

# 空洞性病變與 囊泡病變

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# Pattern identification





**Cavity**

**Cyst**

A faint, grayscale chest X-ray of a human torso, showing the ribcage, spine, and lung fields. The image is dark and serves as a background for the text boxes.

**Cavity**

**Cyst**

# Cavity

**A gas-filled space, seen as a lucency or low-attenuation area, within pulmonary consolidation, a mass, or a nodule.**

# Cyst

**A clearly defined air-containing space surrounded by a relatively thin ( $\leq 4$  mm) wall.**



Table 1. Causes of Focal or Multifocal Cystic and Cavitory Lung Disease

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Cystic (wall thickness $\leq 4$ mm)
Bullae
Blebs
Pneumatoceles
Congenital cystic lesions
Bronchogenic cyst
Congenital adenomatoid malformation
Infections
Coccidioidomycosis
<i>Pneumocystis carinii</i>
Hydatid disease
Traumatic cysts
Cavitory (wall thickness $> 4$ mm or surrounding infiltrate or mass)
Neoplastic
Bronchogenic carcinomas
Metastases
Lymphomas
Infections
Bacteria
<i>Staphylococcus aureus</i> , gram-negative bacteria, pneumococcus, mycobacteria, melioidosis, anaerobes, actinomycosis, nocardiosis
Fungi
Histoplasmosis, coccidioidomycosis, blastomycosis, aspergillosis, mucormycosis, cryptococcosis, <i>P carinii</i> , sporotrichosis
Parasites
Hydatid disease, paragonimiasis, amebiasis
Immunologic
Wegener granulomatosis
Rheumatoid nodule
Thromboembolism or septic embolism
Progressive massive fibrosis (pneumoconiosis)
Bronchiectasis, localized
Congenital lesions
Sequestration
Congenital adenomatoid malformation

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**V**ascular disease

**I**nflammation / Infection

**C**ancer and other tumors

**T**rauma

**I**nhalational disease

**M**alformation

**VICTIM**

# Cavitary Disease



I. Necrosis of lung parenchyma

II. Central necrosis of pre-existing nodule

- Air enters the defect → **A lucent defect**
- Evacuation of the necrotic contents → **A lucent**
- Reaction of normal lung → **band of inflammation** (edema, hemorrhage)
- **Loss of normal vascular markings**

- **Neoplastic**

- Bronchogenic carcinomas
- Metastases
- Lymphomas
- Kaposi's sarcoma

- **Infections**

- Bacteria
  - *S. aureus*, GNB, pneumococcus, mycobacteria, melioidosis, anaerobes, actinomycosis, nocardiosis
- Fungi
- Parasites

- **Inflammation**

- Wegener's granulomatosis
- Rheumatoid nodule
- Sarcoidosis
- Cryptogenic organizing pneumonia, BOOP

