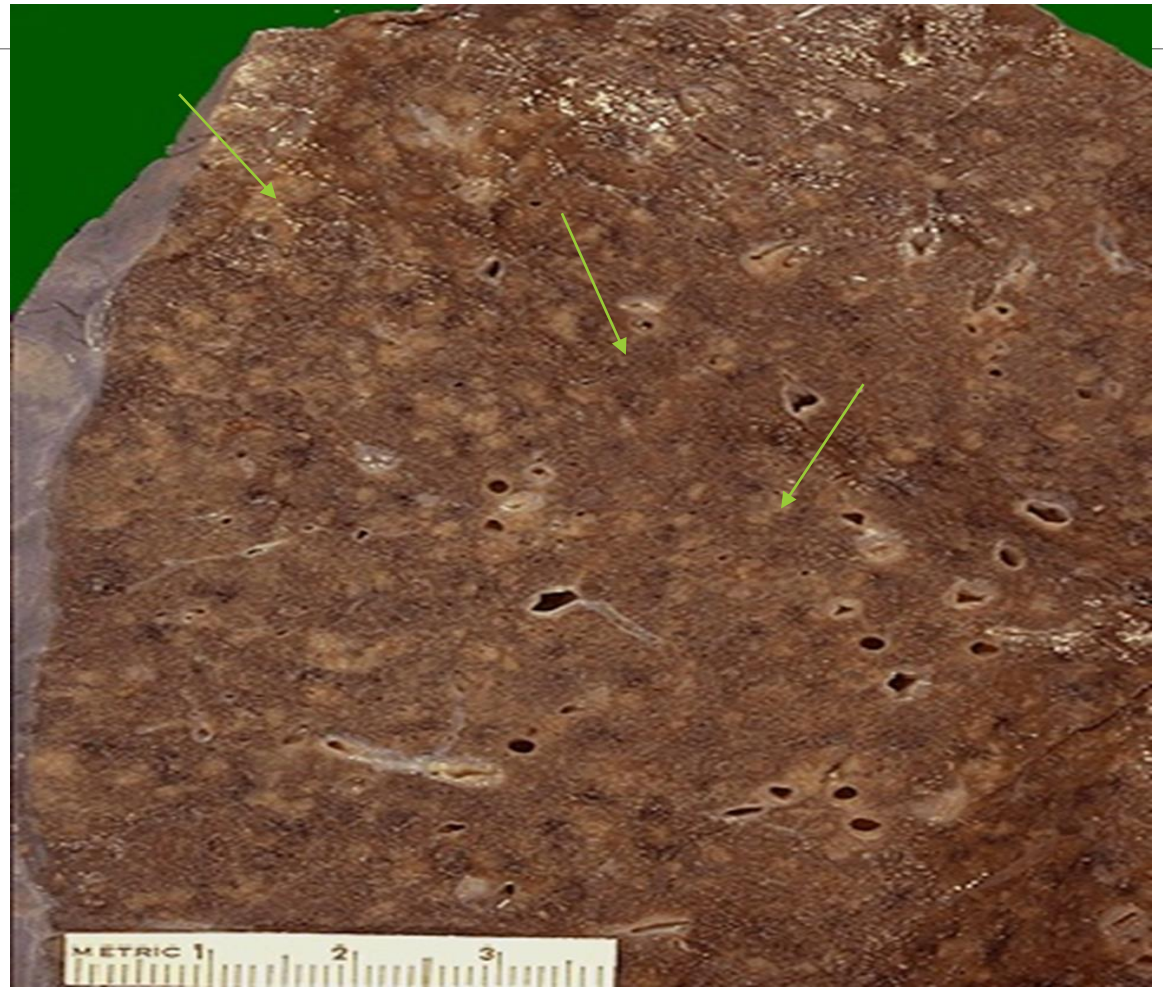
There is a small tan-yellow **subpleural granuloma** in the mid-lung field on the right. In the hilum is a small yellow tan **granuloma in a hilar lymph node** next to a bronchus. This is the "Ghon complex" that is the characteristic gross appearance with **primary tuberculosis.**

Secondary pulmonary tuberculosis.

The upper parts of both lungs are riddled with gray-white areas of caseation and multiple areas of softening and cavitation.

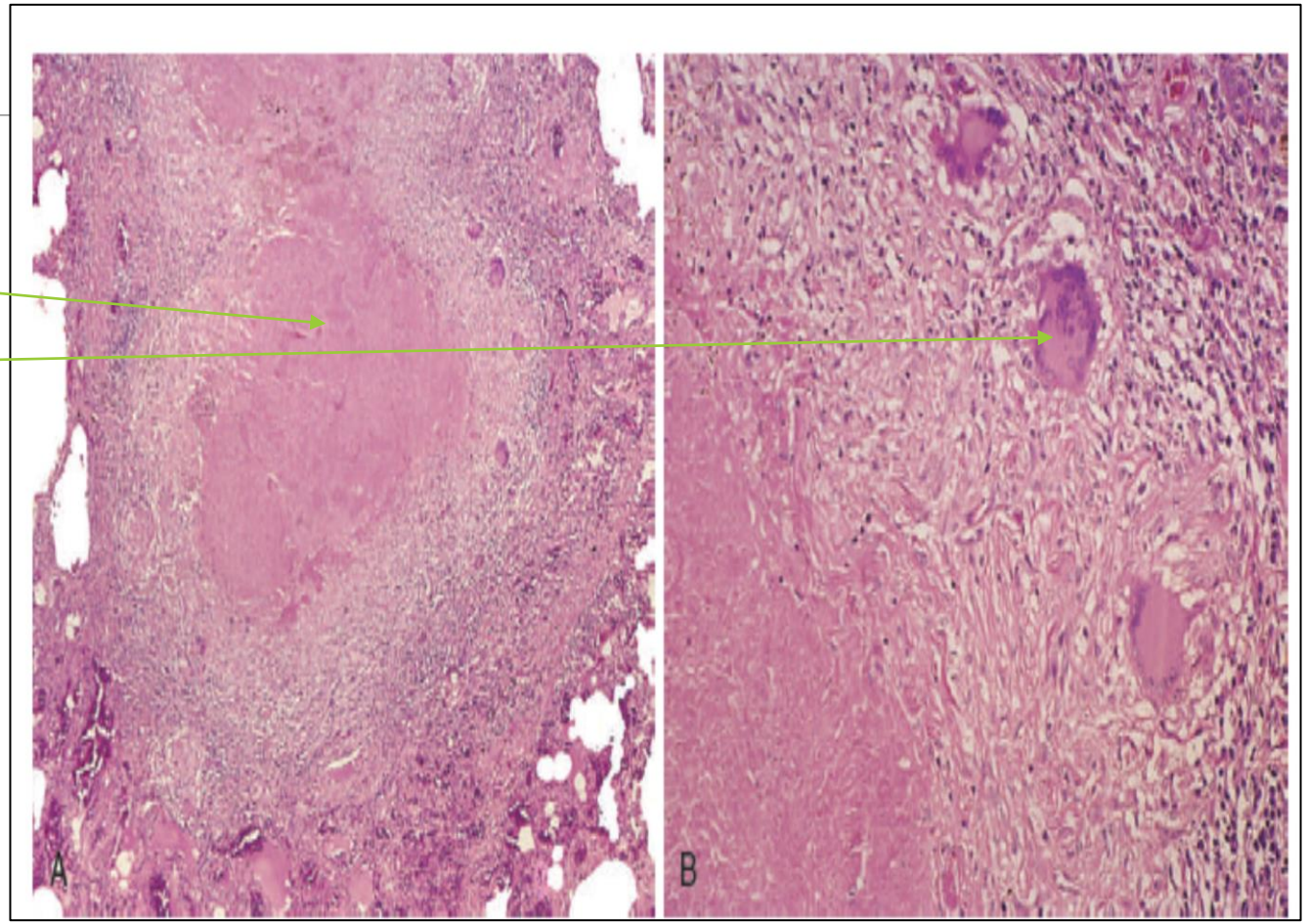
Miliary pulmonary TB :

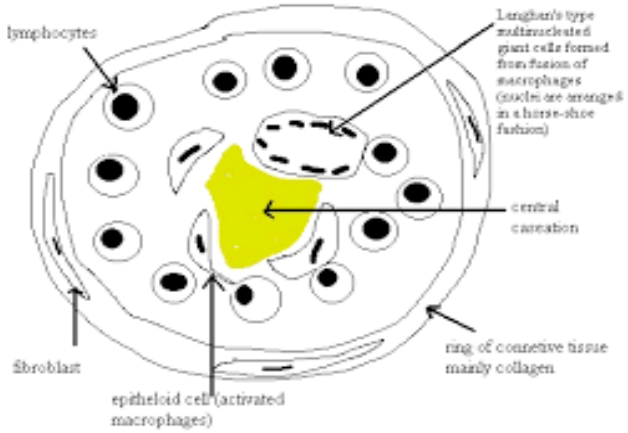
- Individual lesions are small foci of yellow-white consolidation scattered through the lung parenchyma.



Granuloma, TB

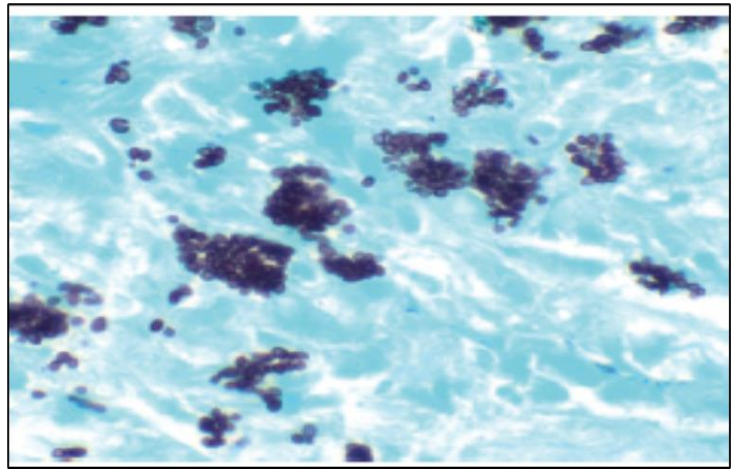
A characteristic tubercle at low magnification: (A) and at higher power (B) shows central granular caseation surrounded by epithelioid and multinucleate giant cells.

