# Radiology Team 429

## INTERACTIVE SESSION
## CHEST & CARDIOVASCULAR RADIOLOGY

# Radiology Team 429

In this team we used the outlines from the:

Doctor's slides

Lecture notes

427 Radiology team

Diagnostic Imaging –PETER ARMSTRONG – 6Th Edition

Sorry we don't hold responsibility for any missing information or perhaps – perhaps -wrong material.

We tried our best to present this lecture in the best way, and we hope what we wrote is enough to cover the subjects.

**Team Leaders:**

Abdulmajeed Al-Sadhan, Ibrahem Al-Sadhan, Sarah Mahasin

**Team Members:**

Abdullah aleisa – Abdullah Al-Ogayill

**Best Wishes : )**

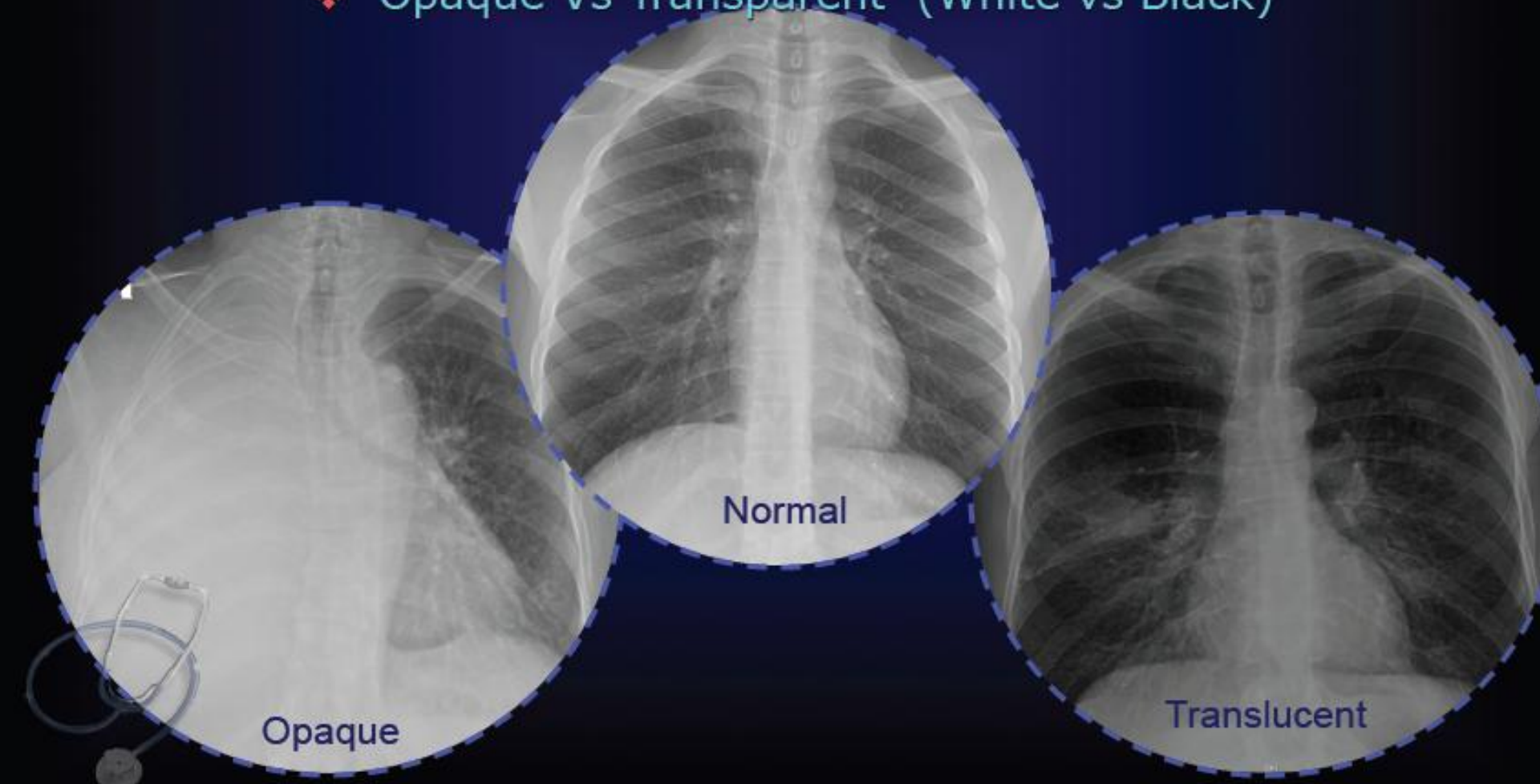
# OBJECTIVES

Students at the end of the lecture will be able to:

- Recognize different terms utilized in chest & cardiovascular radiography
- Develop a consistent and simplified technique for reading CXR
- Define the chest pattern of abnormality seen on the CXR

# IMPORTANT TERMS

- Opaque Vs Transparent (White vs Black)



# Opaque Vs Transparent (White vs Black)

- Opaque: appears white, covers the organs, interacts greatly with x-ray film, ex. Consolidation

- Translucent: clearer and darker ex. Emphysema

# IMPORTANT TERMS

- Alveolar Vs Interstitial

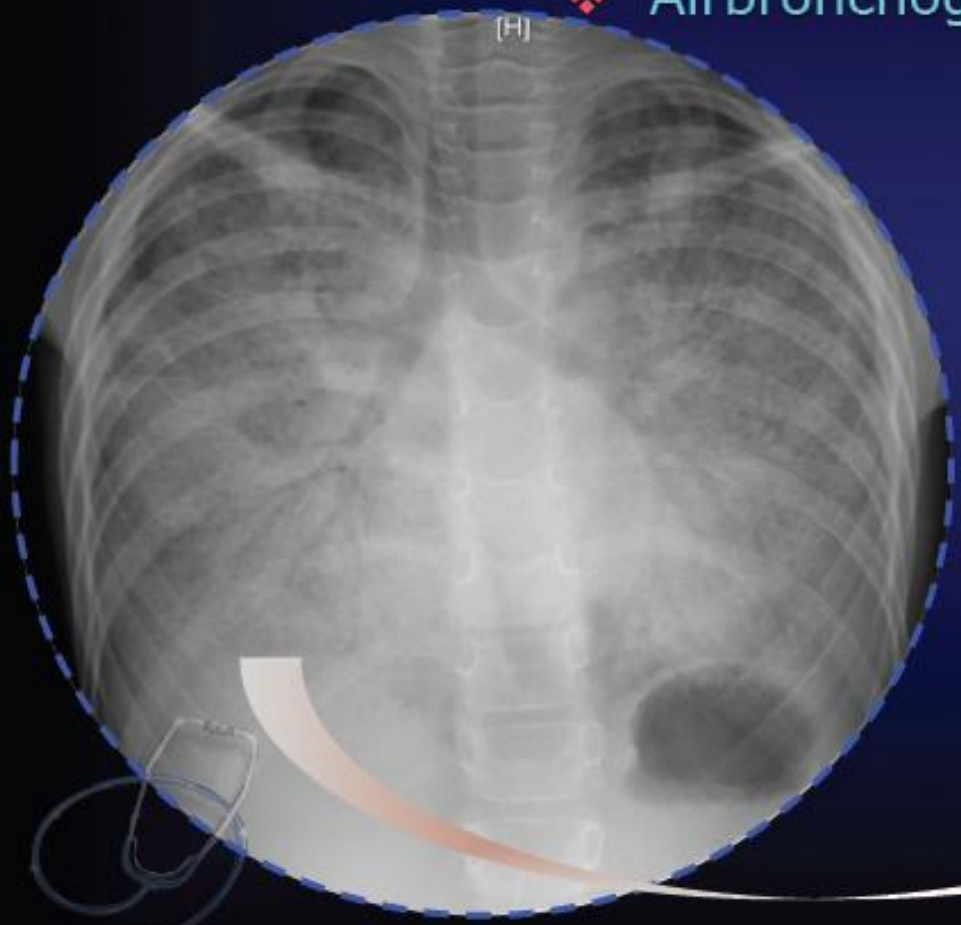

# Alveolar Vs Interstitial

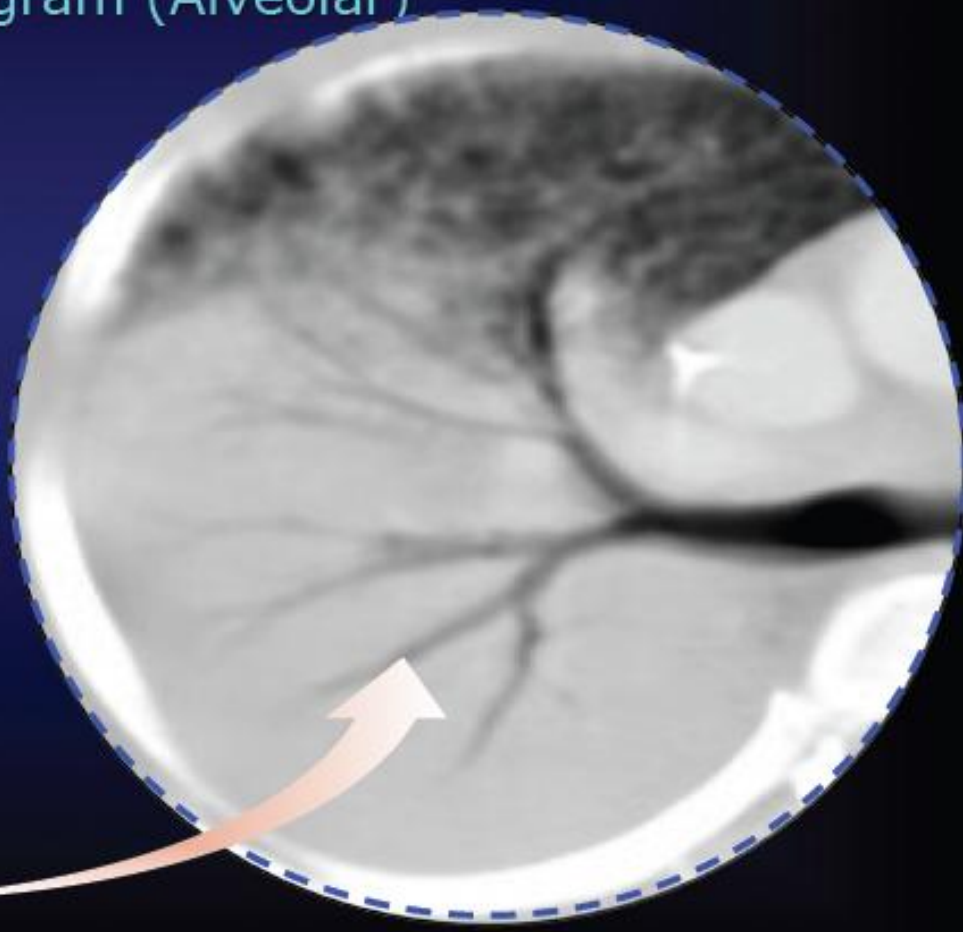
- Alveolar: the disease makes the lungs appear white and opacified. The alveolar space is filled with exudates or transudates.