- **Thromboembolism or septic embolism**

- **Pneumoconiosis**

- **Bronchiectasis, localized**

- **Congenital lesions**

- Sequestration

# **Vascular disease**

**Wegener's granulomatosis**

**Rheumatoid disease**

**Infarct (thromboemboli or septic emboli)**

# **Vascular disease**

**Wegener's granulomatosis**

**Rheumatoid disease**

**Infarct (thromboemboli or septic emboli)**

# **Inflammation / Infection**

**Bacteria infection**

**Mycobacterial infection**

**Fungal infection**



# Cancer and other tumors

**Primary lung tumor**

**Metastasis**

# Cancer and other tumors

**Primary lung tumor**

**Metastasis**

# Trauma

**Pneumatoceles**

# Inhalational disease

**Silicosis and coal-worker's  
pneumoconiosis**

# Inhalational disease

**Silicosis and coal-worker's  
pneumoconiosis**

# Malformation

**Pulmonary sequestration**



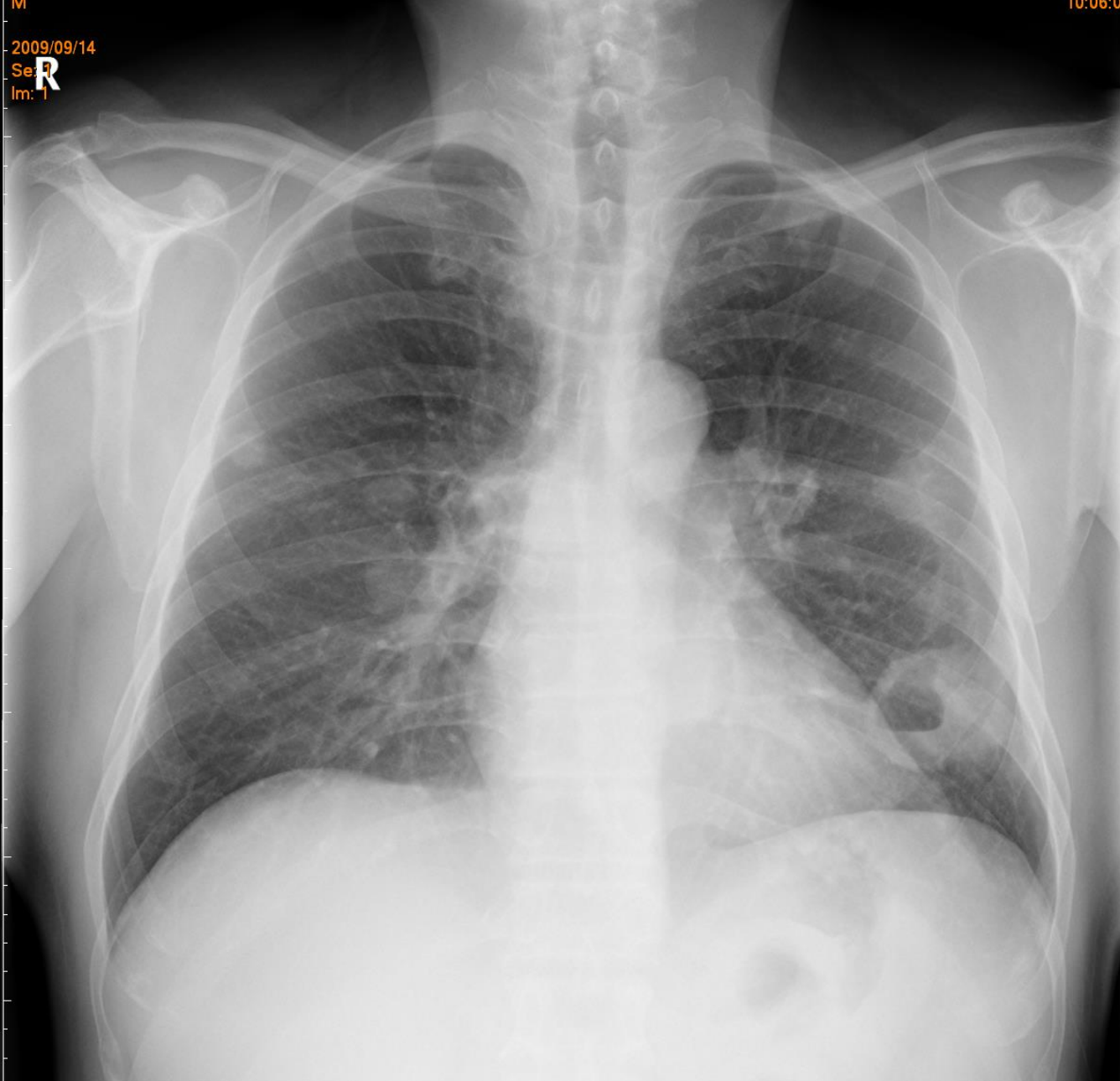
**Solitary or  
multifocal**

**A large  
dominant  
cavity**

**Wegener's granulomatosis**

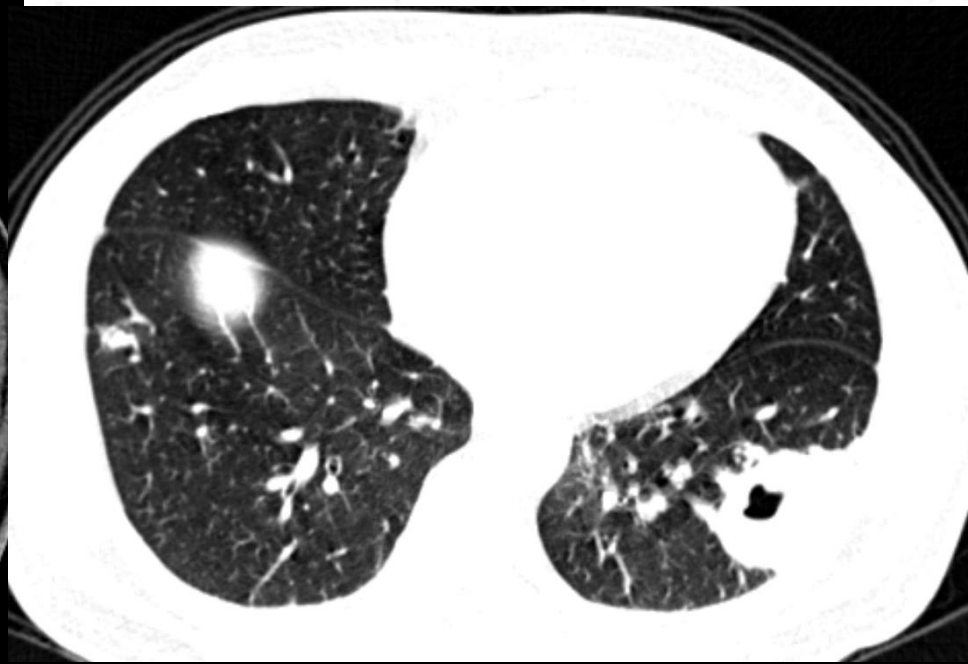
2009/09/14  
Se: R  
Im: 1

10:06:01



**Multifocal  
Peripheral**

**Septic emboli**







**G(+), G(-)**

**S. aureus**

**S. pneumoniae**

**K. pneumoniae**

**H. influenzae**

**Necrotizing pneumonia / Lung abscess**



新舊雜陳