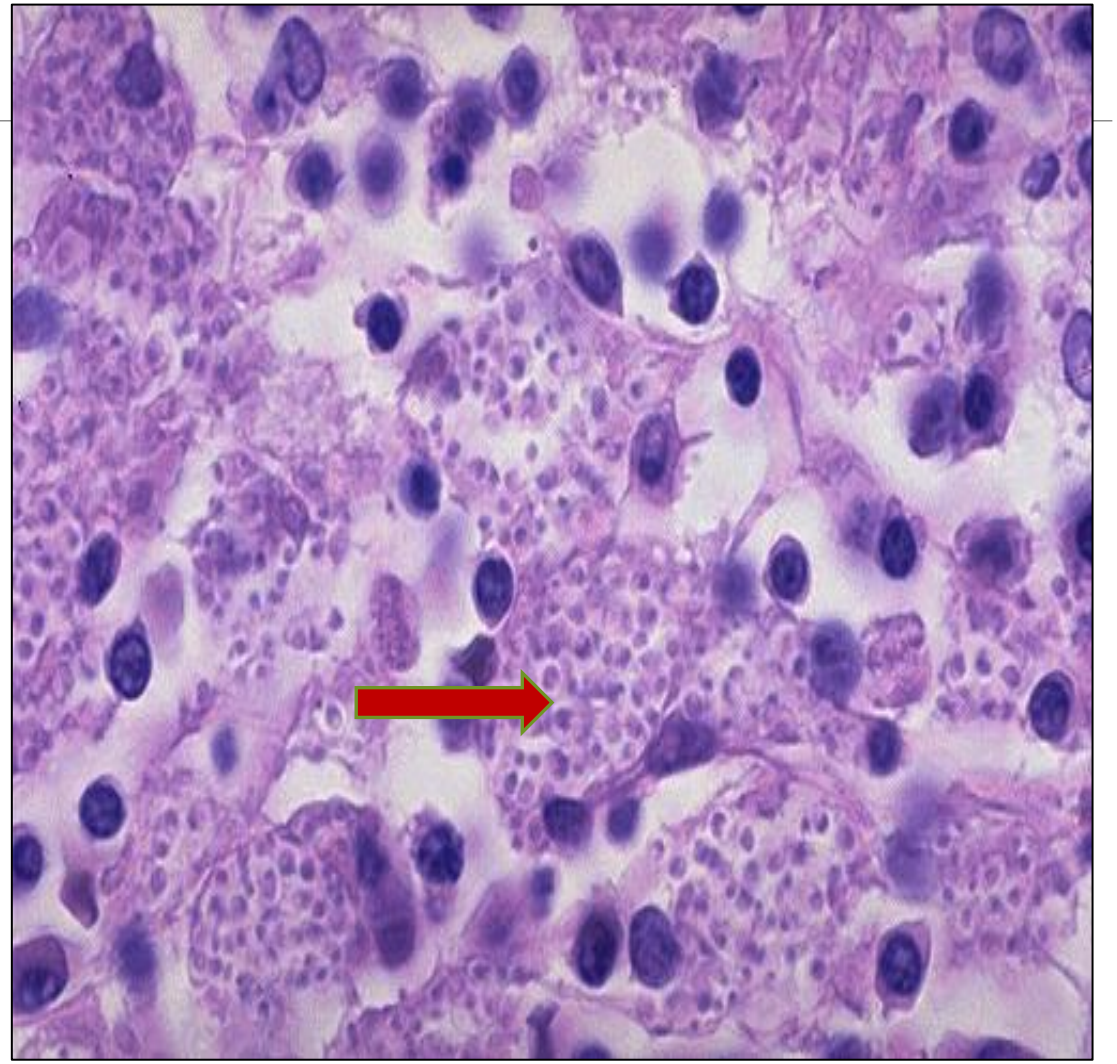




Histoplasma Capsulatum

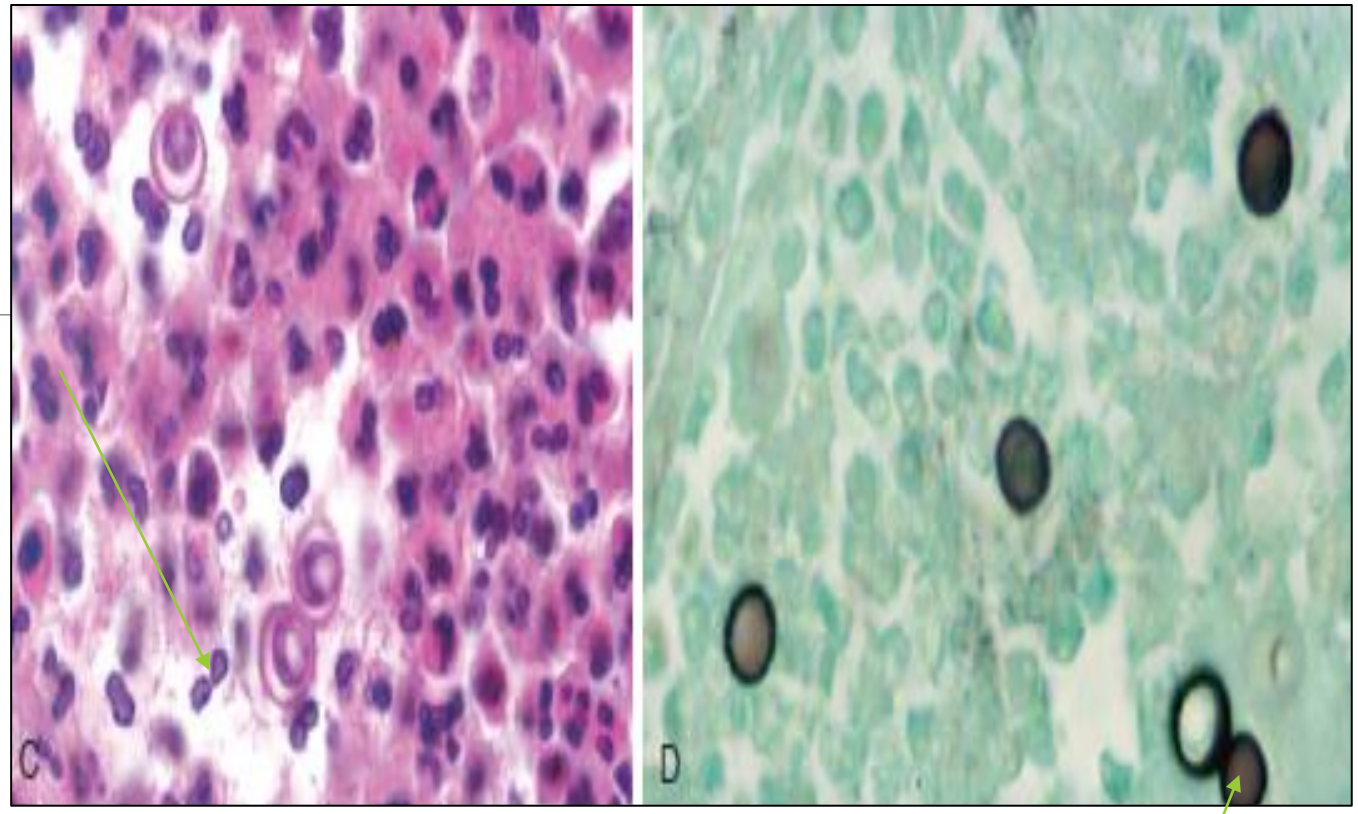
Each macrophage is filled with numerous **small organisms**. The organisms have a clear zone around a central blue nucleus, which gives the cell membrane the appearance of a capsule.

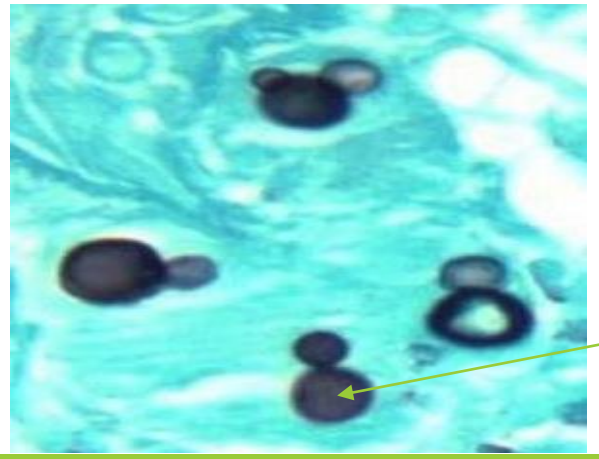




Blastomycosis

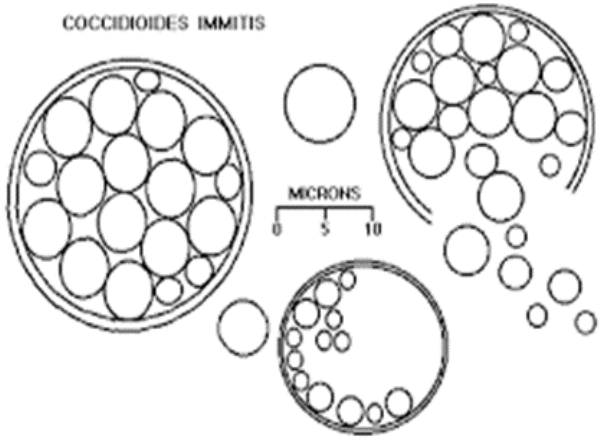
(C)Blastomycosis, with rounded budding yeasts, thick wall, and nuclei (D) Silver stain highlights the broad-based budding.

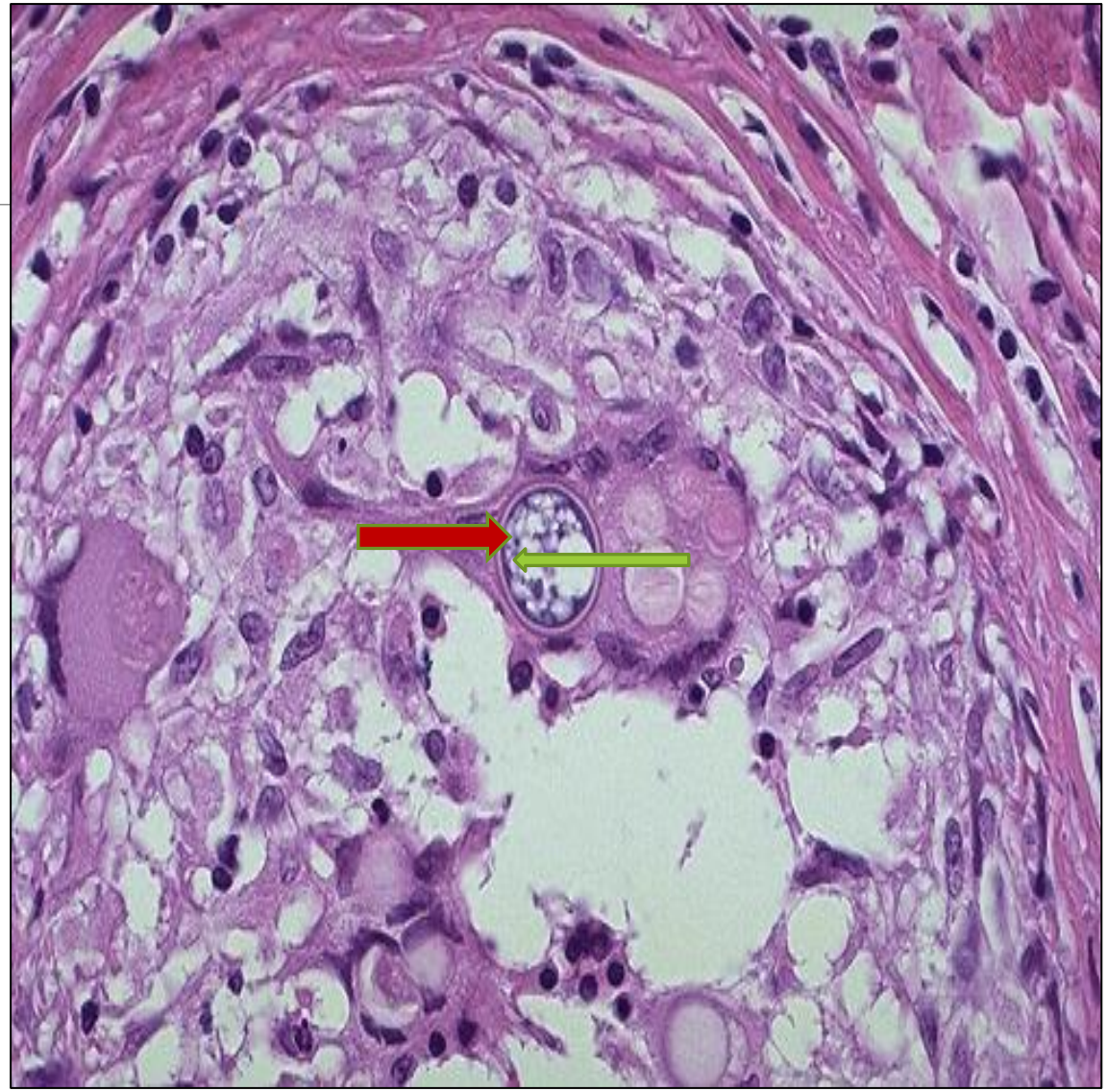




Granuloma with coccidioidomycosis immitis

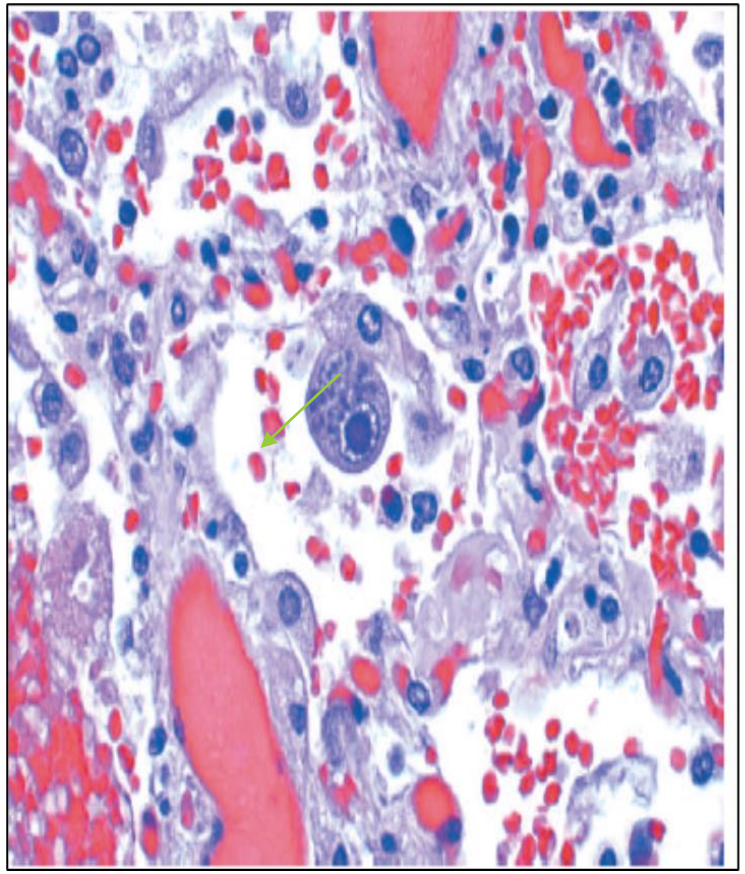
At higher magnification, the **thick wall** of the *C. immitis* spherule is seen in a giant cell in the center of this image. The spherule contains **endospores**