- Interstitial: for example in edema there is fluid and thickening of the interstitium

# IMPORTANT TERMS

- Airbronchogram (Alveolar)



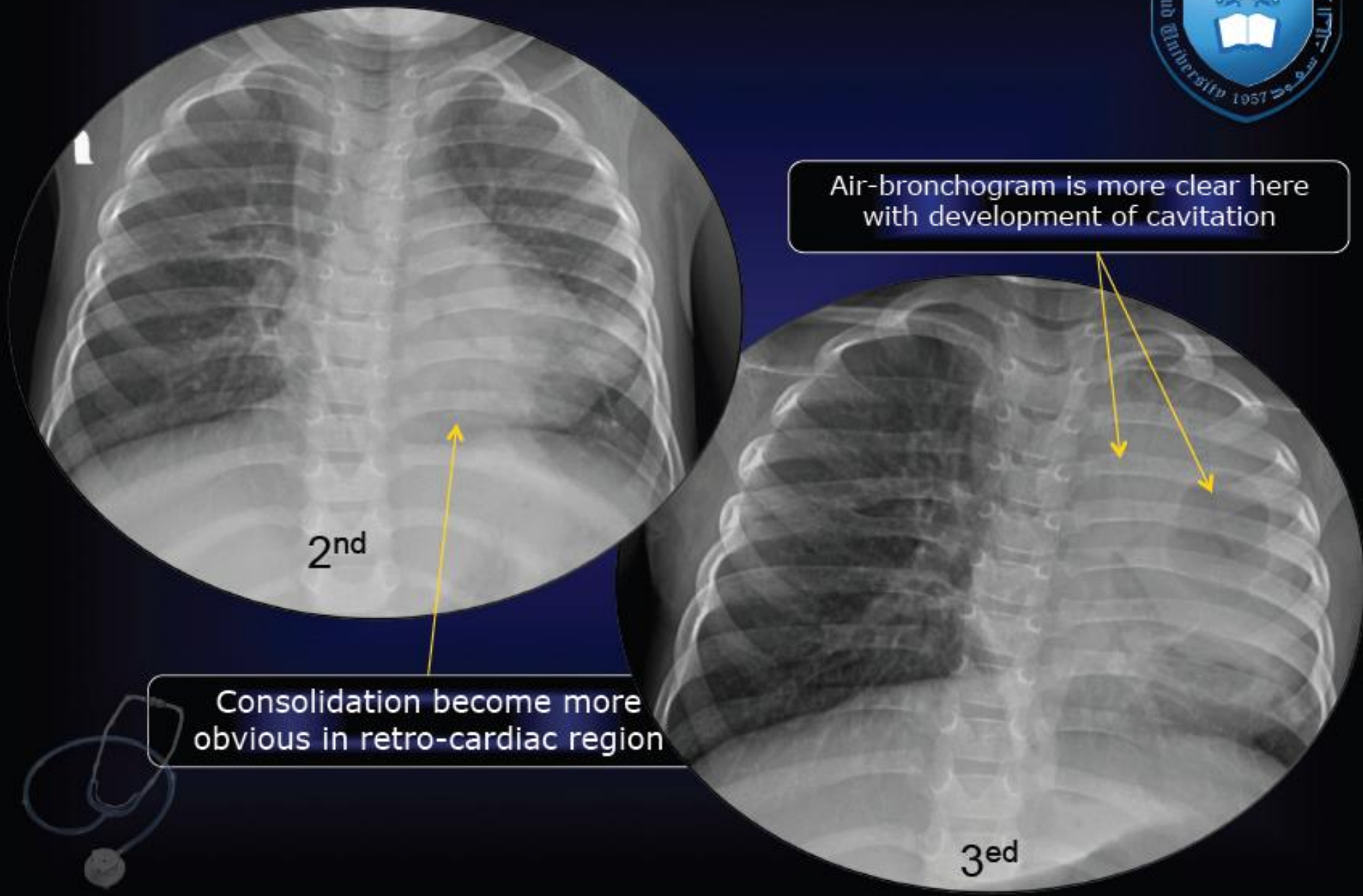
# Airbronchogram

- Airbronchogram: in a normal person you see a bit of the bronchial tree but cannot detect the alveolar space. In a disease, the alveolar space is visible. ex. Pulmonary edema: fluid in the alveoli appears black and blocks the air


# Child presenting with cough and fever

- Case: child with cough and fever. There is opacity, brochogram sign, turbidity of air