Upper lungs

Multifocal

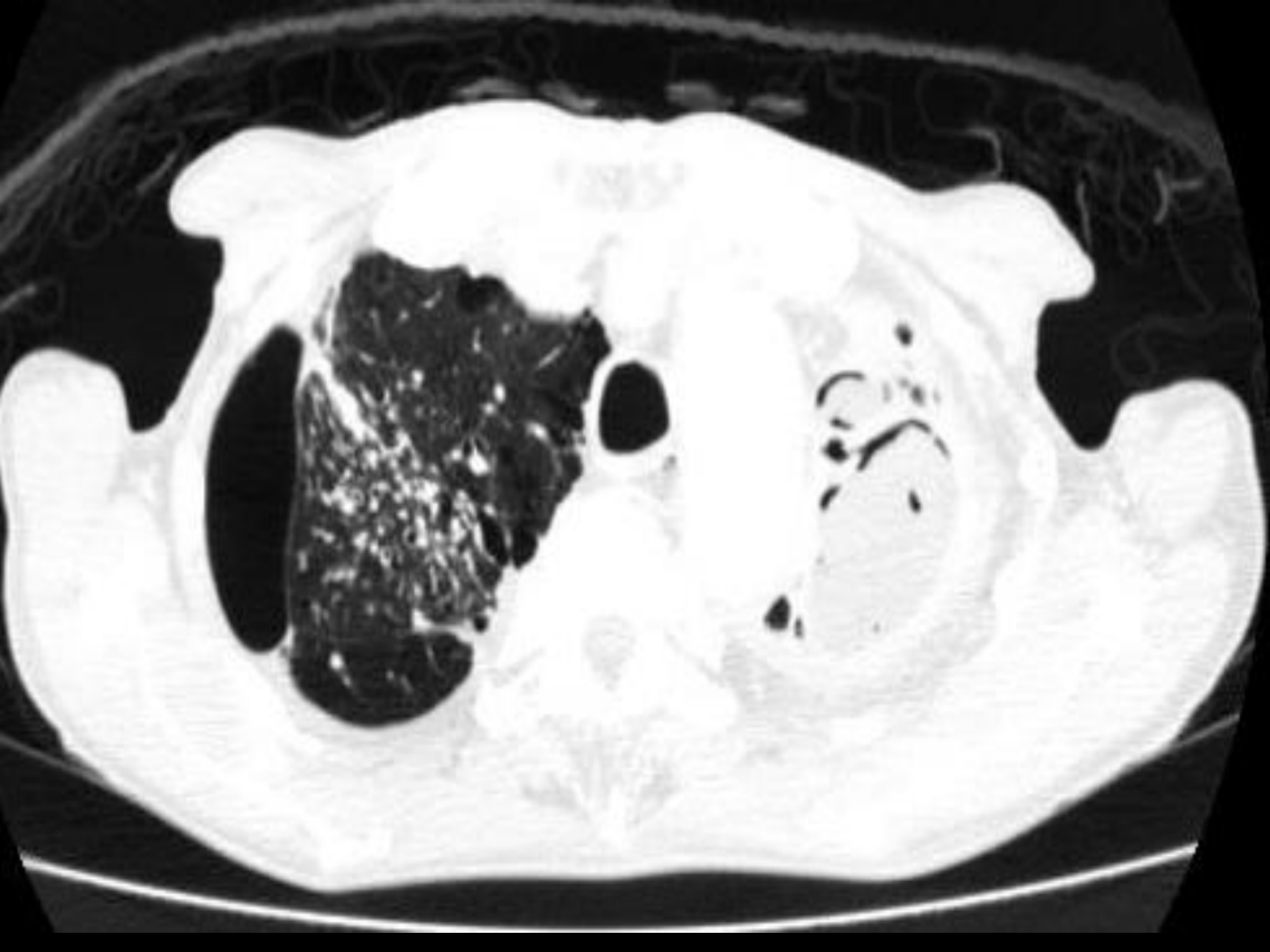
**Mycobacterium infection**

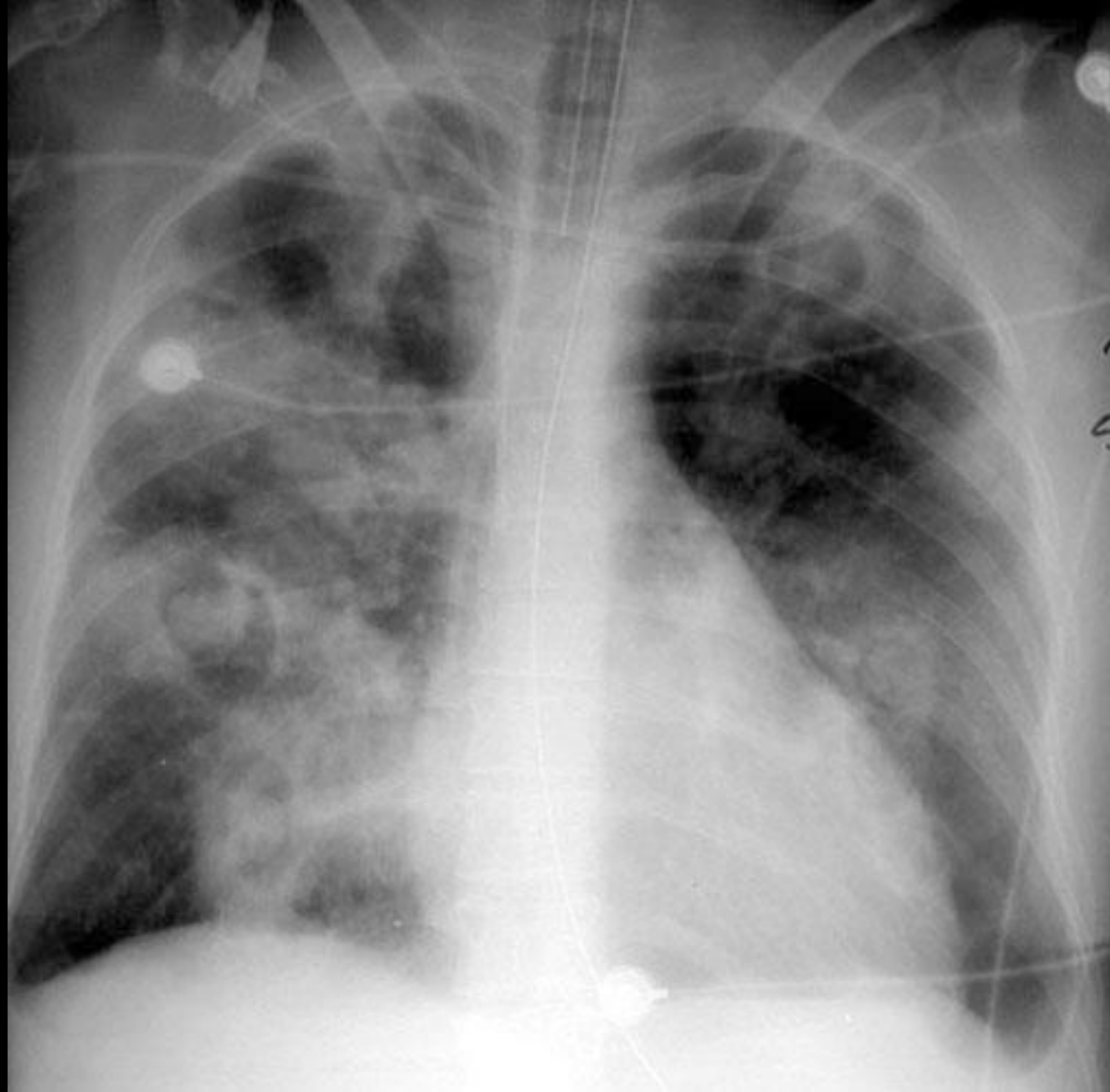


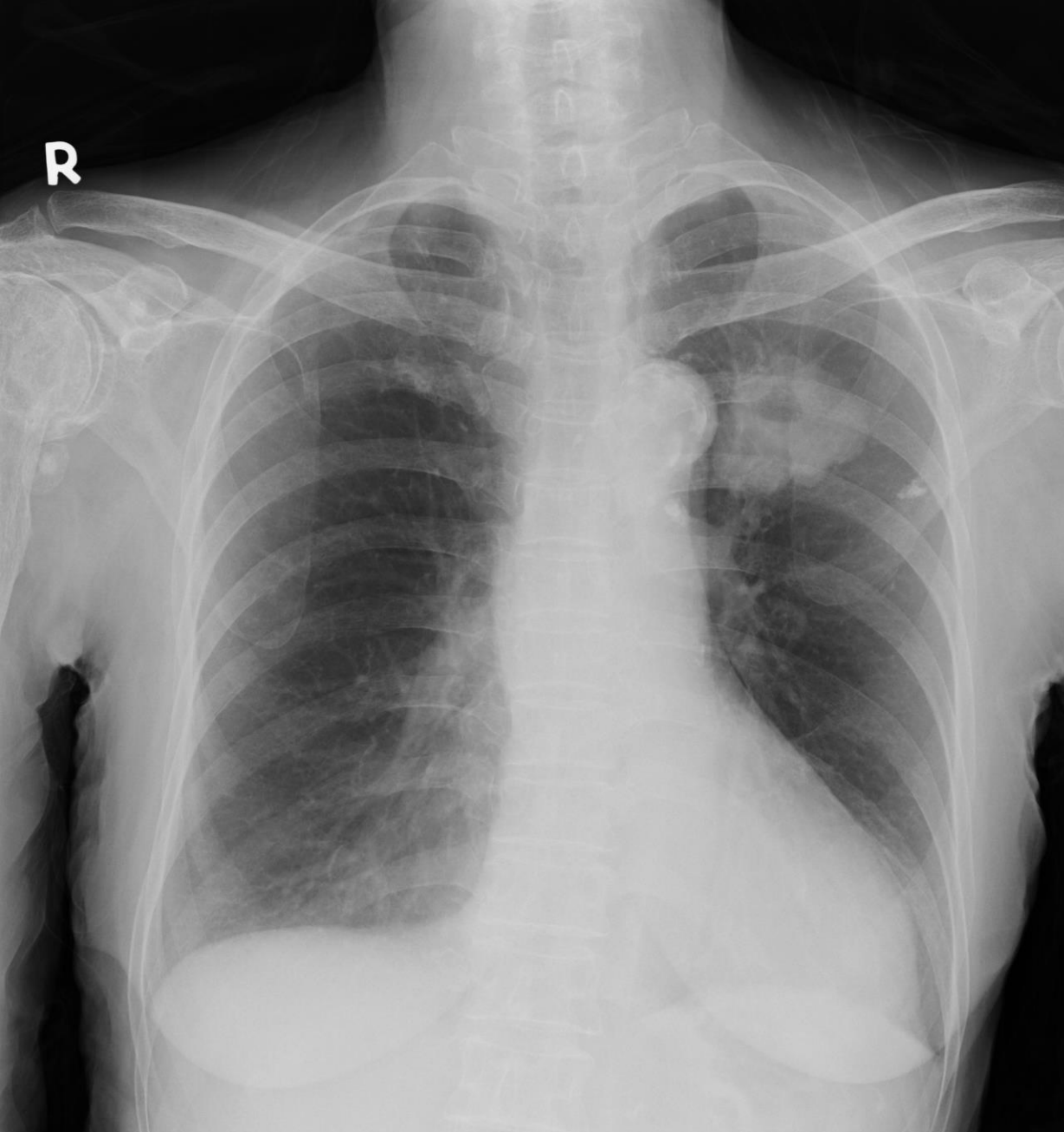
**Aspergilloma**

**Air crescent  
sign**

**Aspergillosis infection**







**Eccentric**  
**Lobulation**  
**Speculation**

**Malignancy**

821



**Pneumatoceles**





# Cystic Disease

- **Congenital cystic lesions**

- Bronchogenic cyst
- Congenital pulmonary airway malformation (CPAM),  
Congenital cystic adenomatoid malformation (CCAM)