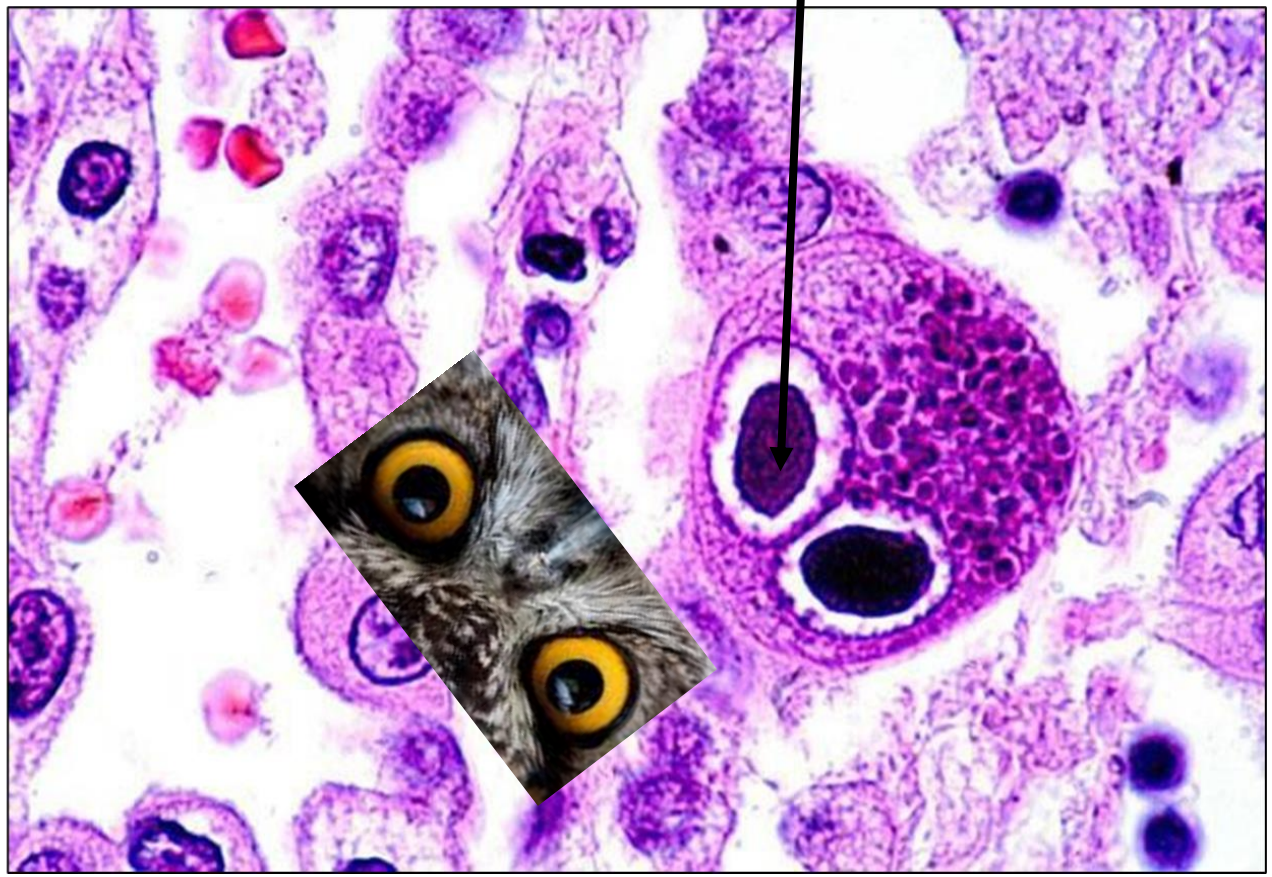




CMV

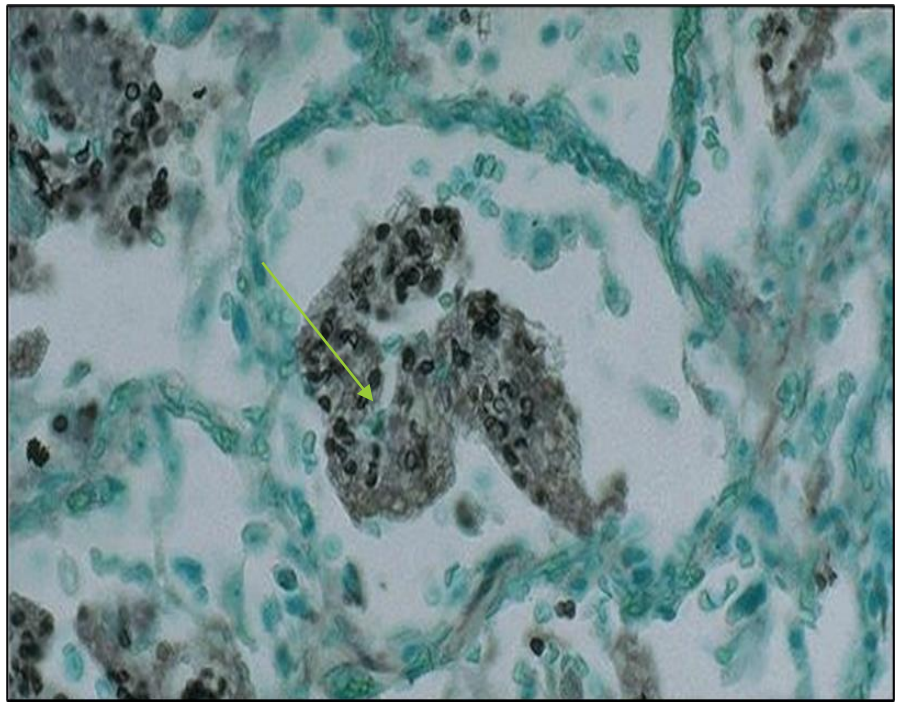
Very large cells that have large basophilic intranuclear inclusions with a small clear halo. Basophilic stippling can sometimes be seen in the cytoplasm.