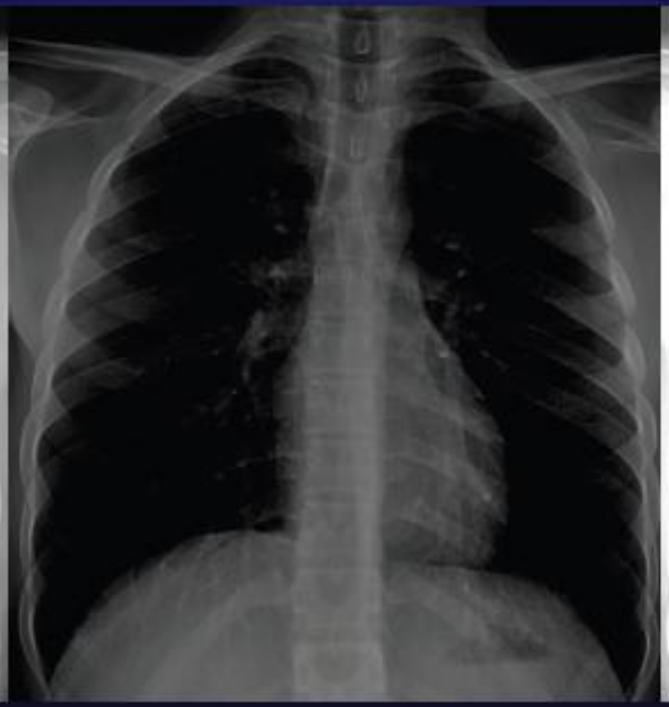
# Child presenting with cough and fever



# IMPORTANT TERMS

- Adequate Exposure

ADEQUATE

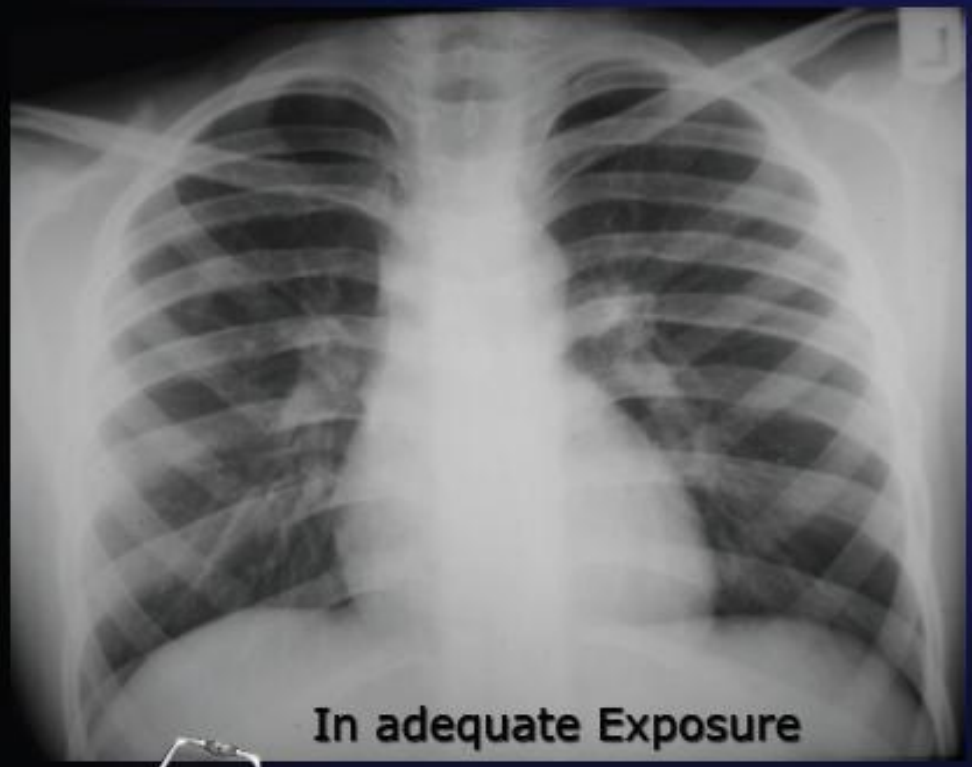


OVER

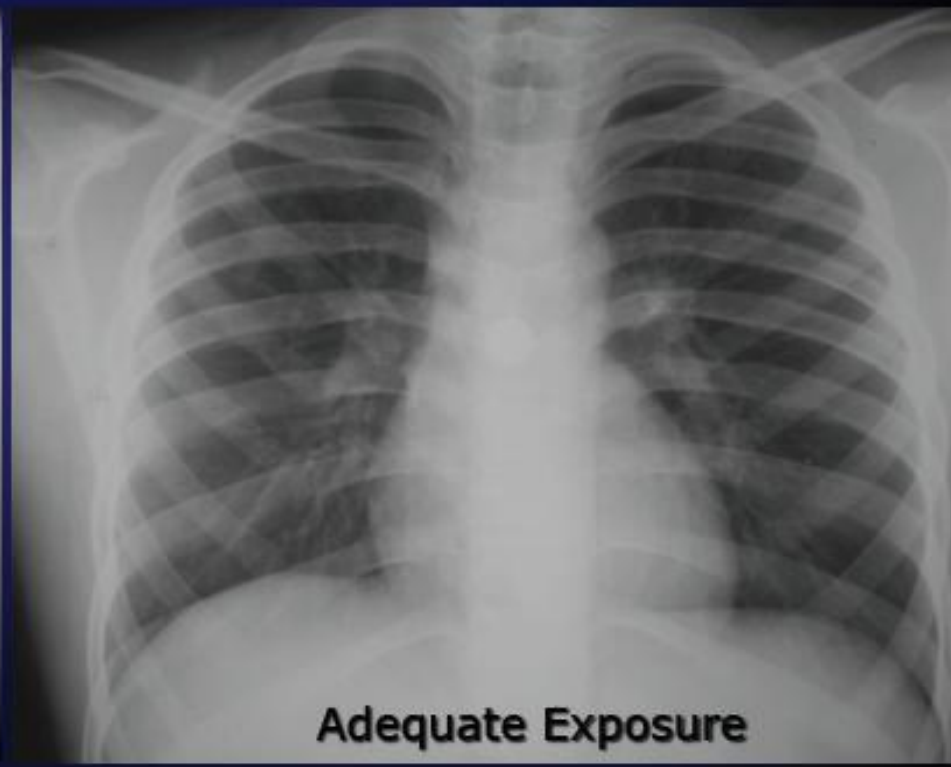
UNDER

# IMPORTANT TERMS

- Adequate Exposure



In adequate Exposure



Adequate Exposure

# Adequate exposure

- the white branching on the x-ray are arteries and veins. Exposure is an imaging technique that can be changed to view adjacent structures

# *Interpretation*

In radiology

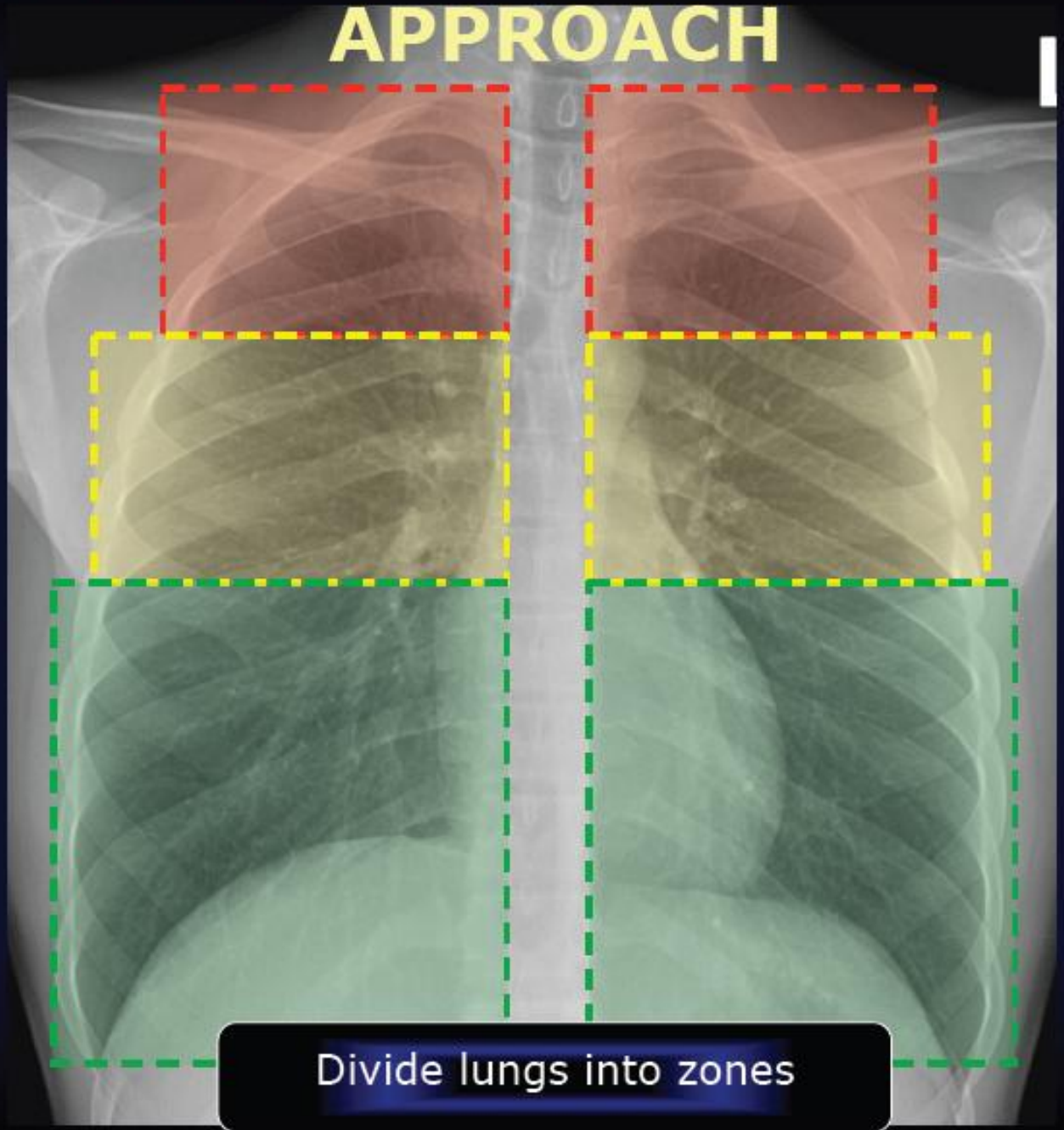
should develop systematic approach

Should memorize the normal image in his mental status

# Interpetation

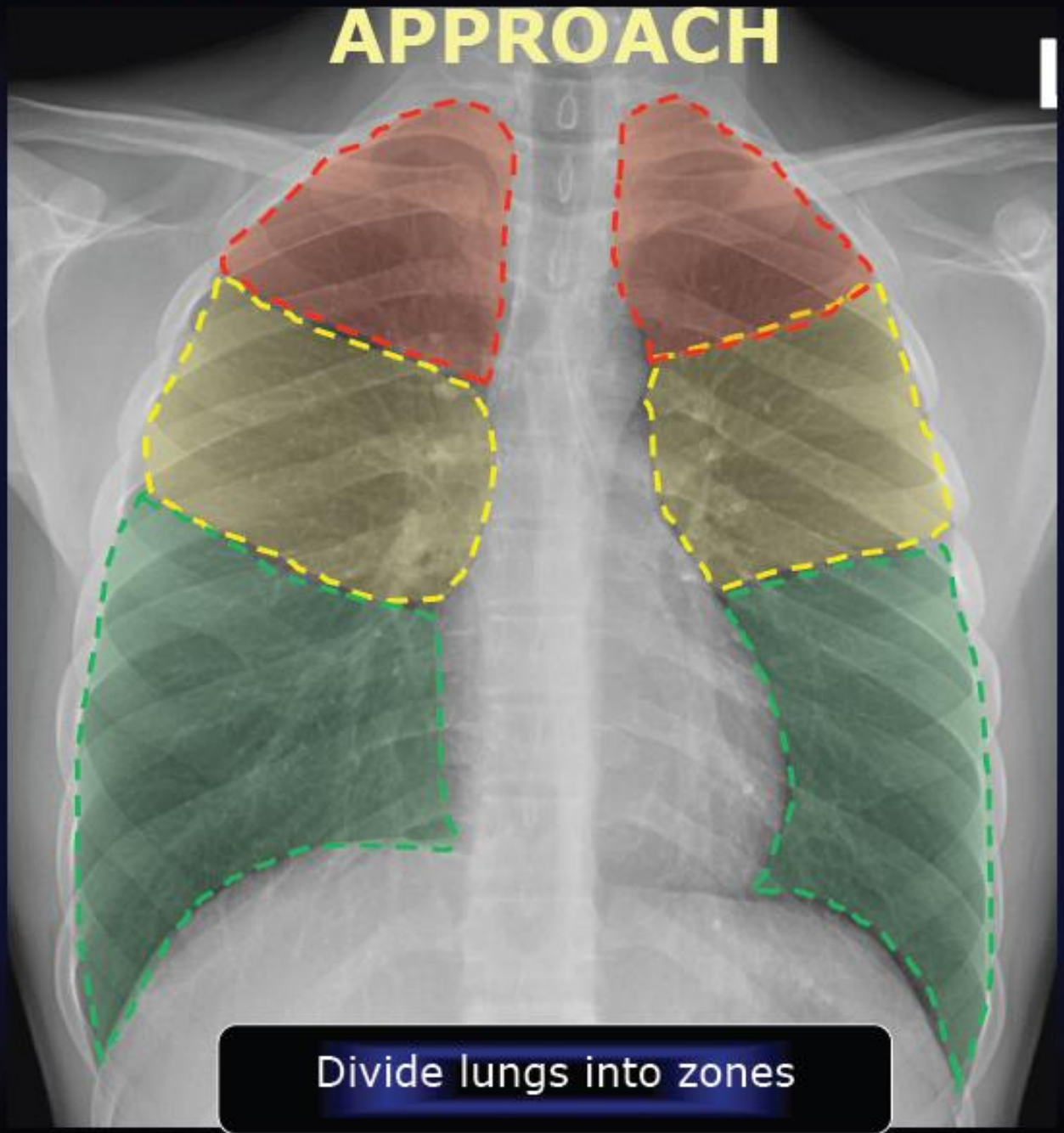
- Interpetation: compare the normal picture to the pathology