- **Bullae**

- **Blebs**

- **Pneumatoceles**

- **Infections**

- Coccidioidomycosis
- *Pneumocystis jirovecii*
- Hydatid disease

- **Traumatic cysts**

- **Cystic bronchiectasis**

**Vascular disease**

**Inflammation / Infection**

**Cystic bronchiectasis**

# Cancer and other tumors

Trauma

**Pneumatoceles**

# Inhalational disease

## Malformation

**Bronchogenic cyst**

**Pulmonary sequestration**

**CPAM** (Congenital Pulmonary Airway Malformation)

# Others

**Lymphangiomyomatosis**

**Langerhans' cell histiocytosis**

**Honeycomb lung**

**Bullae / Blebs**





**Cystic bronchiectasis**



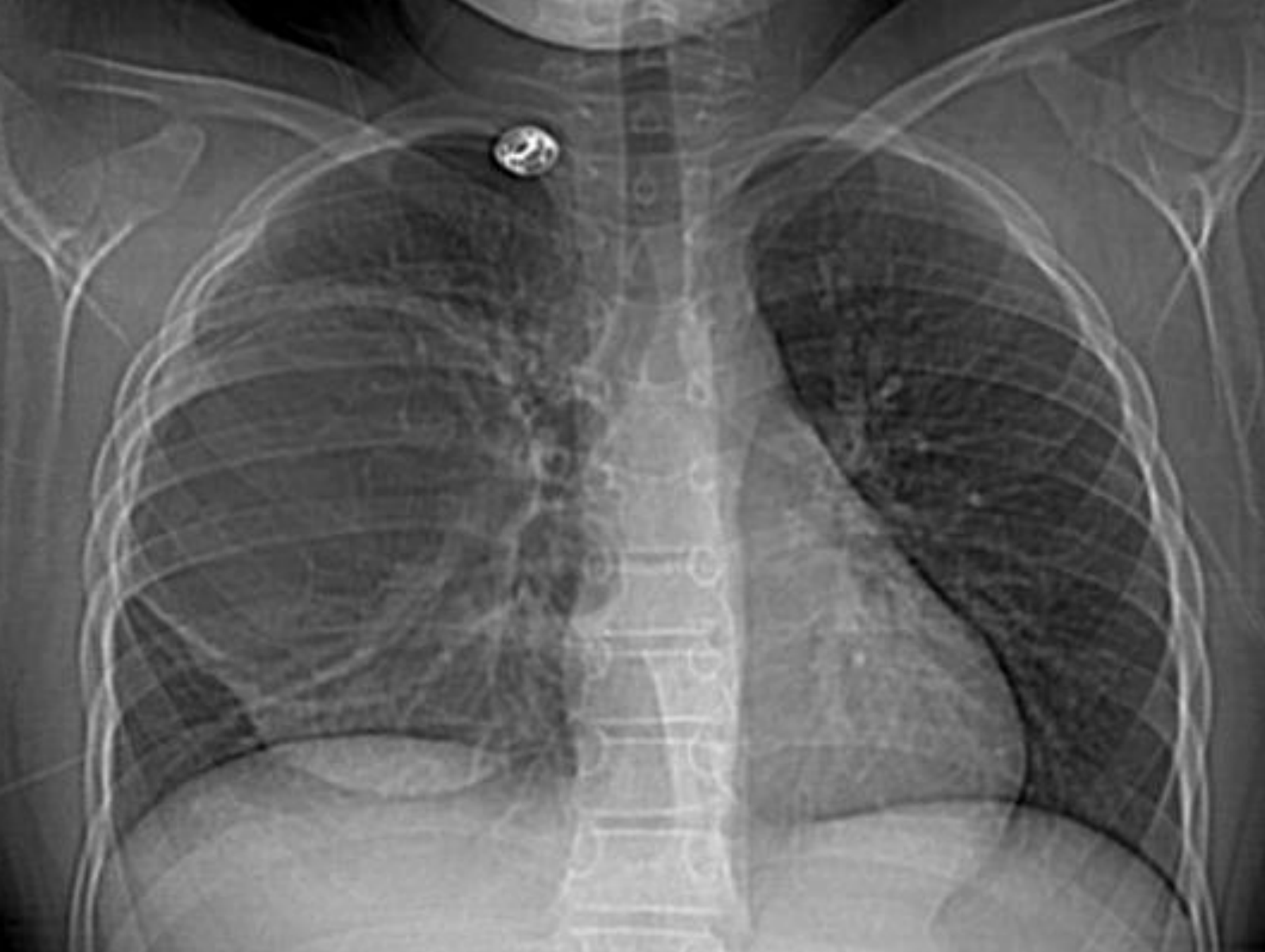
~80% 縱隔腔

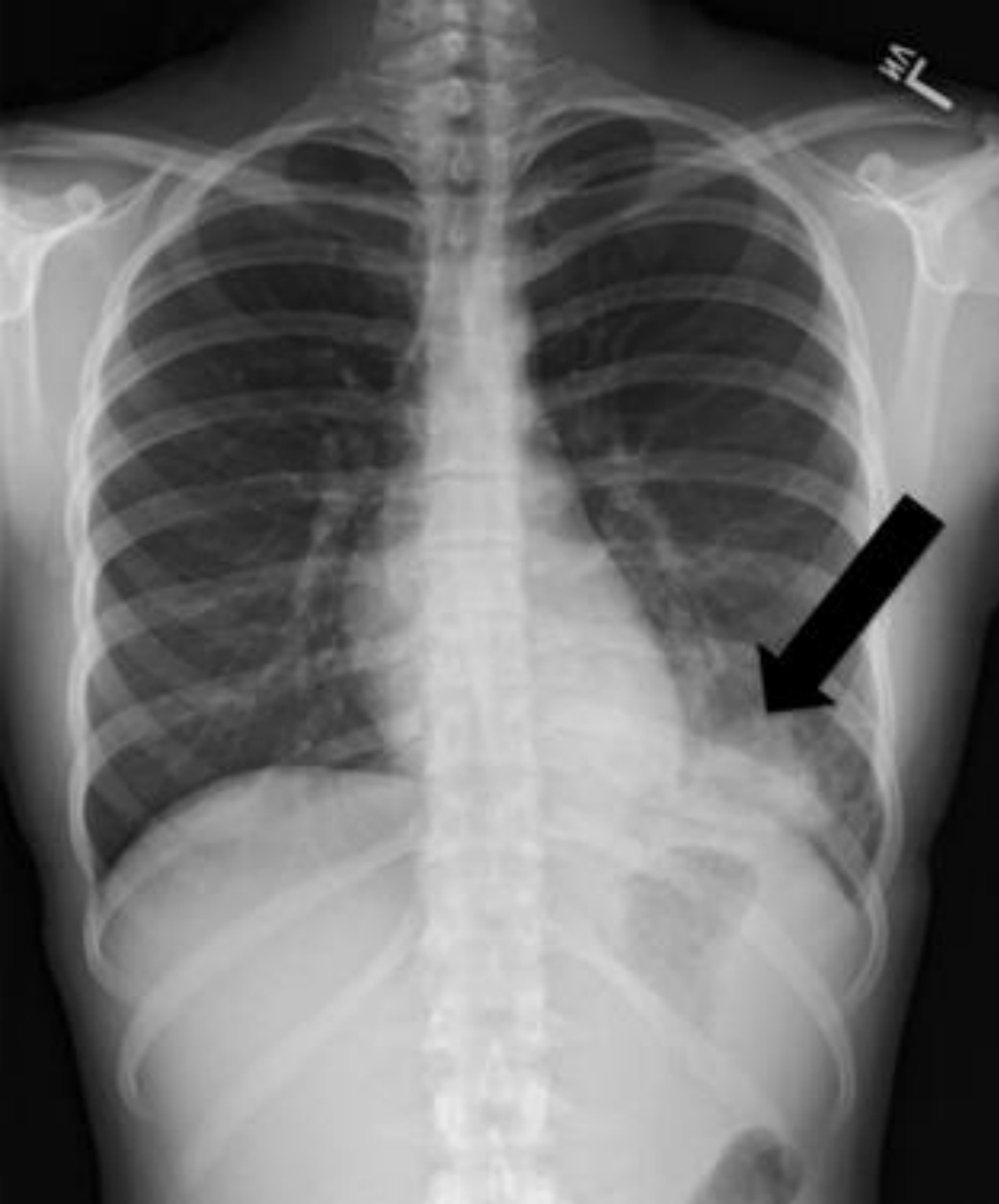
**Bronchogenic cyst**

1000  
1000  
1000

RC

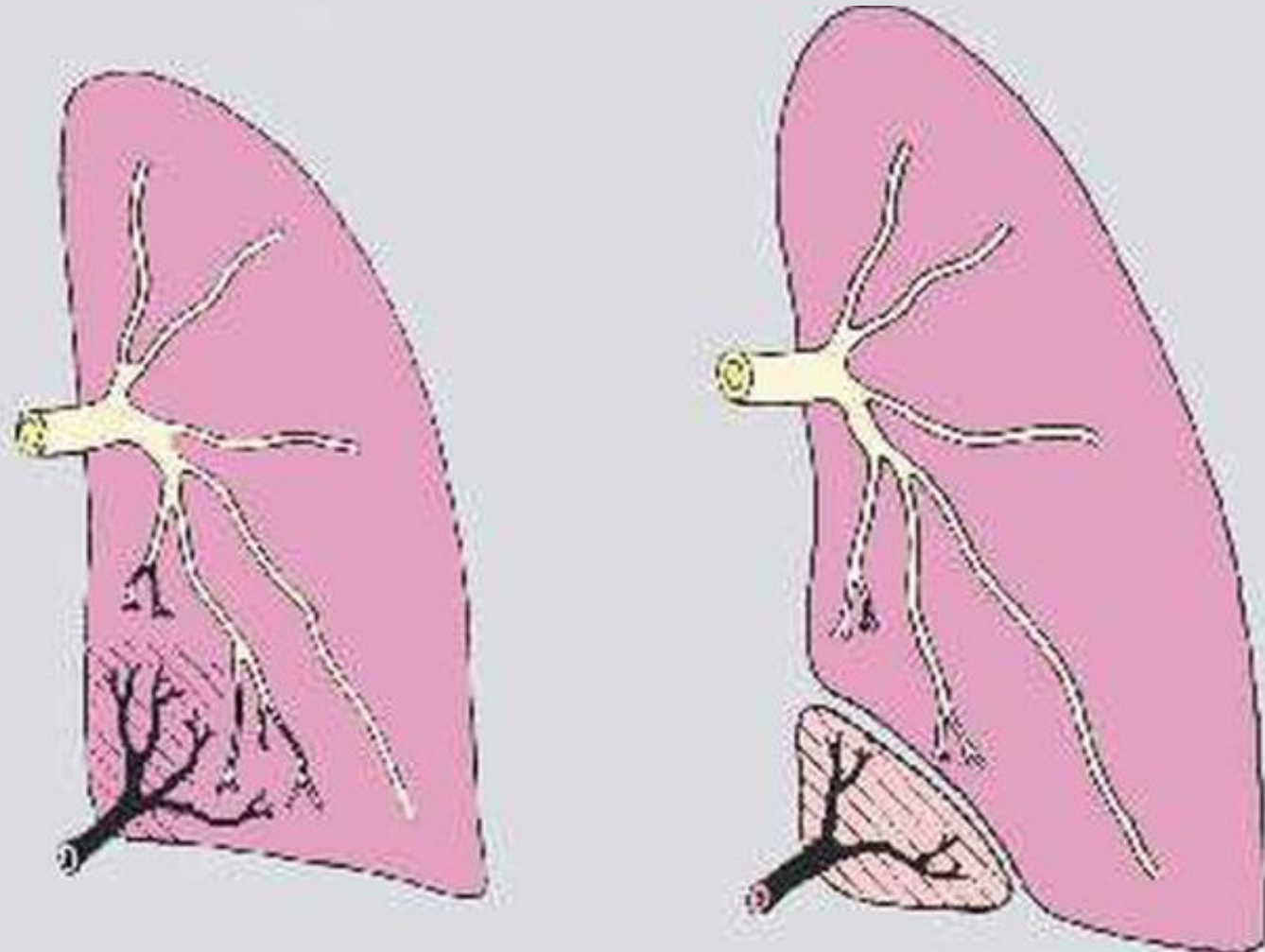




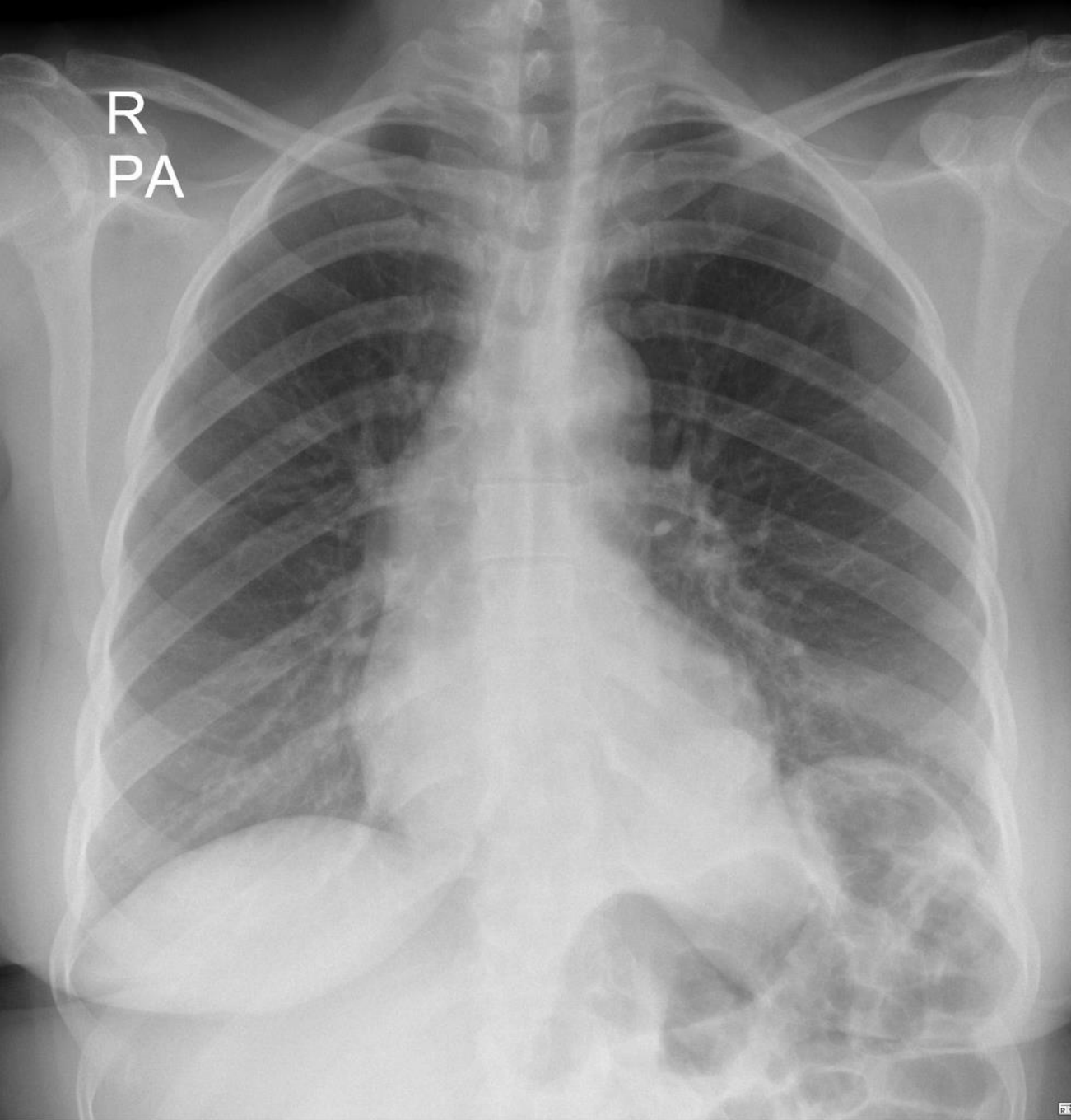


## Pulmonary sequestration

# Intralobar Extralobar

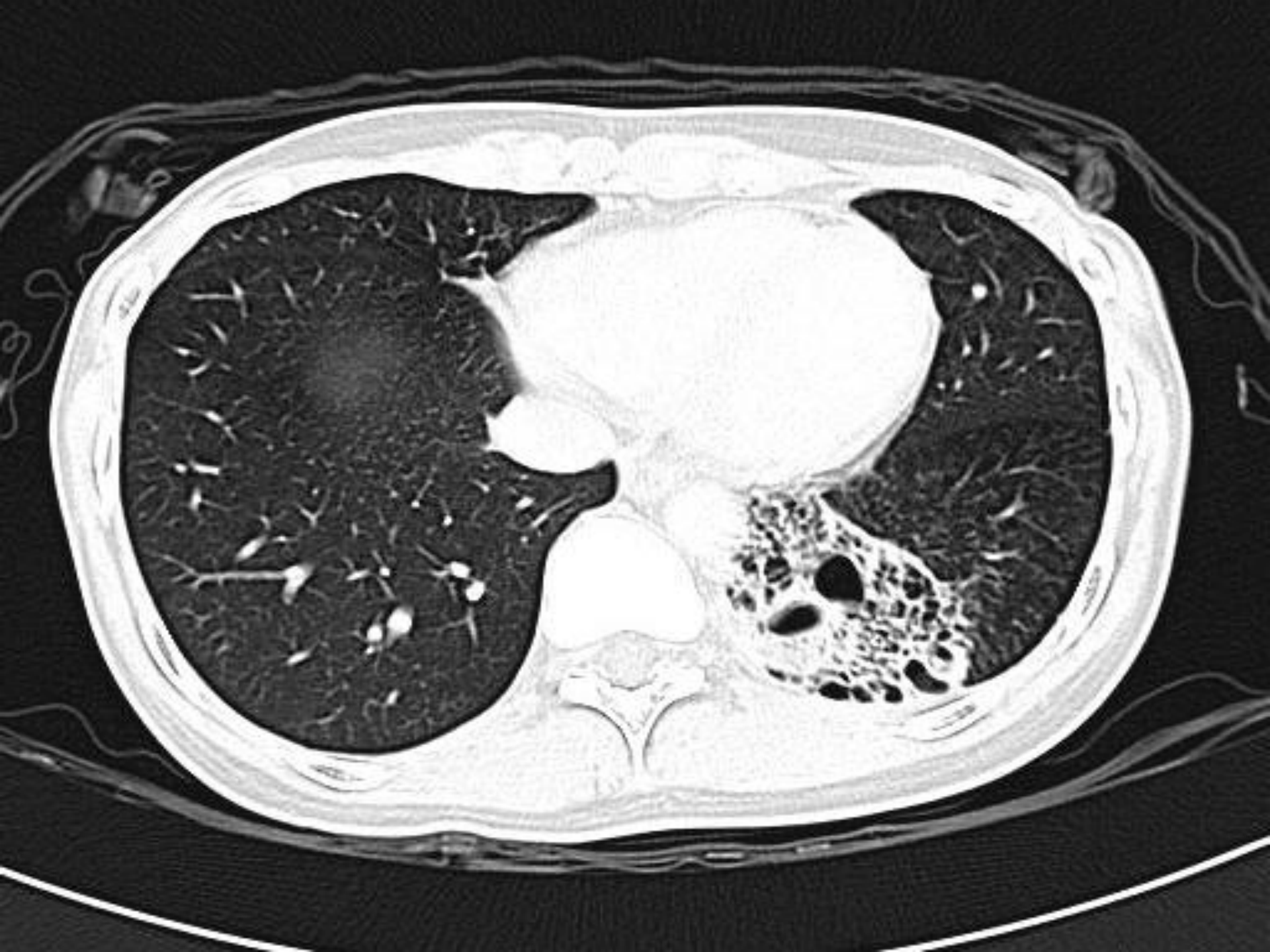