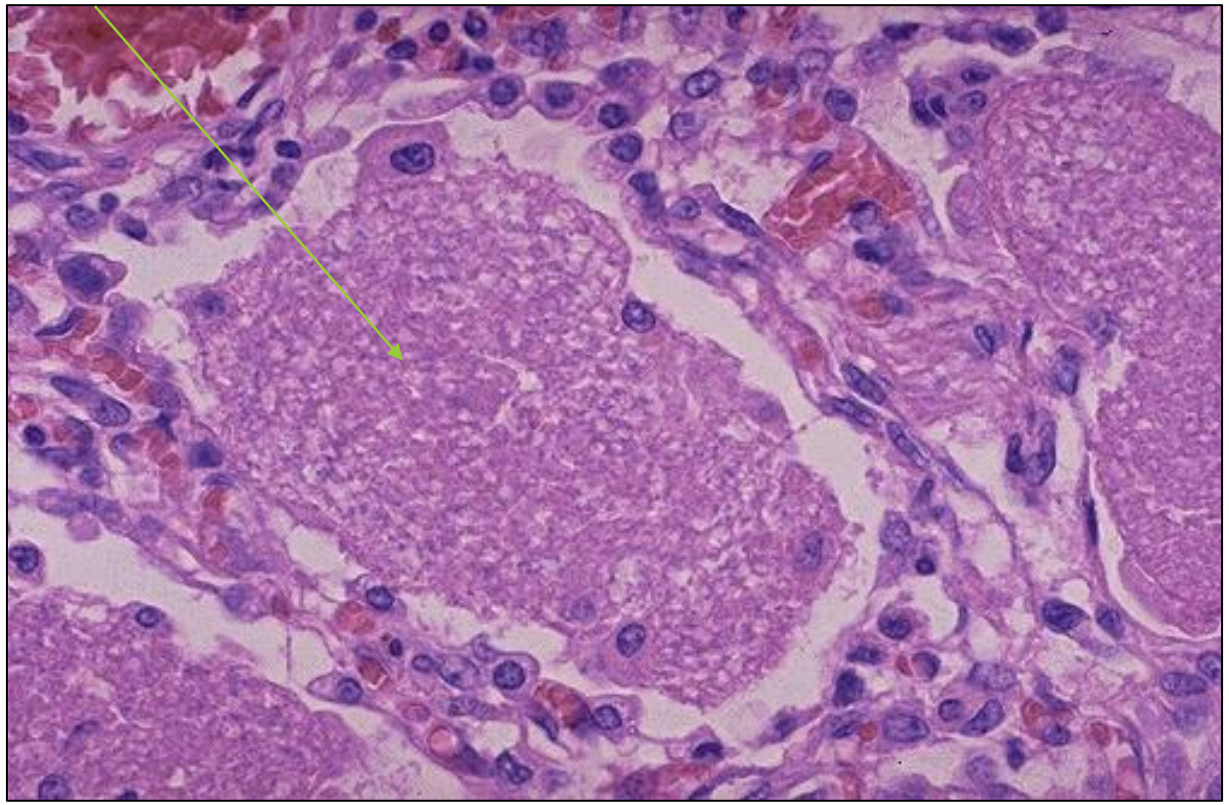




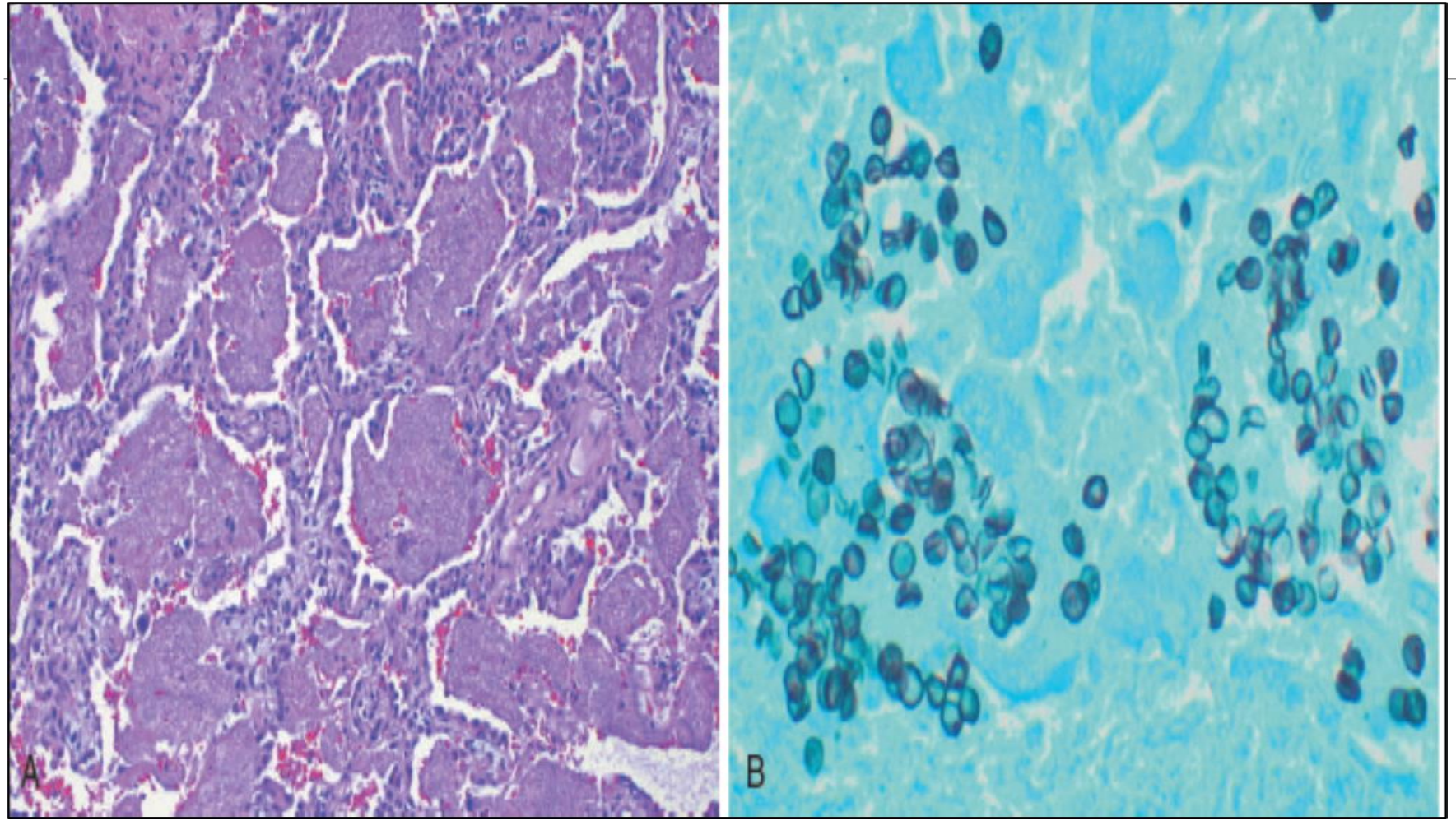
PJP (Pneumocystis jeroveci pneumonia)

At higher magnification, the granular pink exudate of Pneumocystis jeroveci pneumonia is seen.



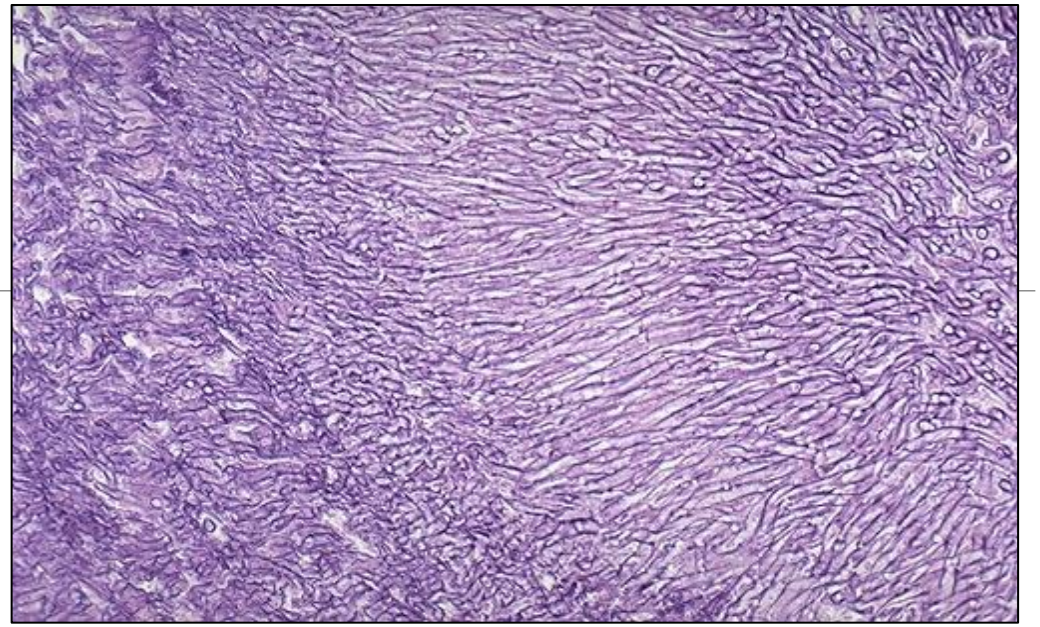


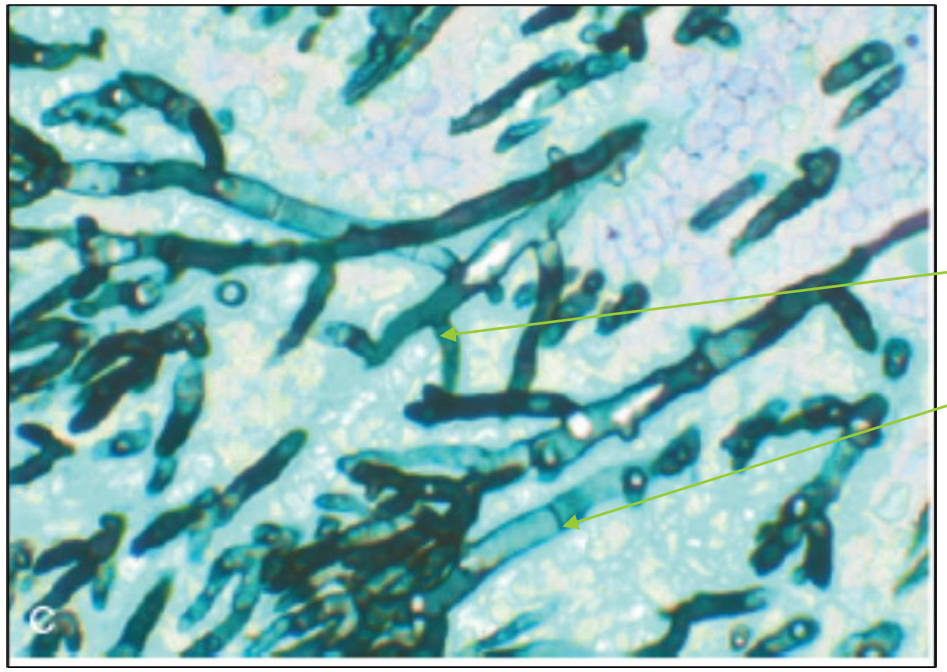
PJP



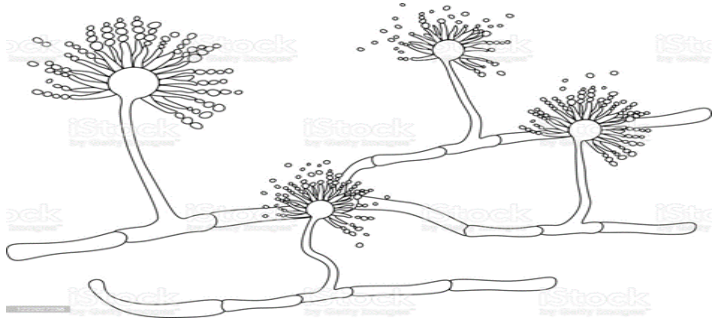
Aspergillus

Branching, septate hyphae are close-packed here and radiating outward in this aspergilloma.



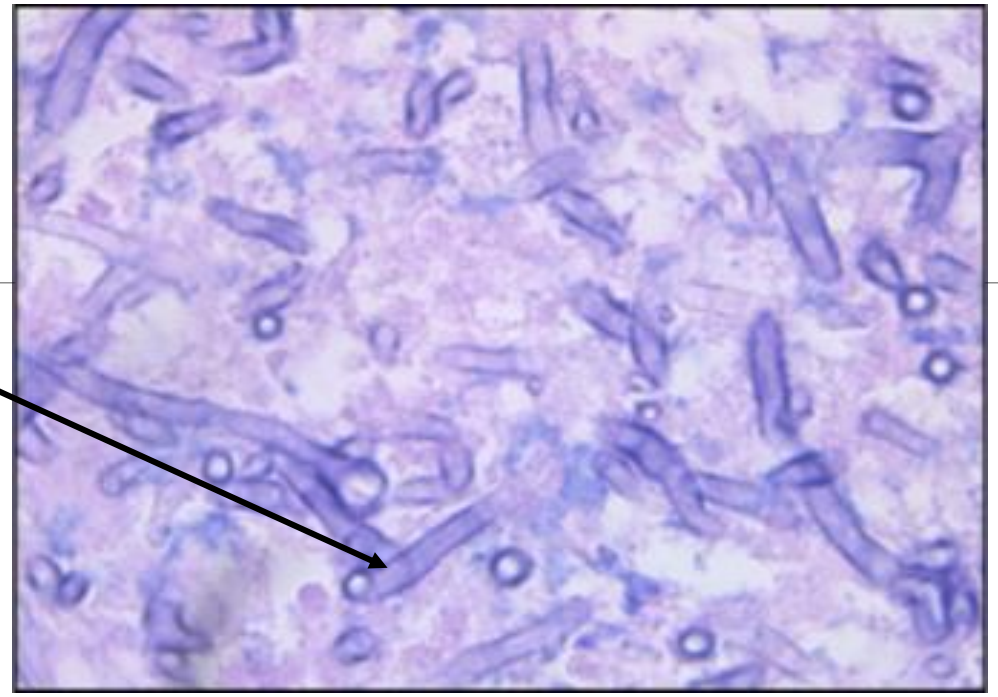


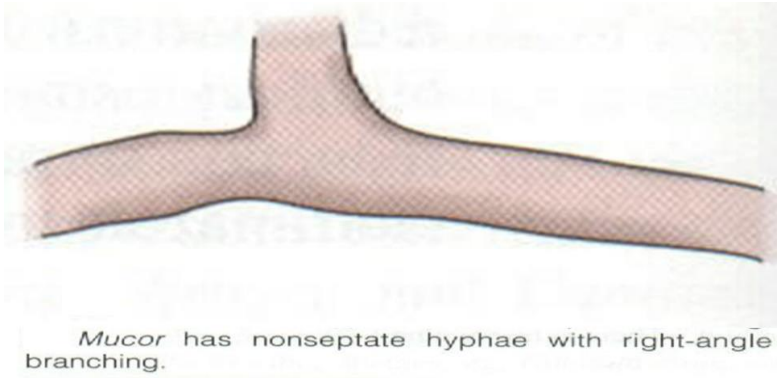
(GMS) stain shows septate hyphae with acute-angle branching, consistent with Aspergillus



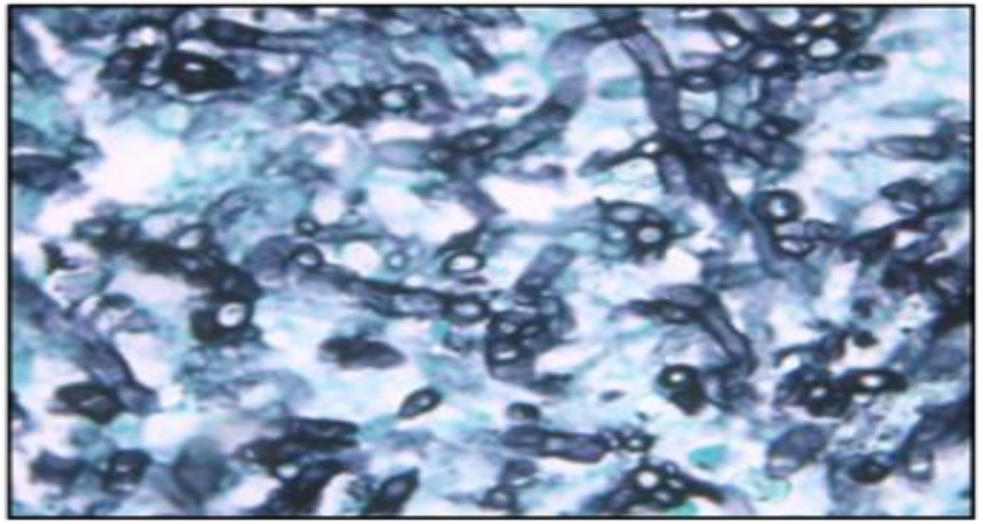
Mucormycosis

Broad non-septate hyphae with right-angled branching characteristic for *Mucor* in H&E and GMS stains.