# APPROACH

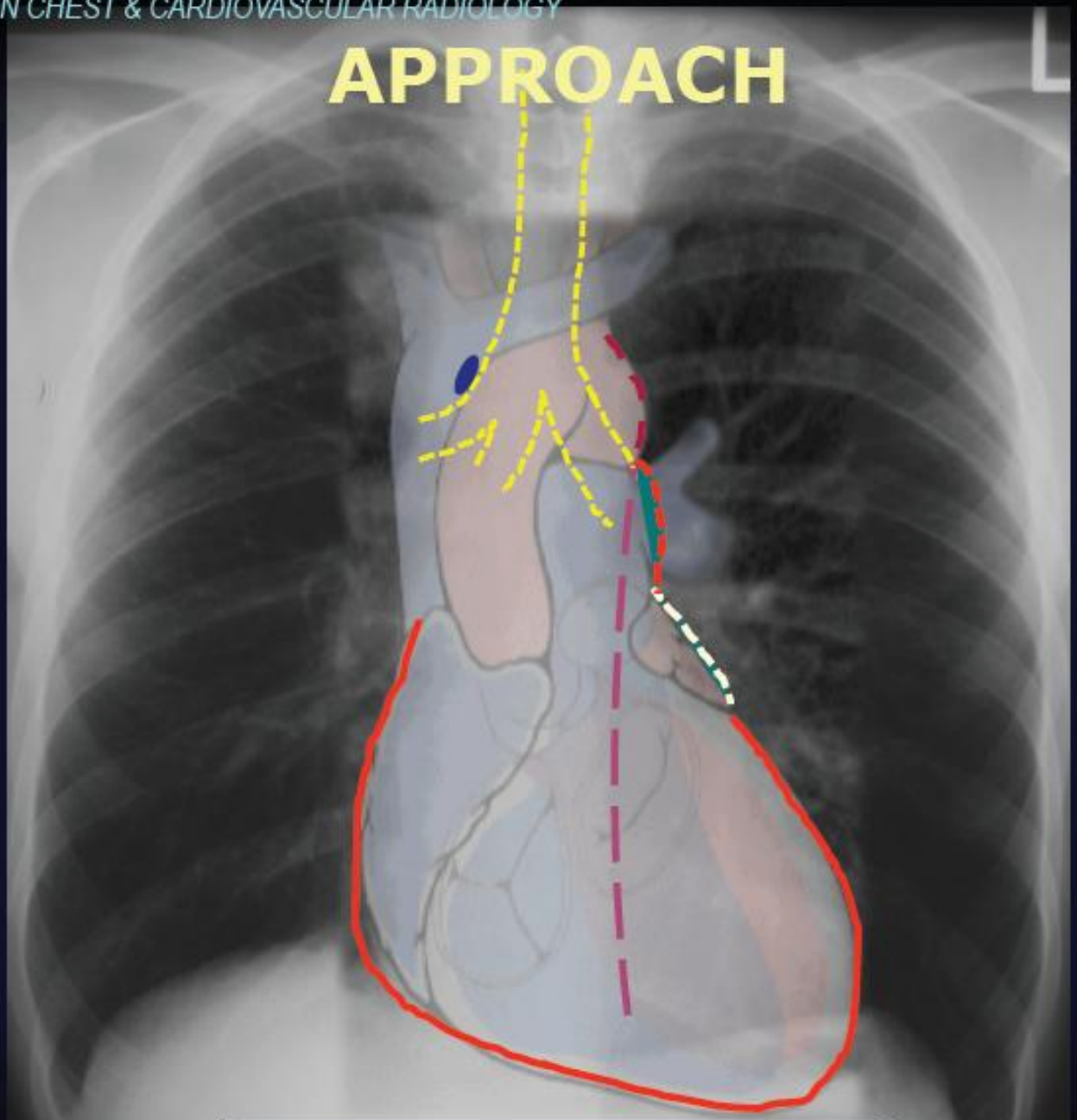


Divide lungs into zones

# APPROACH



# APPROACH



Evaluate mediastinum

# CHEST PATTERNS

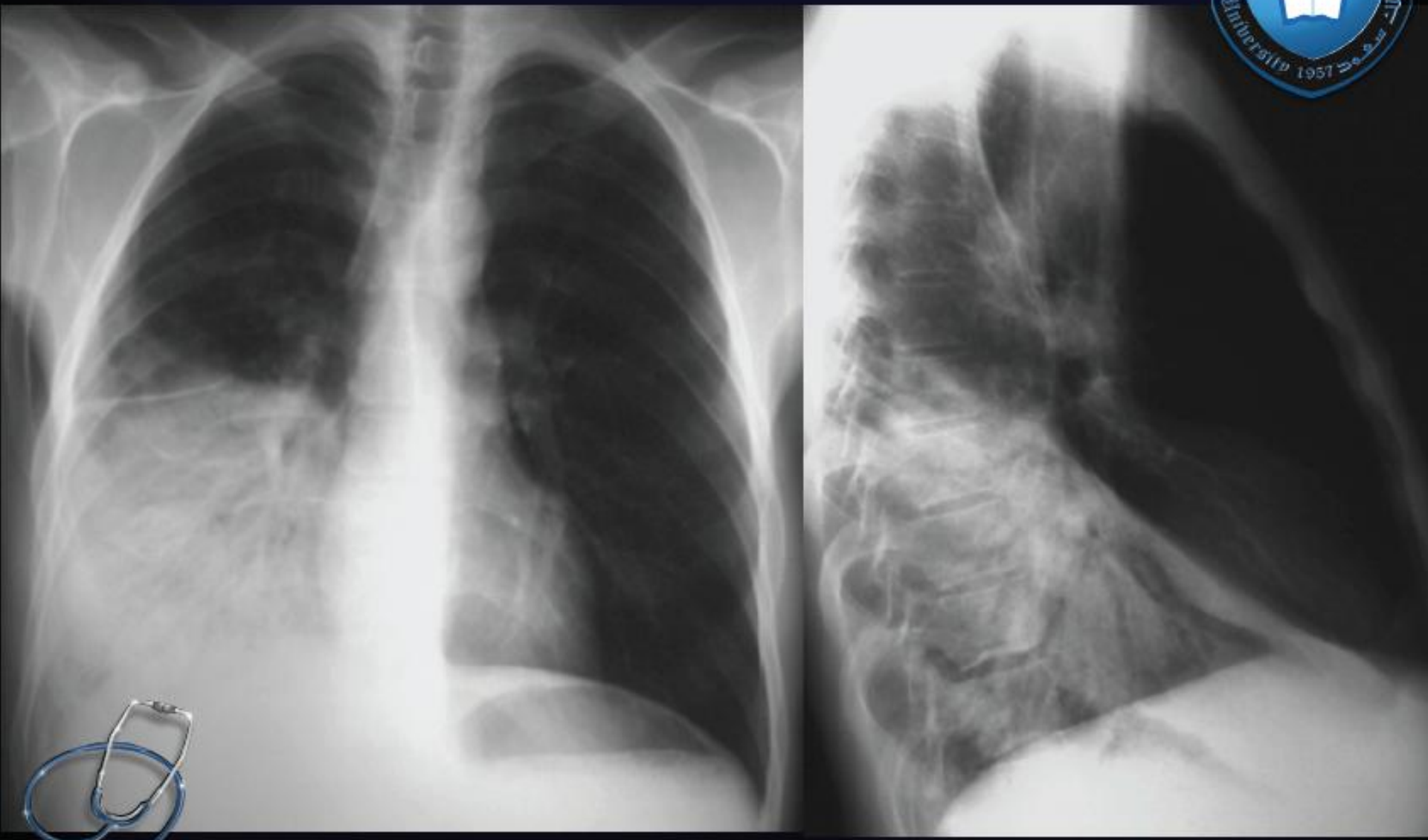
- Define the pattern of abnormality seen on the chest X-ray.
- Develop appropriate differential for such pattern recognized.
- Decrease your differential by
  - * Careful analysis of the findings
  - * Consider evaluation of previous exams
  - * Correlate with clinical and laboratory data
- Decide for the next step