**Pulmonary sequestration**



Case courtesy of Dr Mohamed Hossam el Deen, Radiopaedia.org, rID: 46770







# Intralobar

**Left lower lobe: 60%**

**Right lower lobe: 40%**

# Extralobar

**Almost always affect the left lower lobe,  
~10% can be subdiaphragmatic**

**Cystic bronchiectasis**

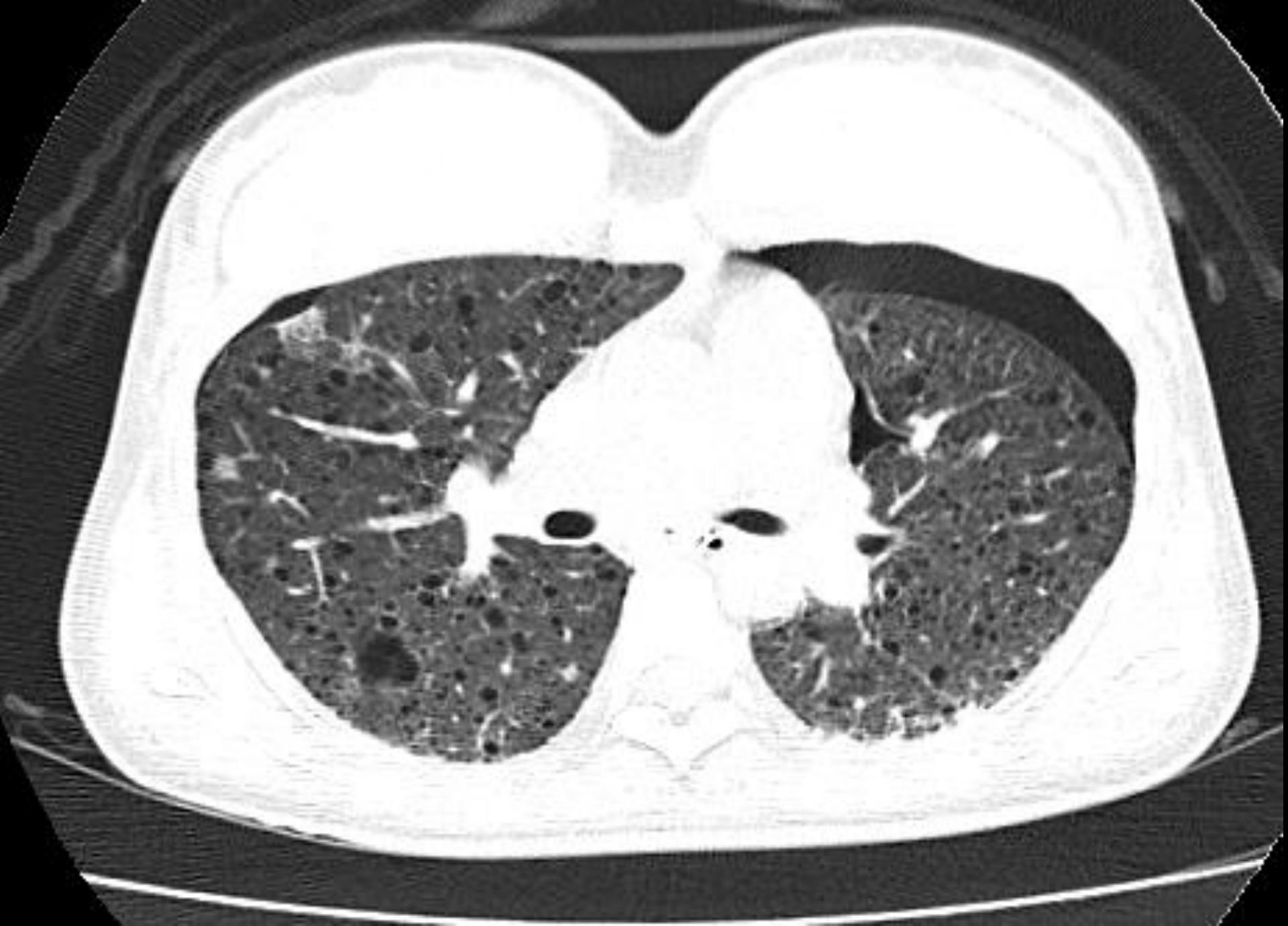


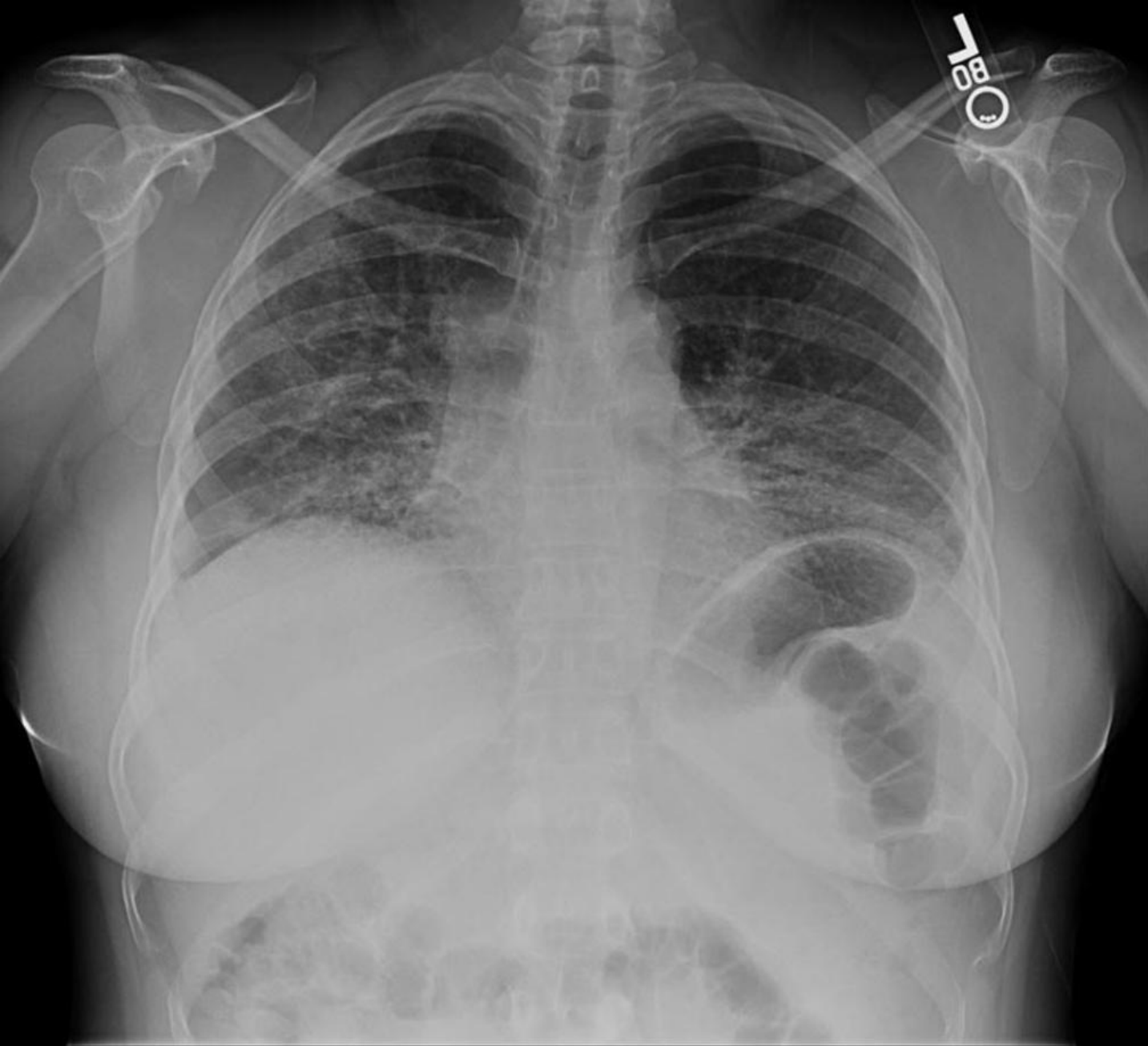
**Women of  
childbearing age**

**Recurrent  
pneumothorax**

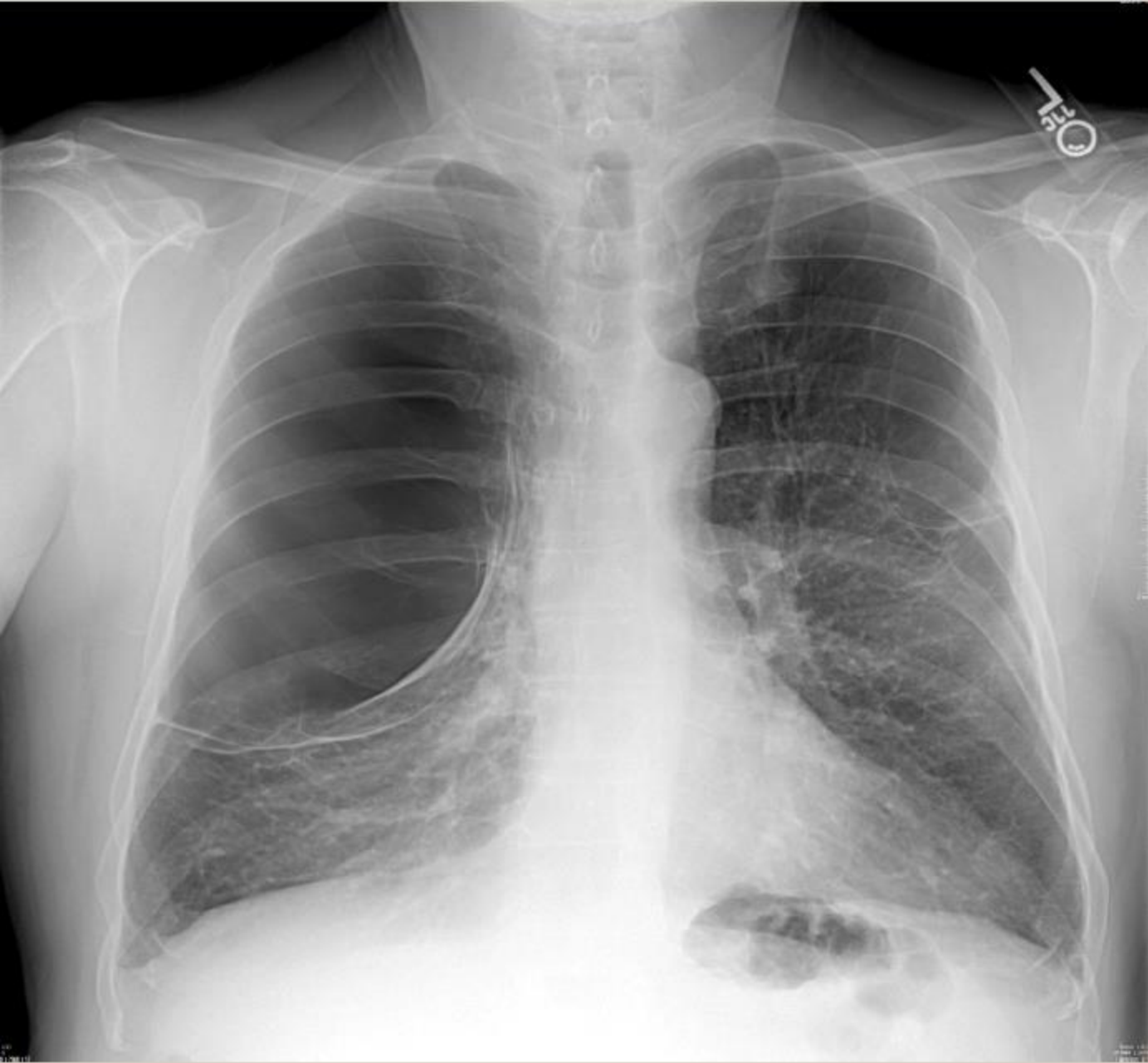
**Tuberous  
sclerosis  
complex**

**Lymphangioleiomyomatosis**





**Honeycomb / IPF**



**Bullae**

# Summary

A faint, grayscale chest X-ray of a human torso is visible in the background, showing the ribcage and lung fields. Two yellow-bordered boxes are overlaid on the image, one on the left and one on the right.

**Cavity**

**Cyst**

**V**ascular disease

**I**nflammation / Infection

**C**ancer and other tumors

**T**rauma

**I**nhalational disease

**M**alformation