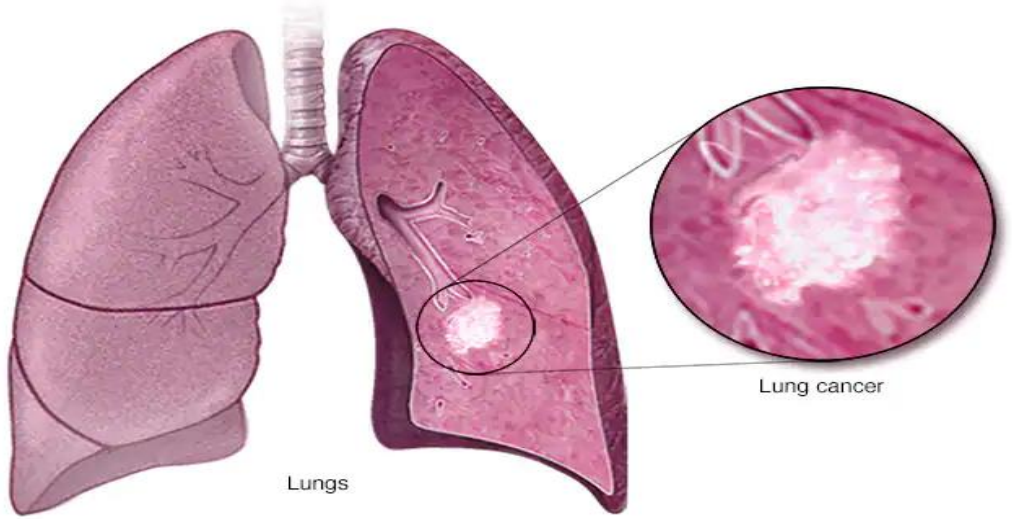




Mucor has nonseptate hyphae with right-angle branching.



Lung Tumors

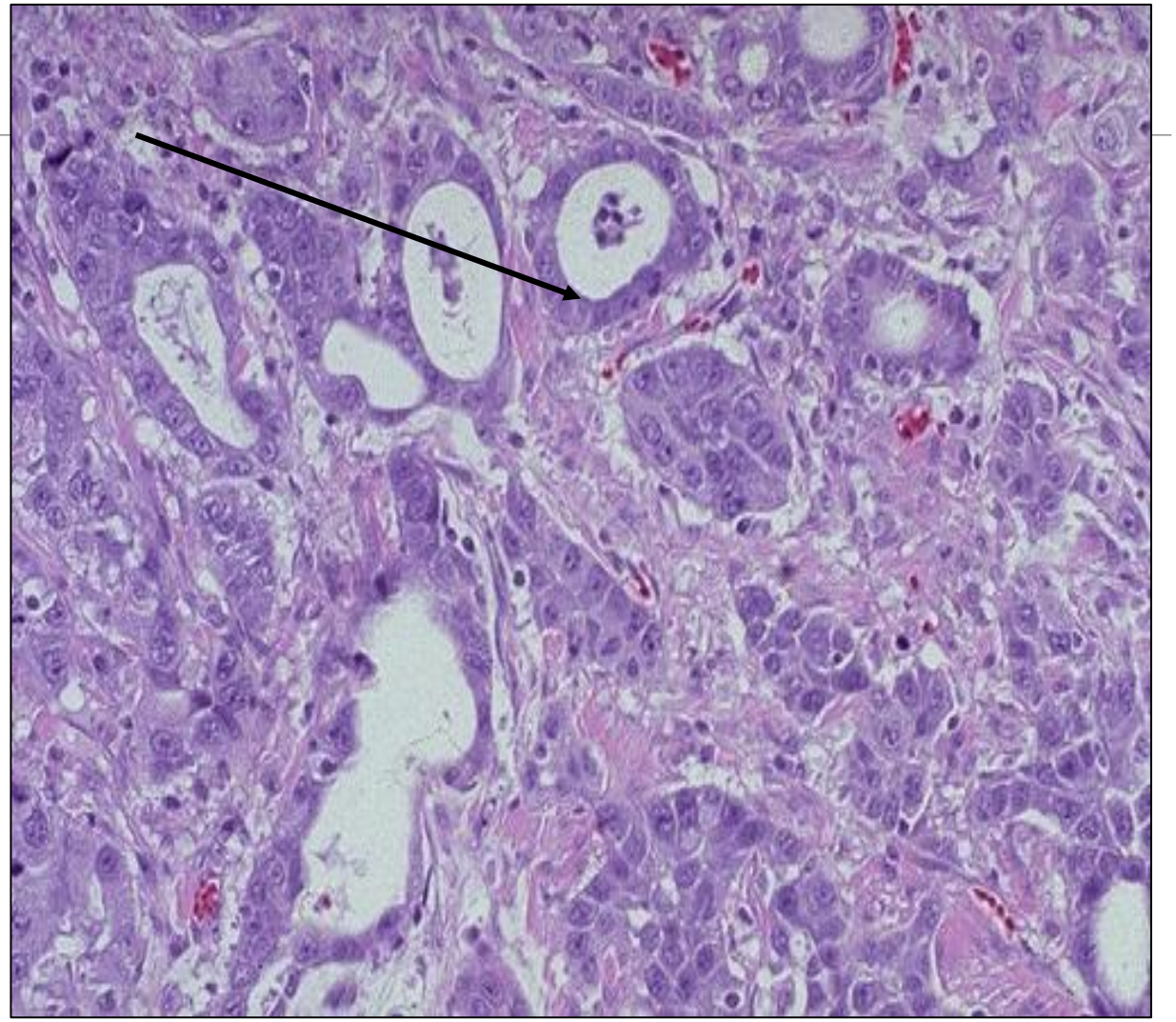


Adenocarcinoma

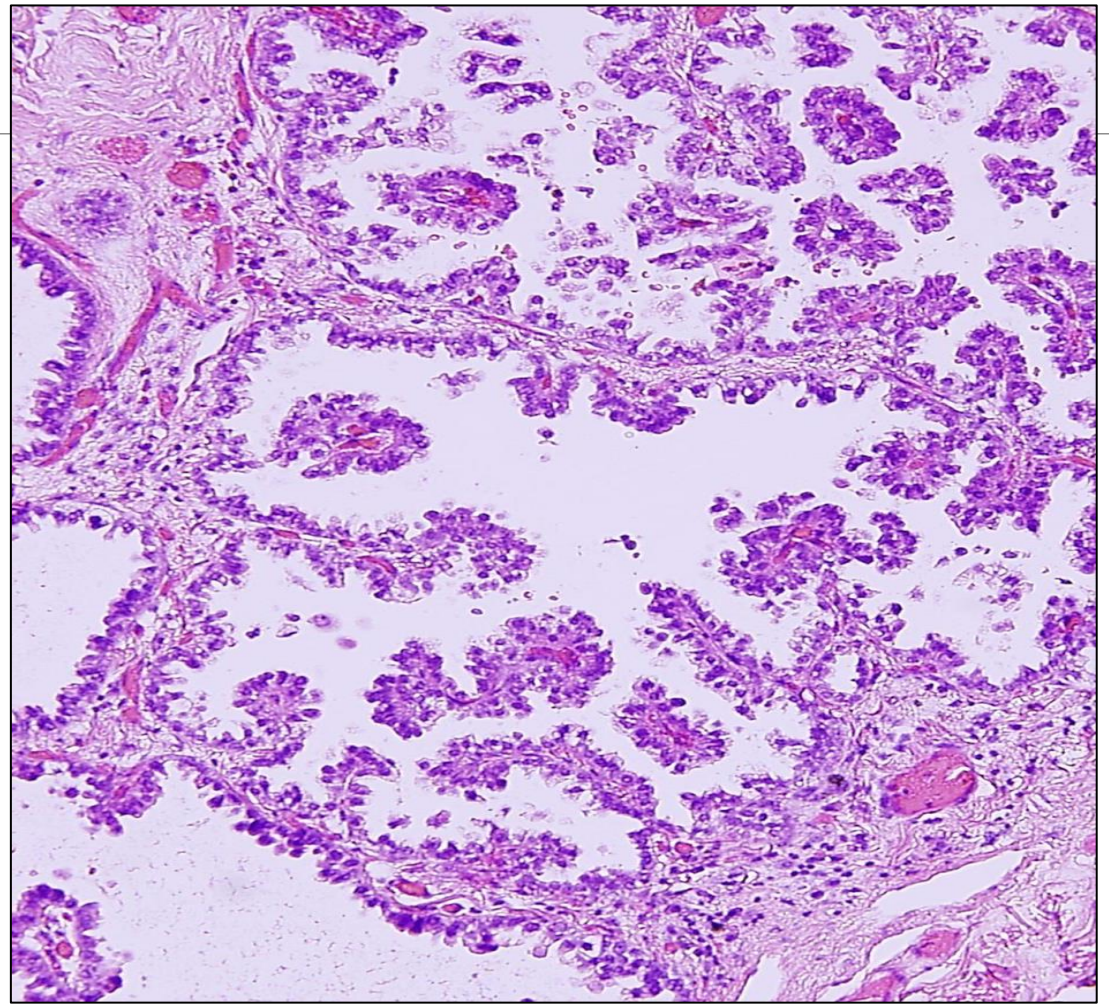
This mass is a peripheral adenocarcinoma of the lung.

Adenocarcinoma

The glandular structures formed by this neoplasm are consistent with a moderately differentiated adenocarcinoma.