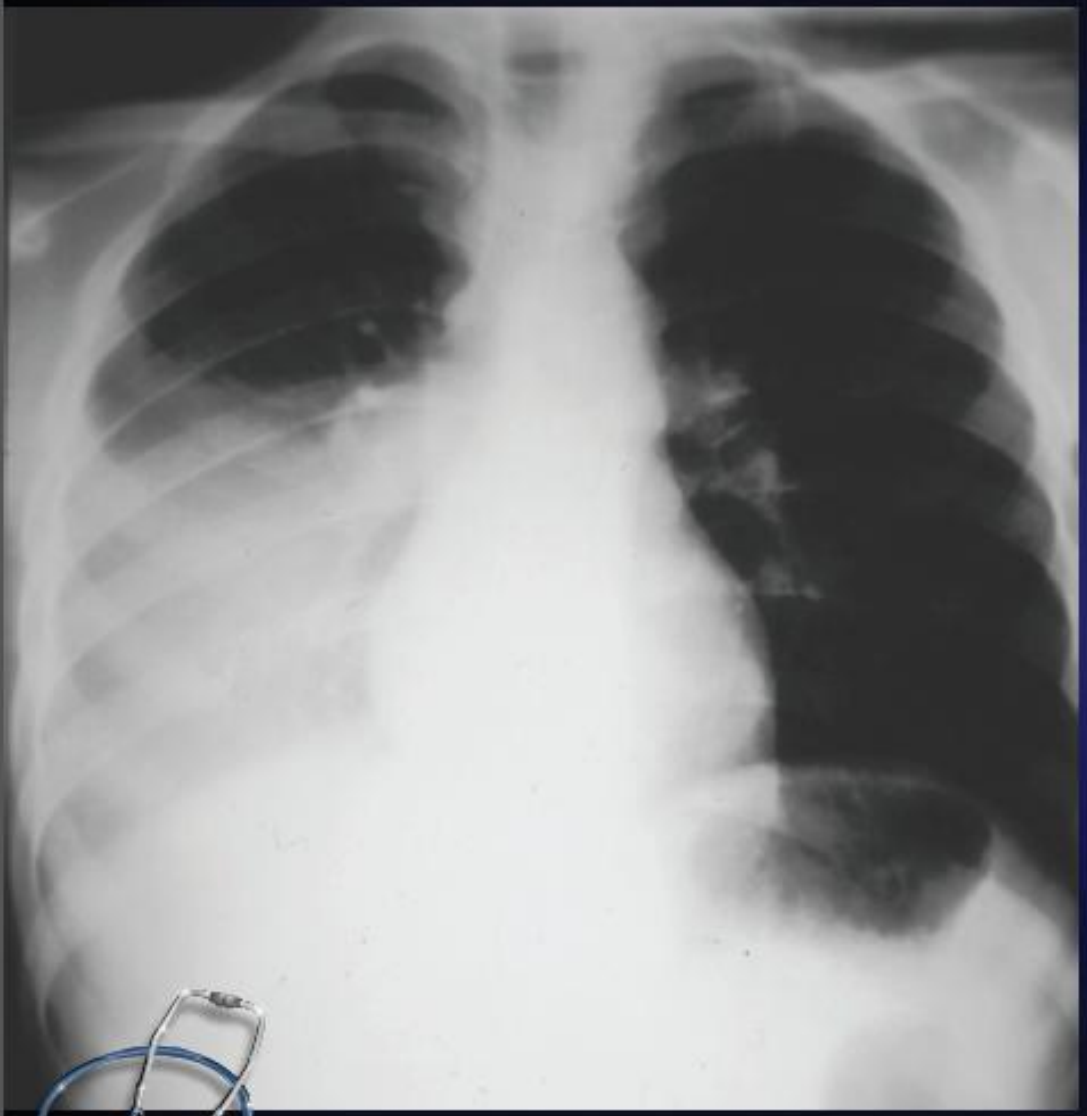
# CHEST PATTERNS

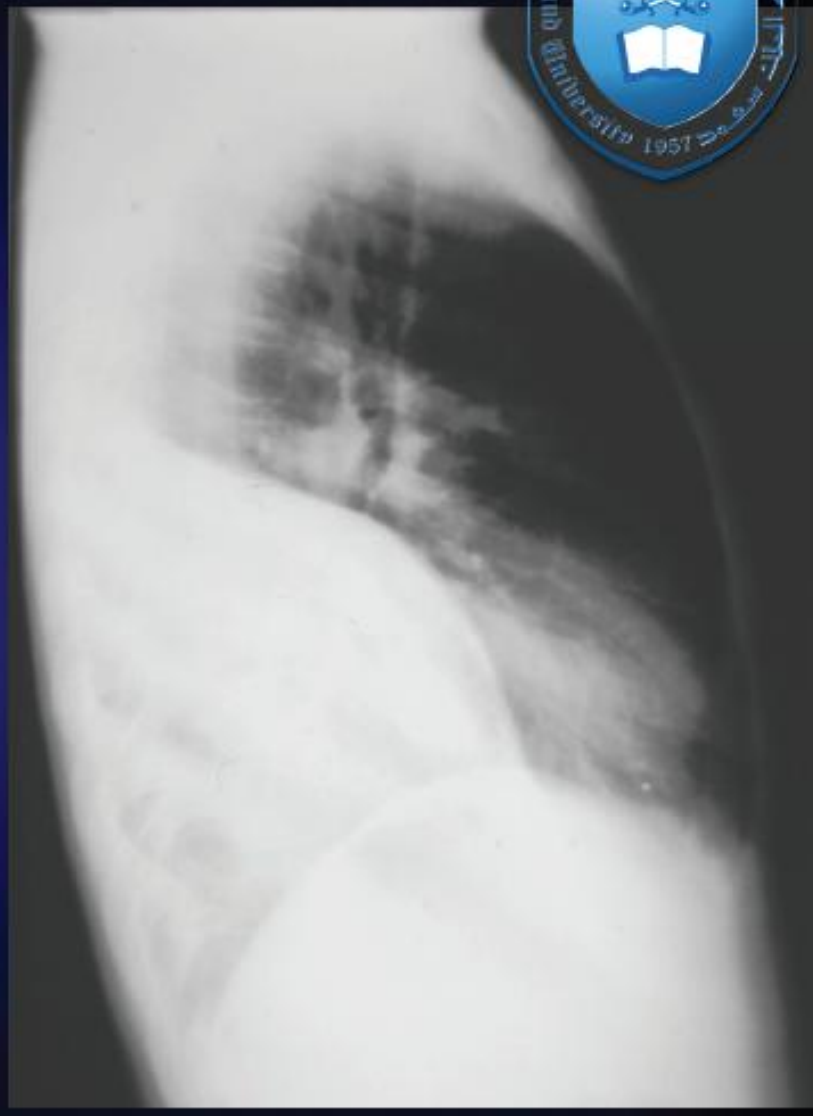
## Examples

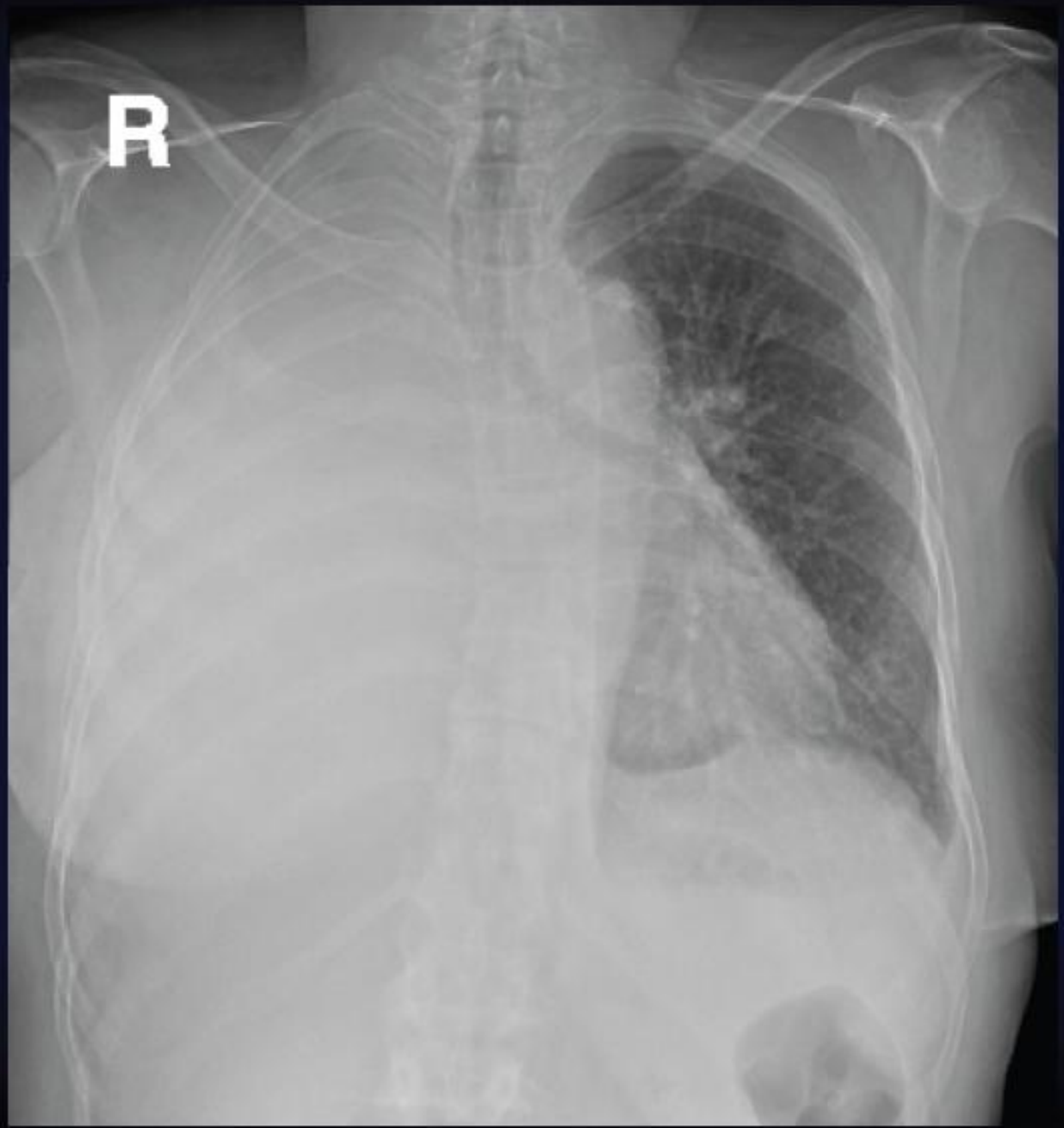
Increased Pulmonary Densities

# Adult patient presenting with cough and fever





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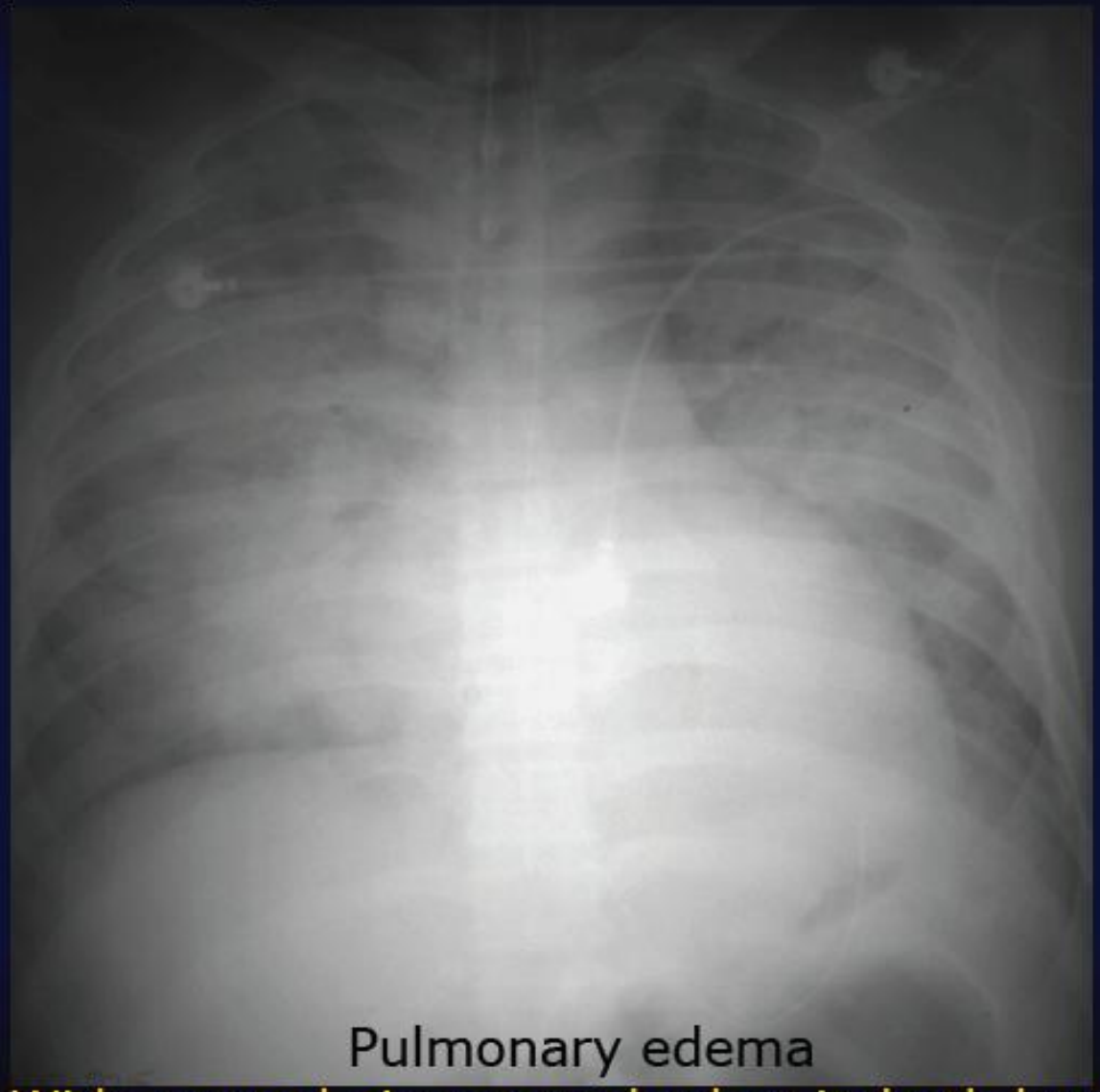
Elderly patient presenting with
dyspnea, cough and lower limbs edema. No fever



Pulmonary edema

Wide spared air space shadow in both lungs
Heart enlarged

# Pulmonary density

- White areas: indicate collapse, mass, pneumothorax
  no branching or brochogram sign
  posterior collapse of the lung