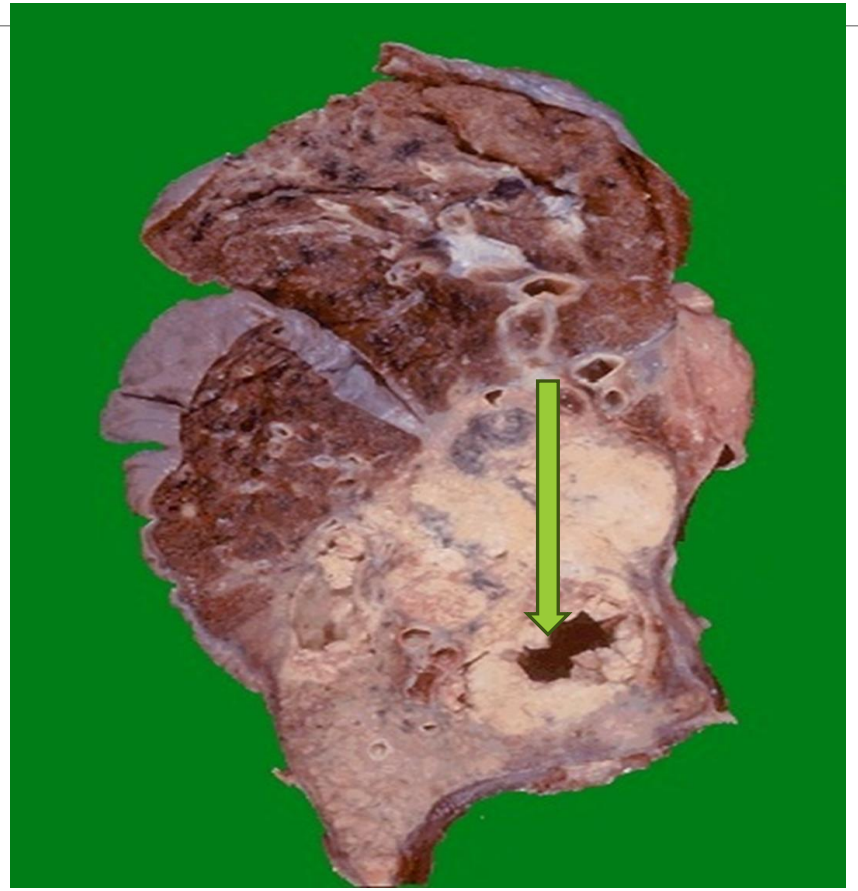


Papillary Adenocarcinoma



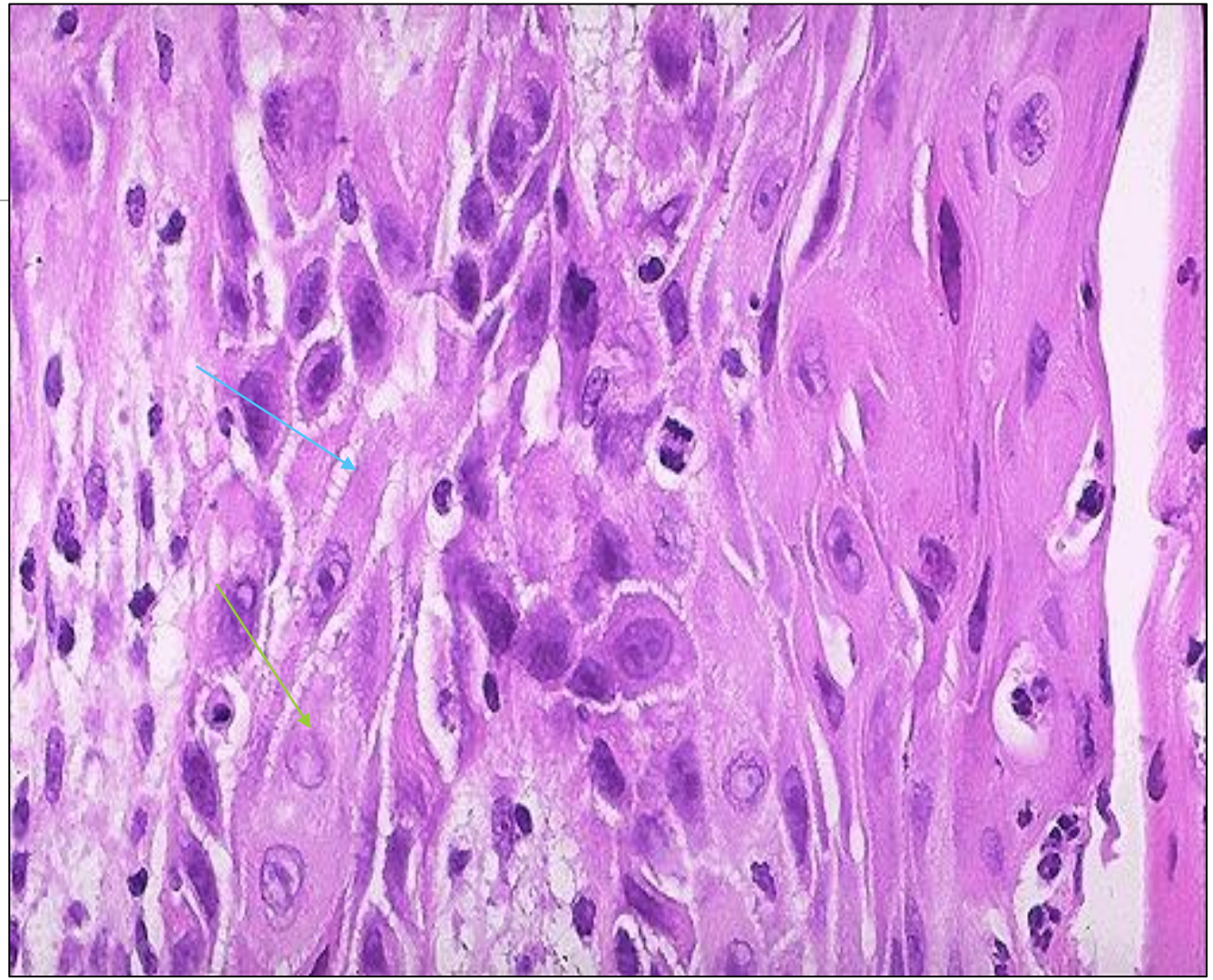
SCC (squamous cell carcinoma)

A larger squamous cell carcinoma in which a portion of the tumor demonstrates central cavitation



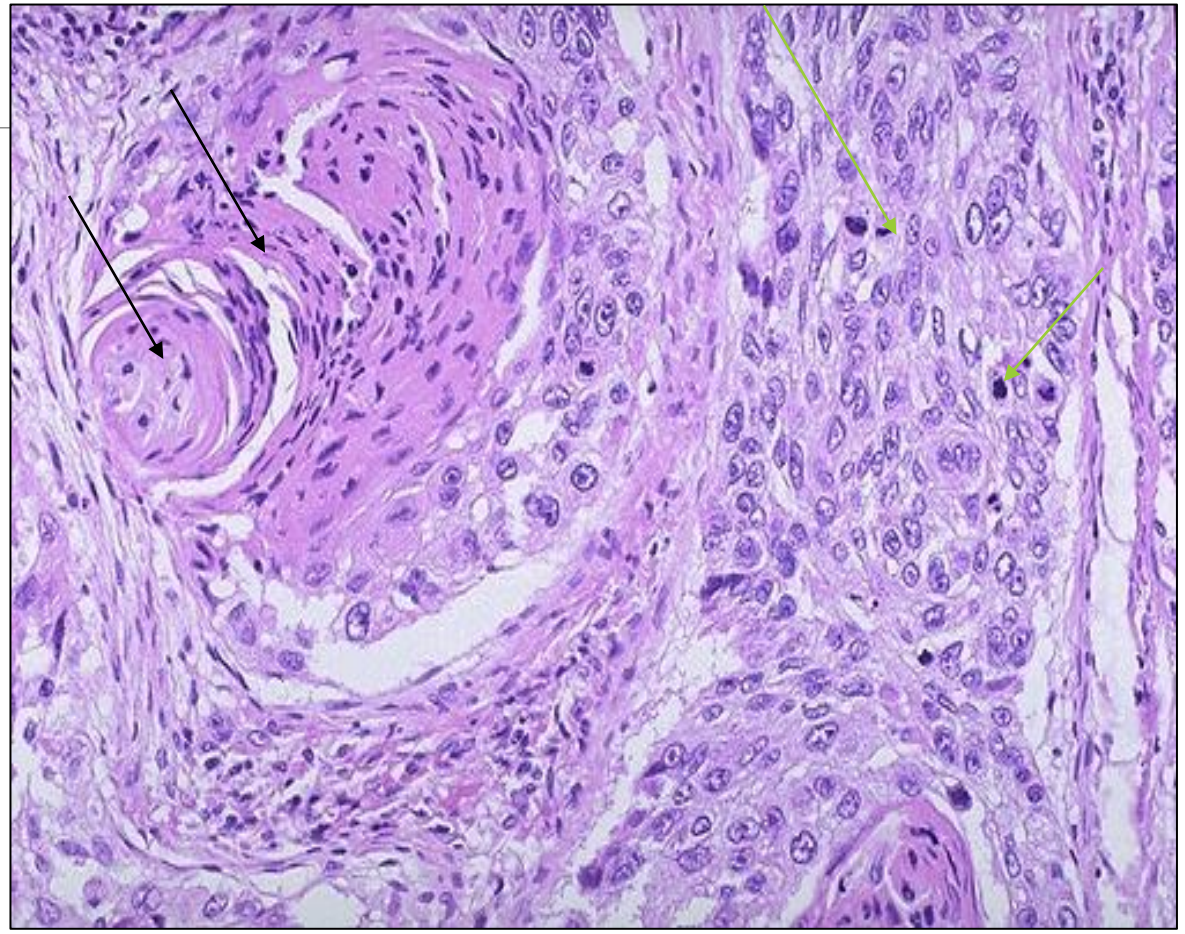
SCC (squamous cell carcinoma)

The pink cytoplasm with distinct cell borders and **intercellular bridges** is characteristic of squamous cell carcinoma.



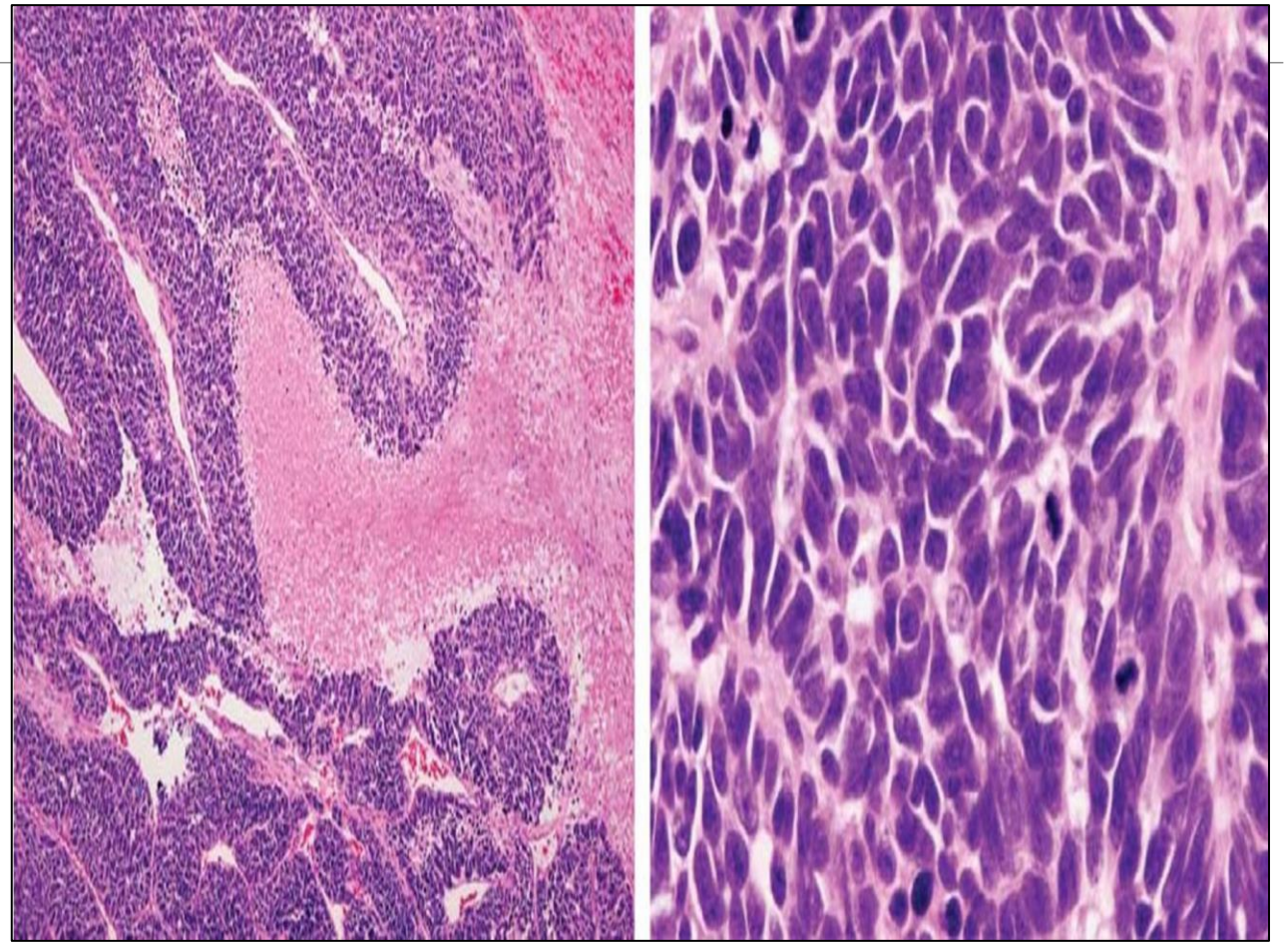
SCC (squamous cell carcinoma)

In this squamous cell carcinoma at the upper left is a **keratin pearl**. At the right, the tumor is less differentiated, and several dark **mitotic figures** are seen.