  silhouette sign: pathology of adjacent organ will appear opaque if the pathology is posterior or anterior to the heart
- Opaque right lung: presence of fluid in the pleural cavity or alveolar
- Elderly patient: bilateral opacification, cardiomegaly, heart failure, with pulmonary edema
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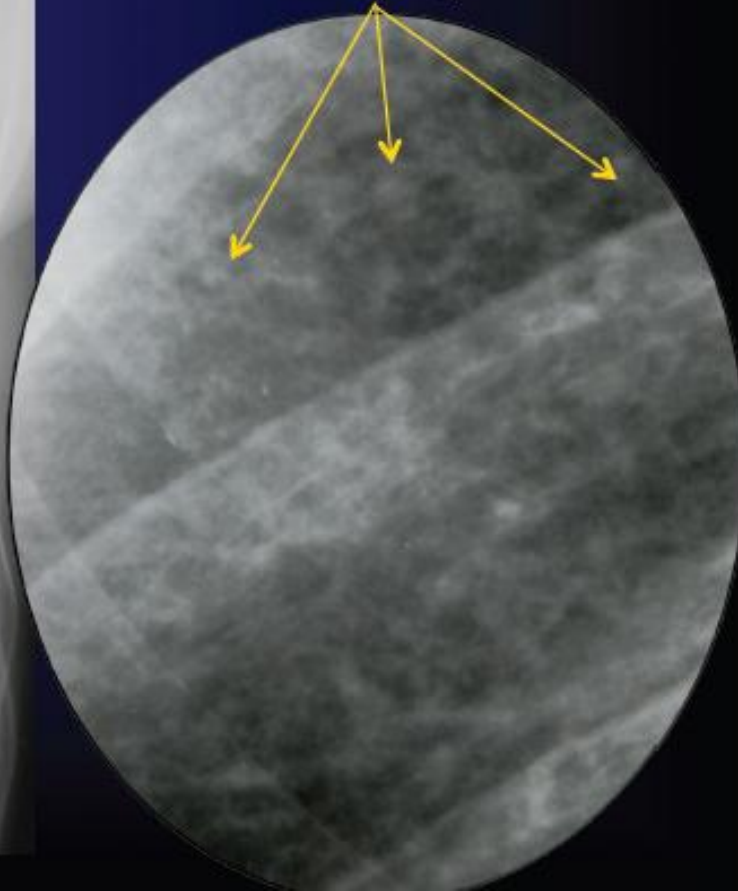
# CHEST PATTERNS

## Increased Noddular Pulmonary Densities

Adult patient presenting with cough, fever and weight loss

Pulmonary miliary TB

Diffuse miliary nodules



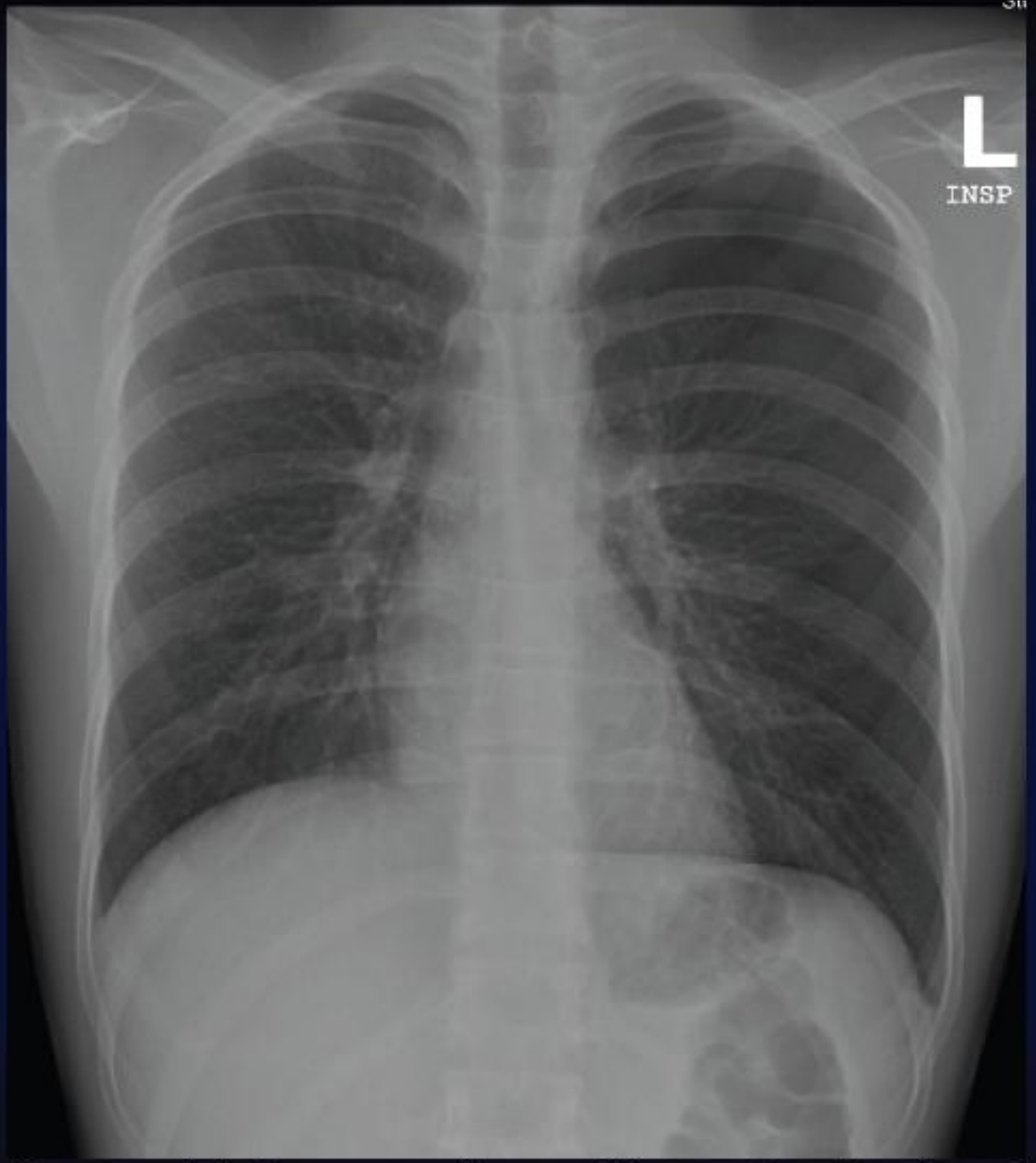
Adult female presenting with cough & weight loss