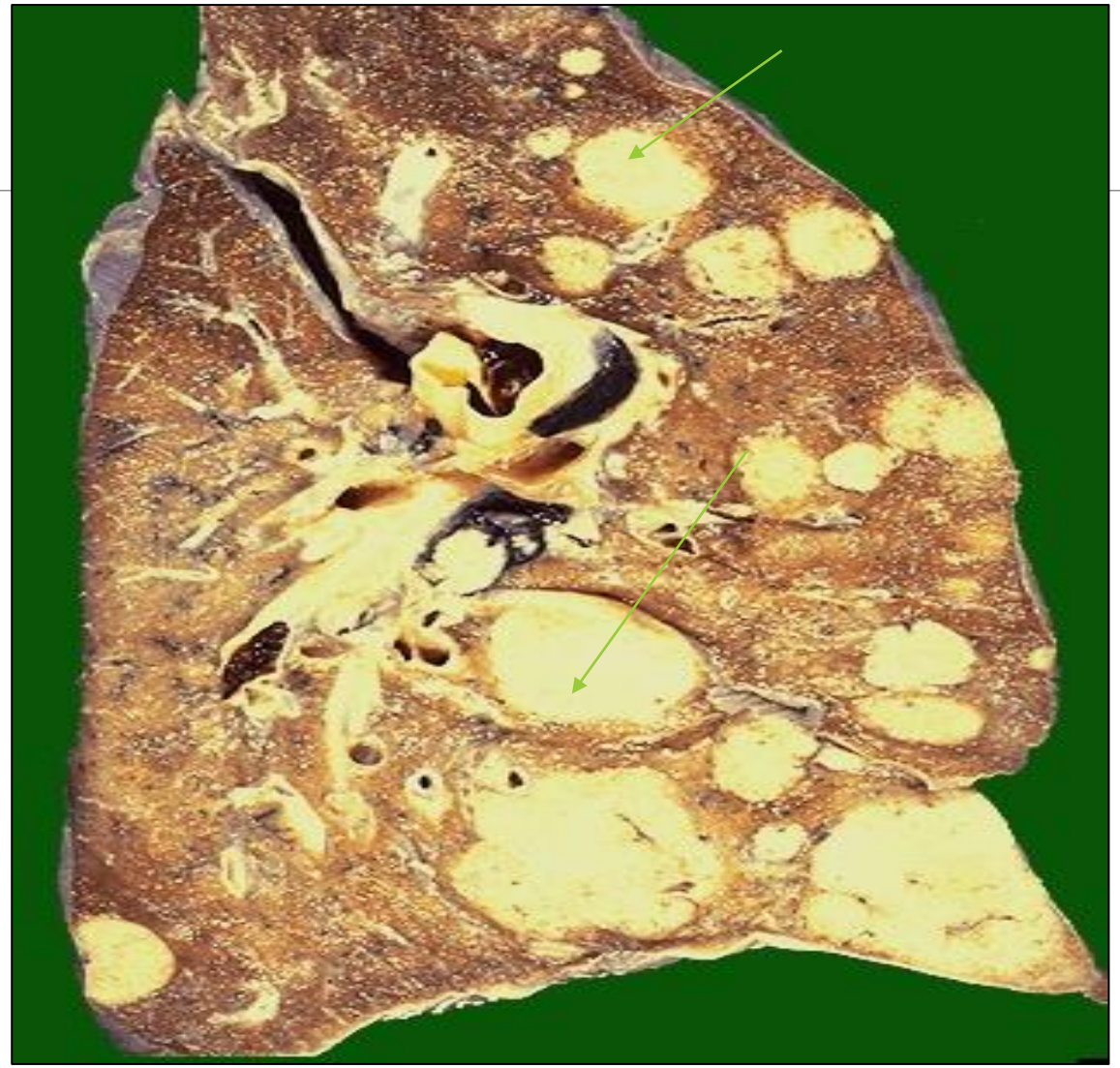
Small Cell Carcinoma

This is the microscopic pattern of a small cell carcinoma in which small dark blue cells with minimal cytoplasm are packed together in sheets



Metastatic Carcinoma

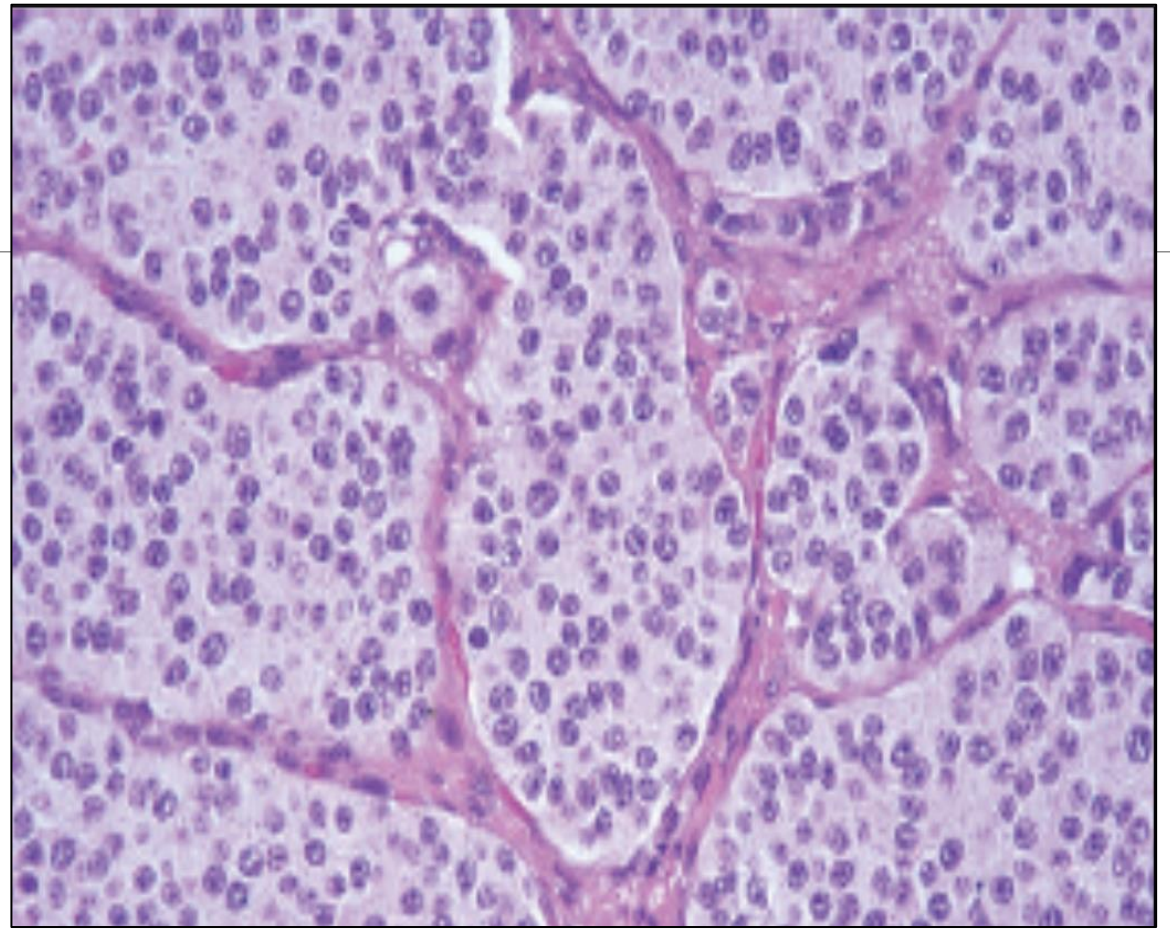
Multiple variably-sized masses are seen in all lung fields. These nodules are characteristic for metastatic carcinoma

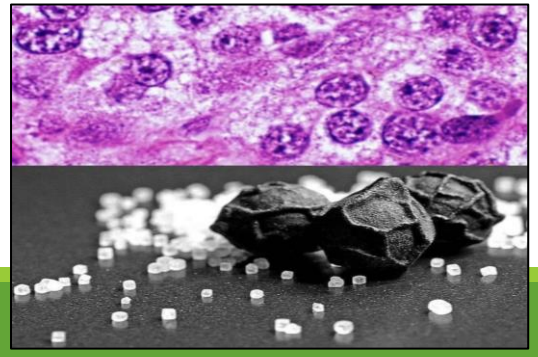


Typical Carcinoid Tumor

Histologic appearance demonstrates small, rounded, uniform nuclei with salt and pepper chromatic pattern and moderate cytoplasm.

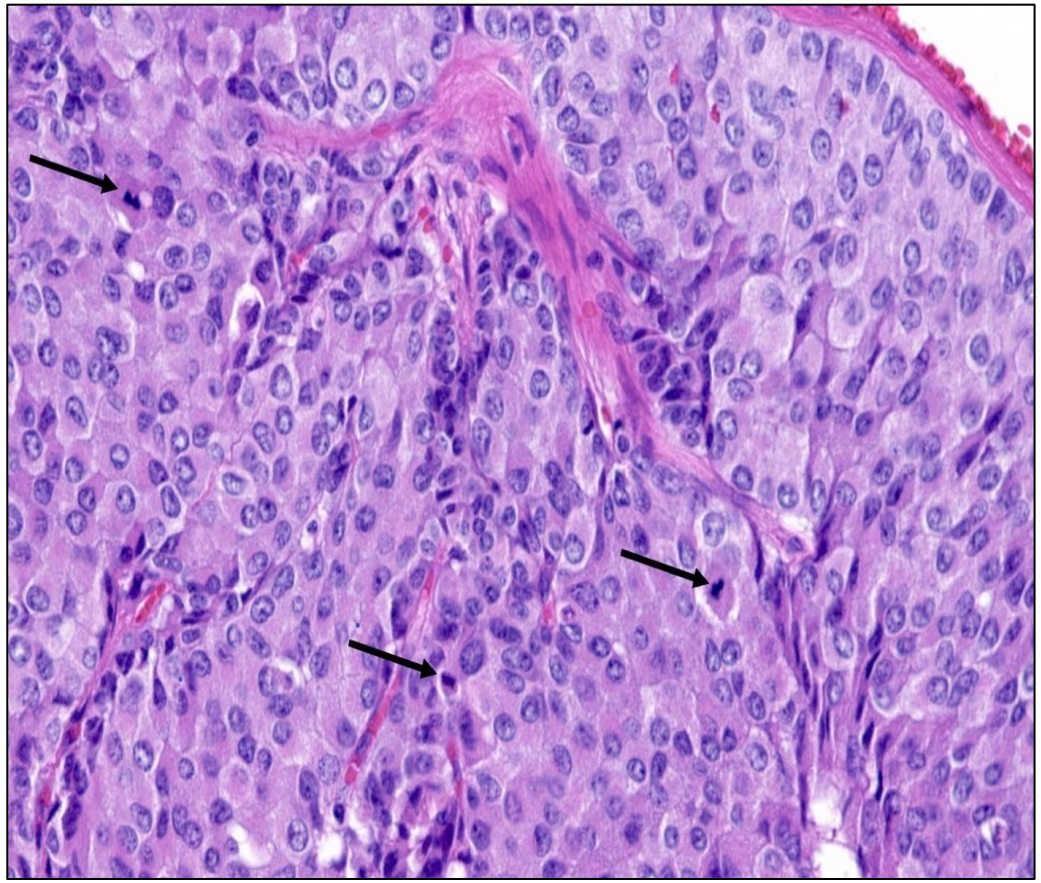
<2 mitoses/2 mm^2 and No necrosis

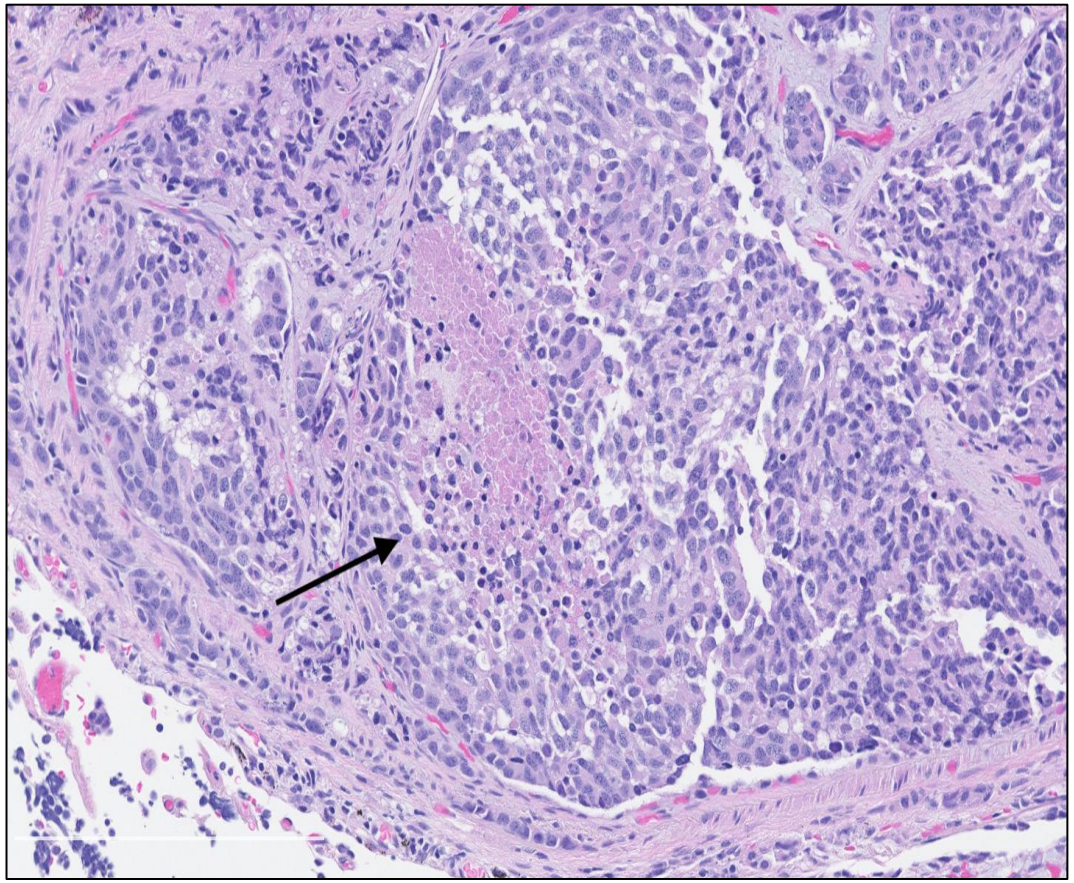




Atypical Carcinoid Tumor

2-10 mitoses/ 2mm^2 and/or foci of necrosis, usually punctate and focal





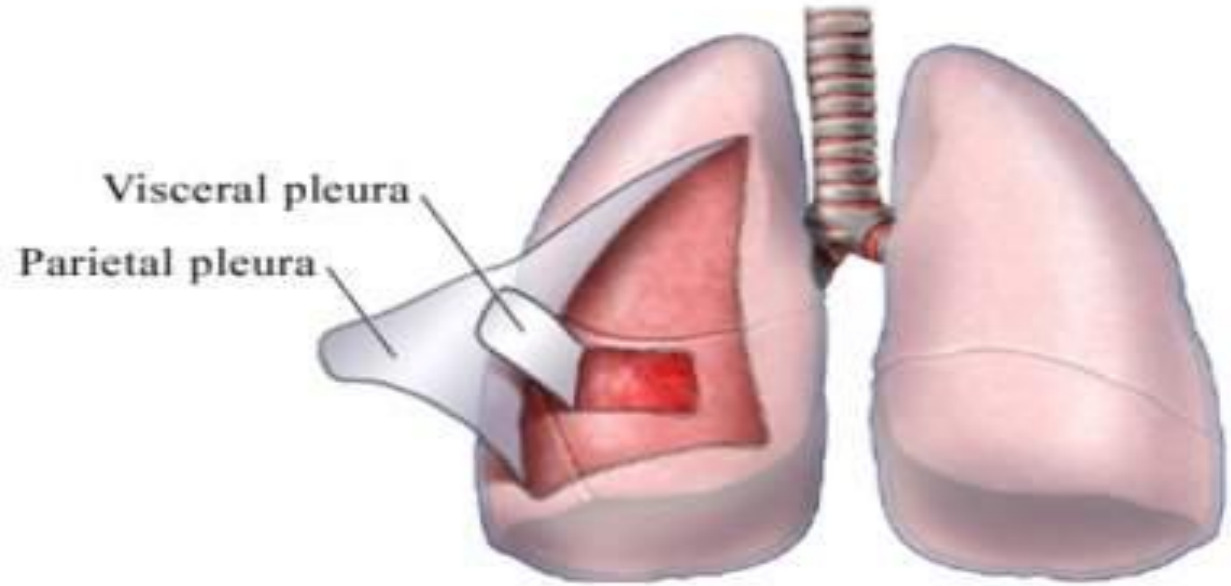
Pulmonary Hamartoma

- A benign lung neoplasm. These uncommon lesions appear on chest radiograph as a **"coin lesion”**.

Pulmonary Hamartoma

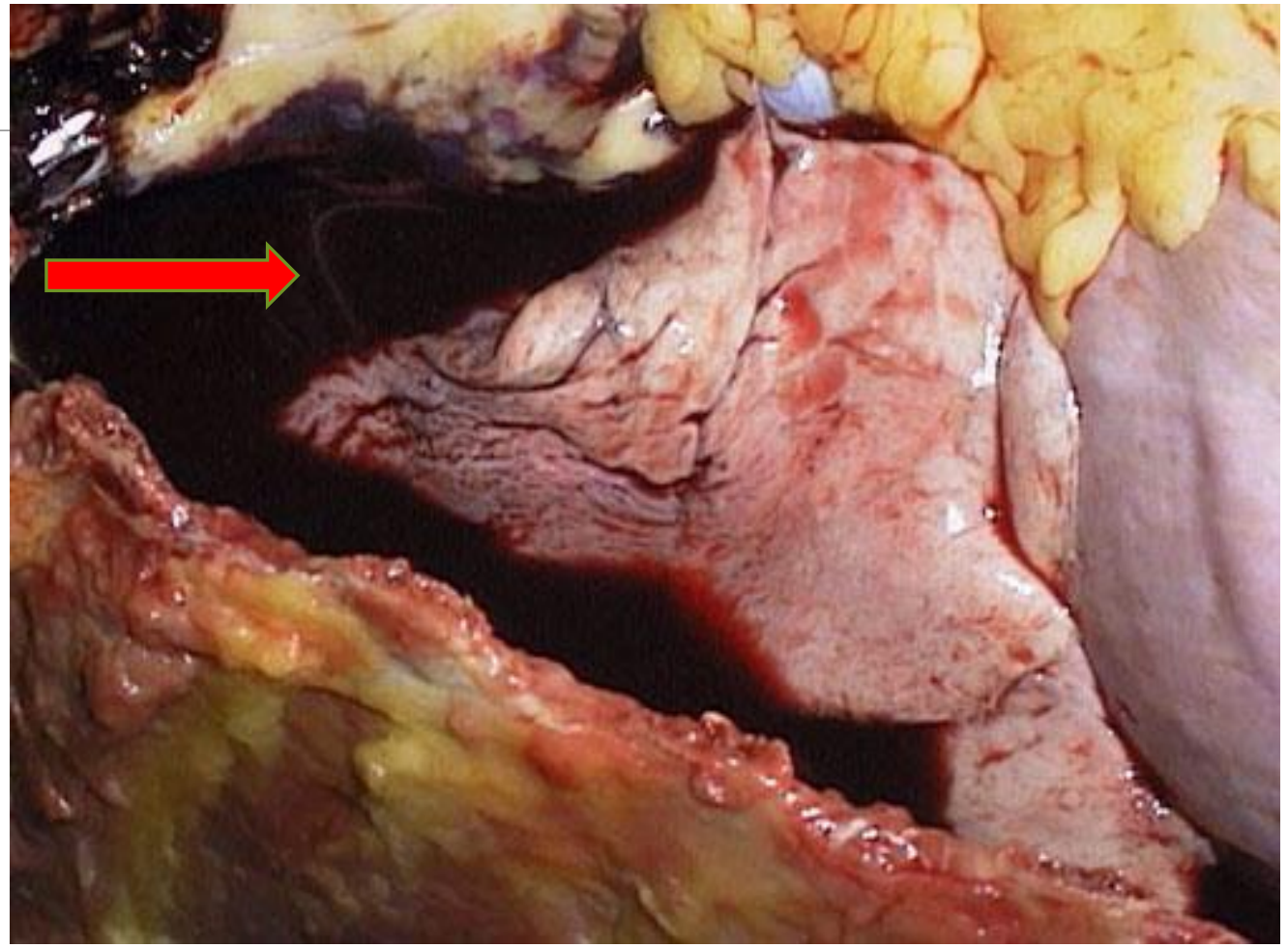
Composed mostly of benign cartilage on the right with a fibrovascular stroma and entrapped respiratory epithelium on the left.

Pleural Pathology



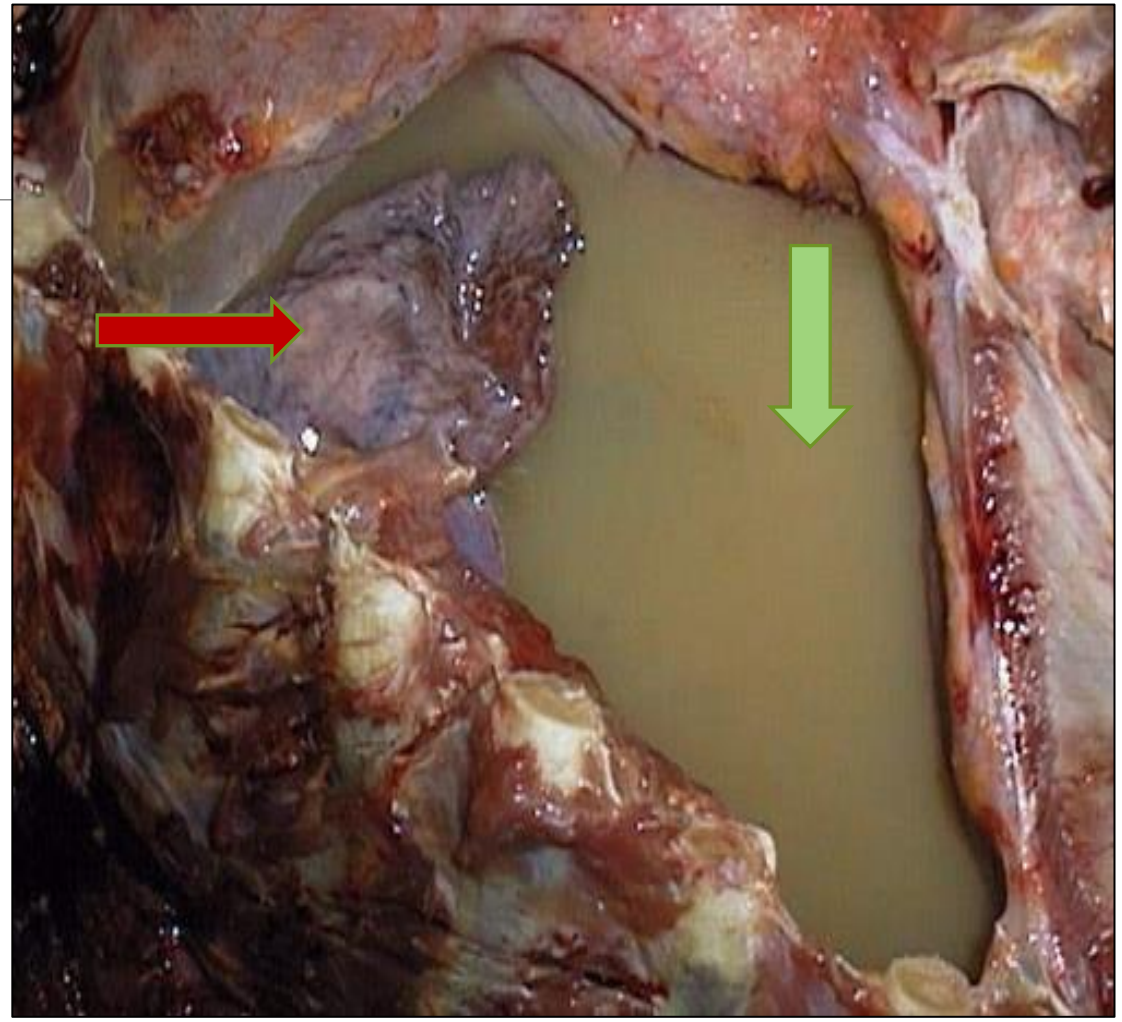
Hemothorax

The right lung is atelectatic and floating in bloody fluid filling the right chest cavity because of trauma.



Chylothorax

The right pleural cavity is filled with a cloudy milky yellowish-tan fluid, characteristic for a **chylothorax**. The **right lung** is markedly atelectatic.

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