## DIFFERENTIAL DIAGNOSIS

- AVM
- Abscesses
- Hydatid cysts
- Rh. N. /WG
- Metastases

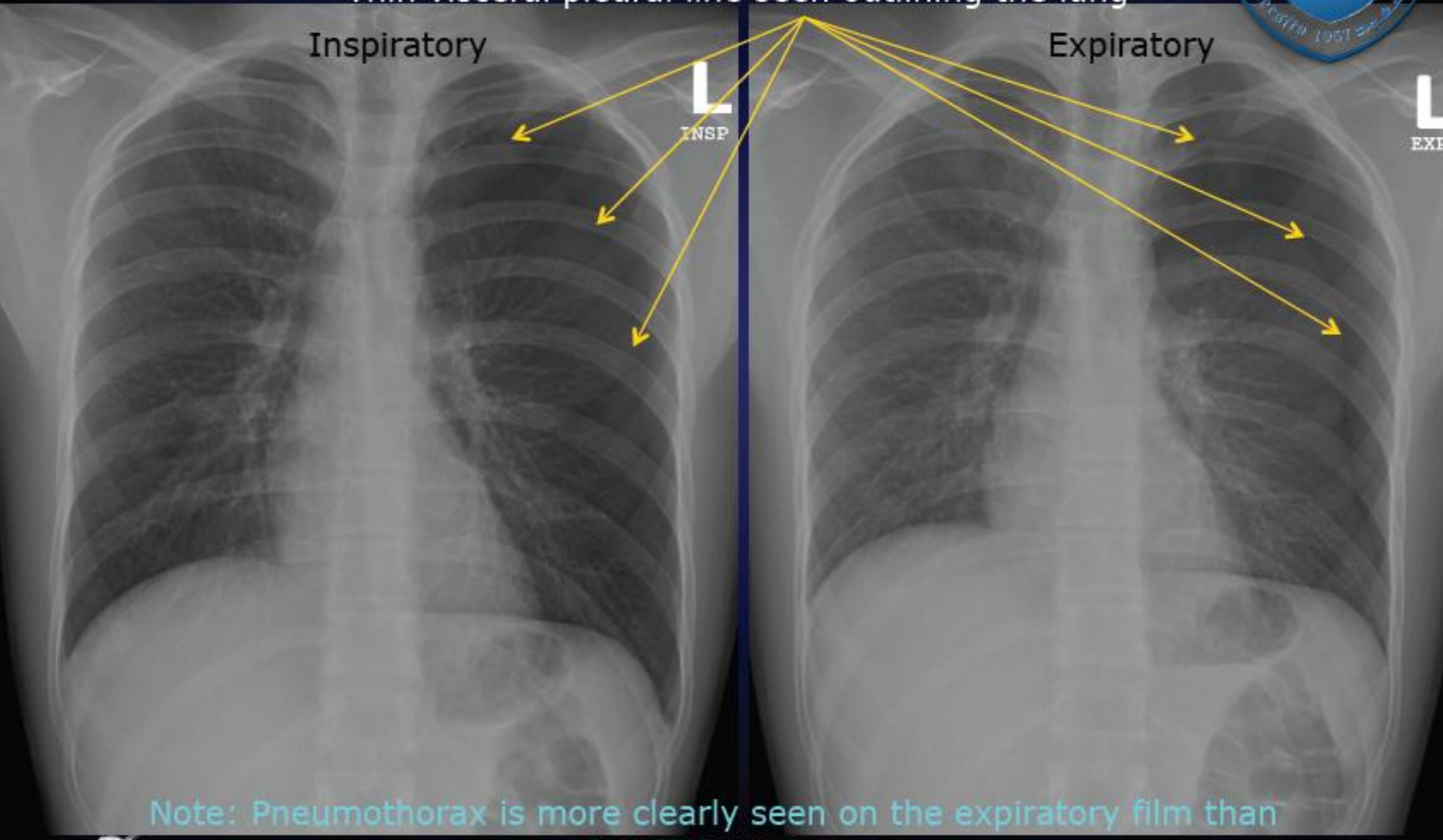
# CHEST PATTERNS

## Decreased Pulmonary Densities




Young Adult presenting with acute chest pain
Known to have bronchial asthma

Pneumothorax on the left side
Evident by increased decreased density of the periphery of the lung
No vascular marking in that region
Thin visceral pleural line seen outlining the lung

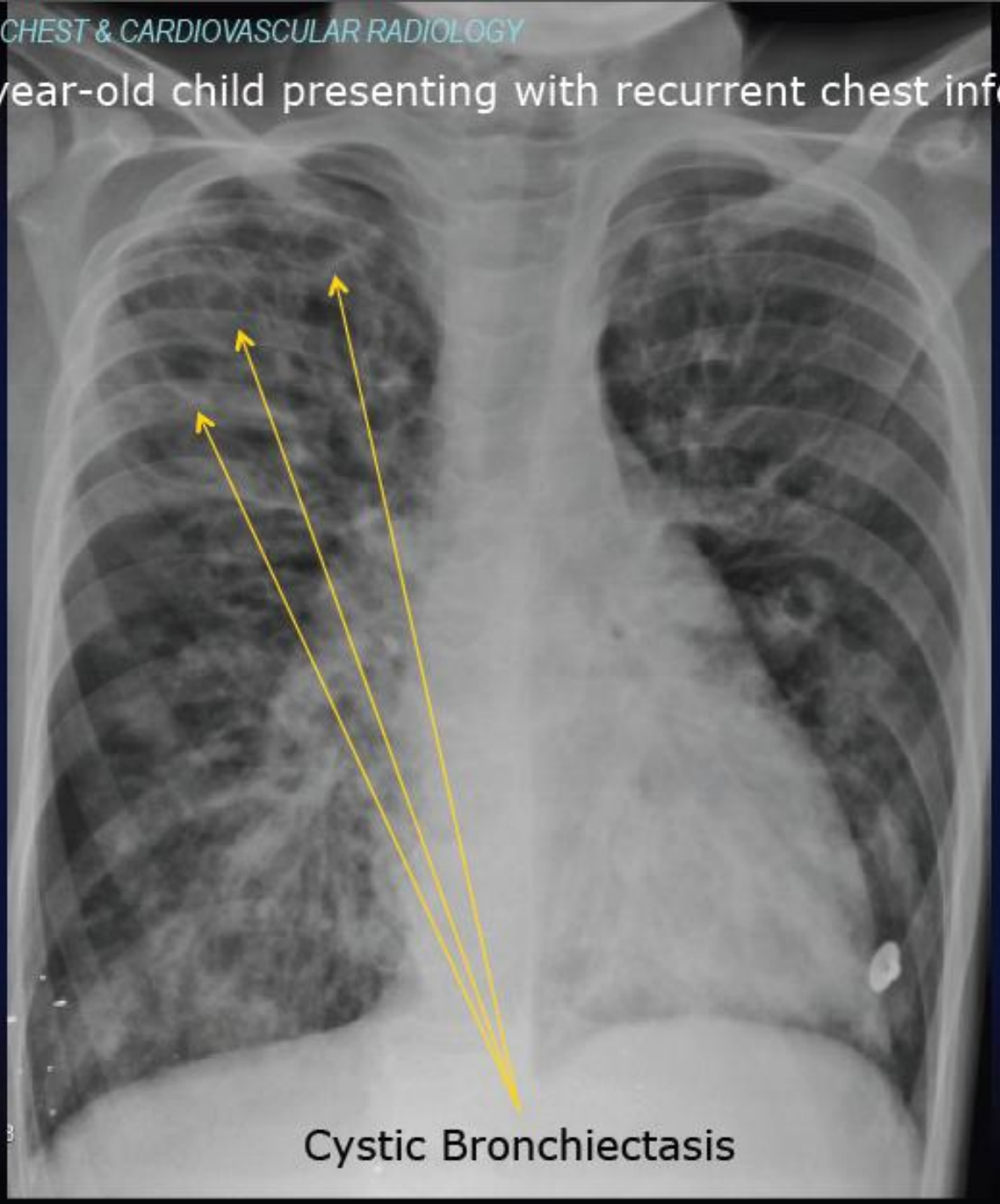


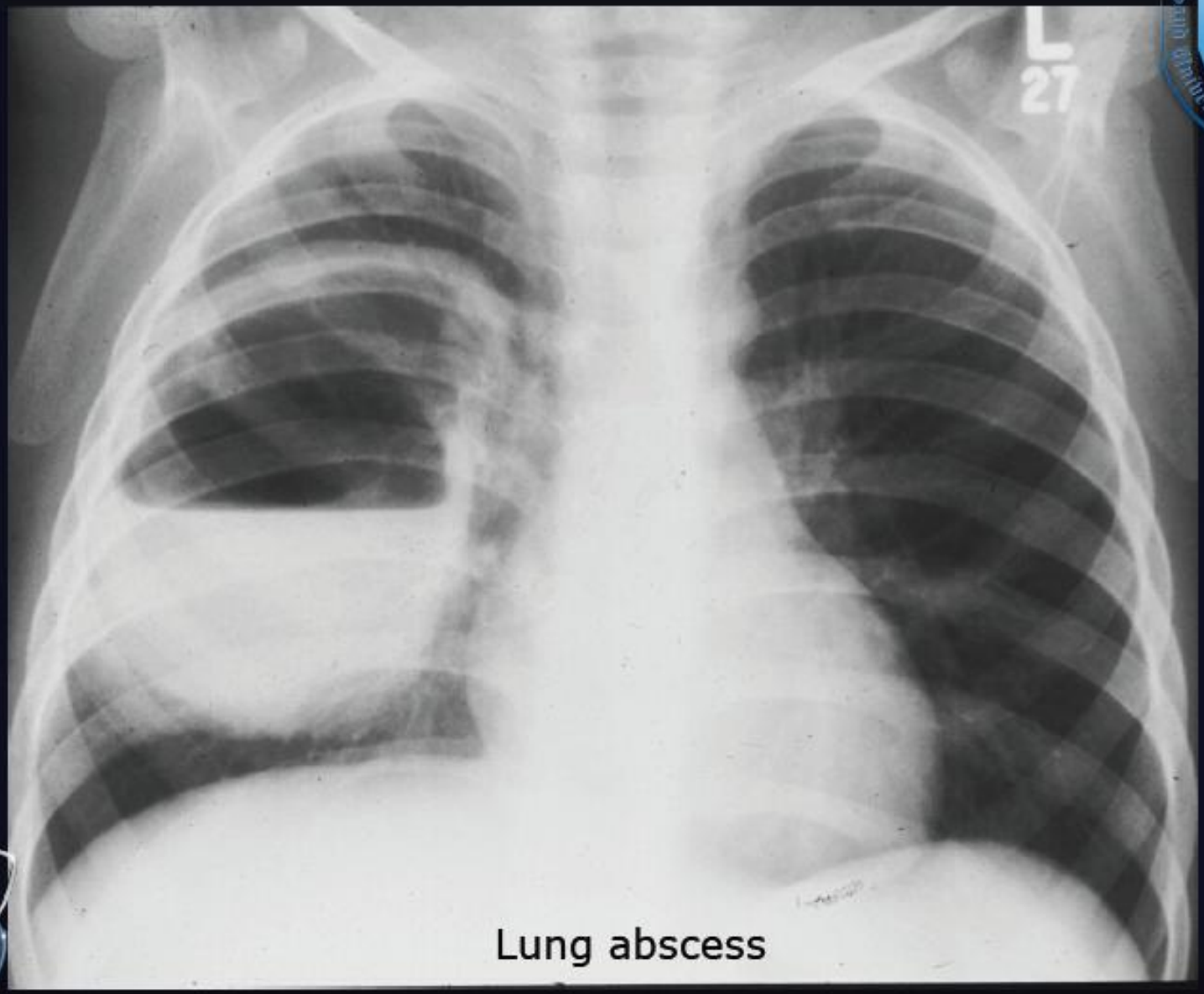

Note: Pneumothorax is more clearly seen on the expiratory film than inspiratory one

# CHEST PATTERNS

## Cavitary/Cystic pulmonic lesions

# 12 year-old child presenting with recurrent chest infection



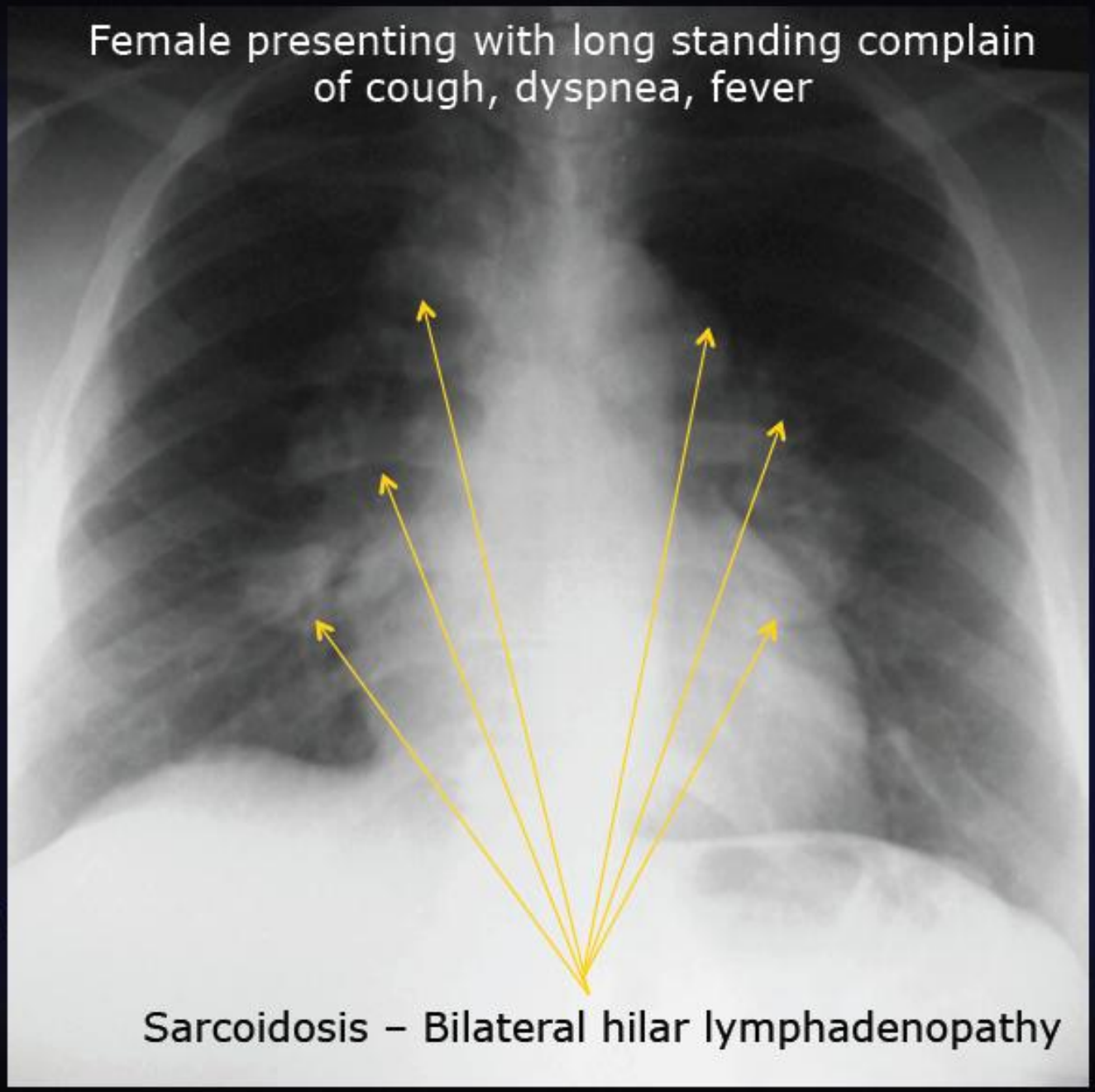



Lung abscess

# CHEST PATTERNS

## Mediastinal Masses

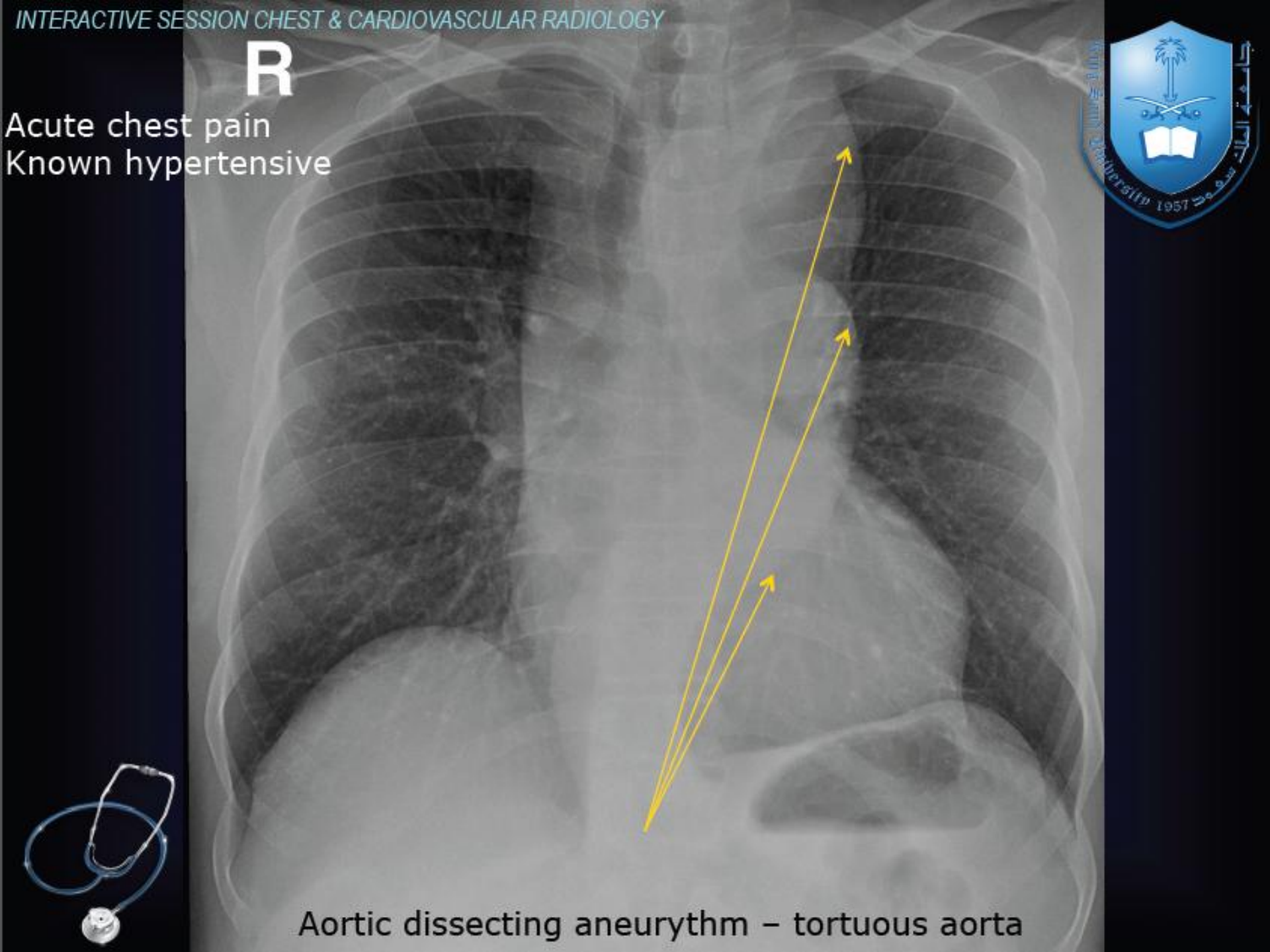
Female presenting with long standing complain of cough, dyspnea, fever



Sarcoidosis – Bilateral hilar lymphadenopathy

R

Acute chest pain
Known hypertensive



Aortic dissecting aneurythm – tortuous aorta

# DONE !