



Chest X-ray Interpretation

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Disclosure

Joseph S. Alpert, MD, FACC

Consultant Fees/Honoraria

Bayer HealthCare; Boehringer Ingelheim; Daiichi Sankyo, Inc.; Johnson and Johnson; MedIQ; Roche; sanofi-aventis U.S. Inc.; Servier Pharmaceuticals, ZS pharmaceuticals, Roche.

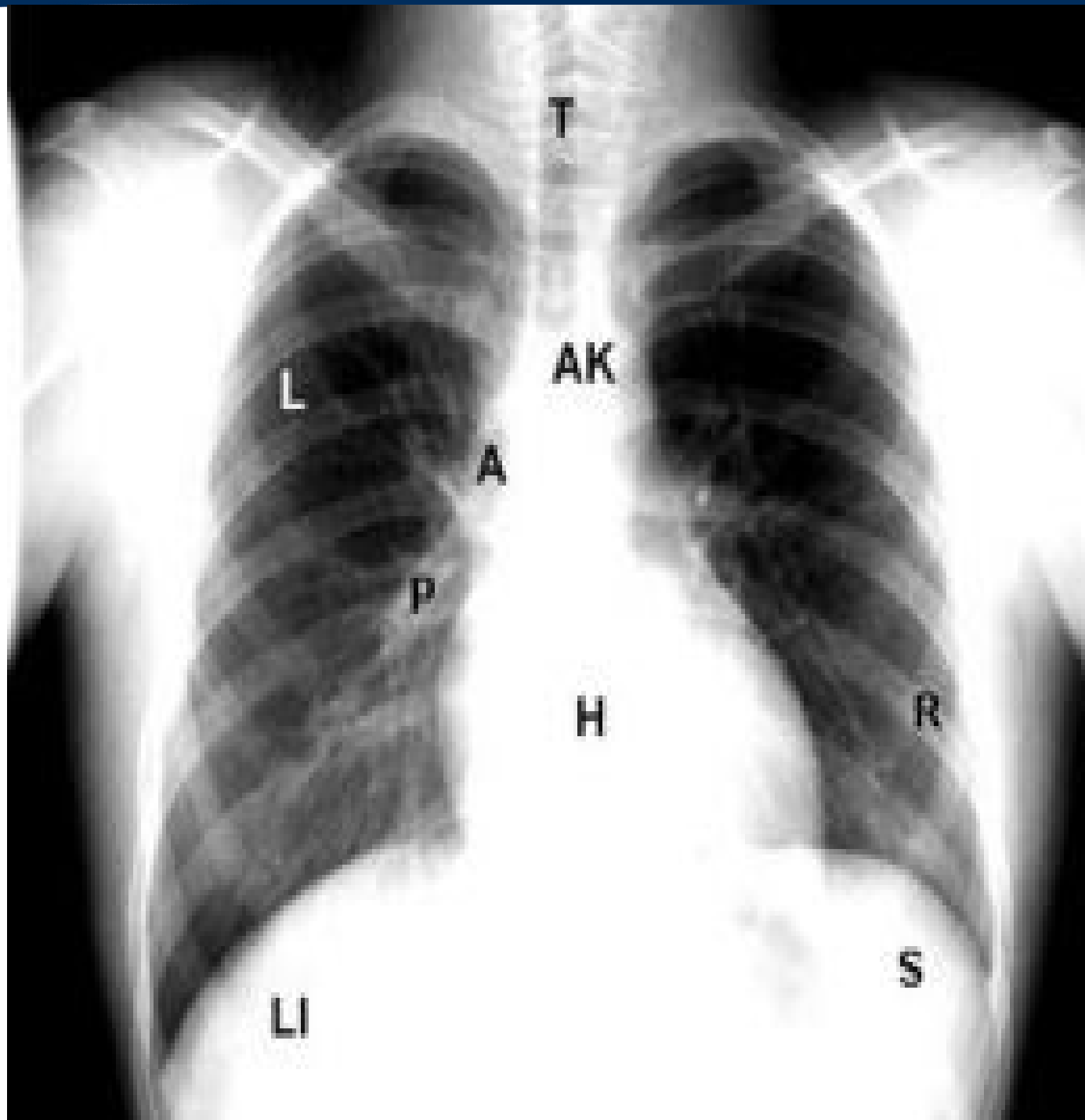
Data Safety Monitoring Board

Bayer HealthCare; Duke Clinical Research Institute; Janssen Pharmaceuticals, Inc.; TIMI Clinical Research Group, Novo Nordisk.



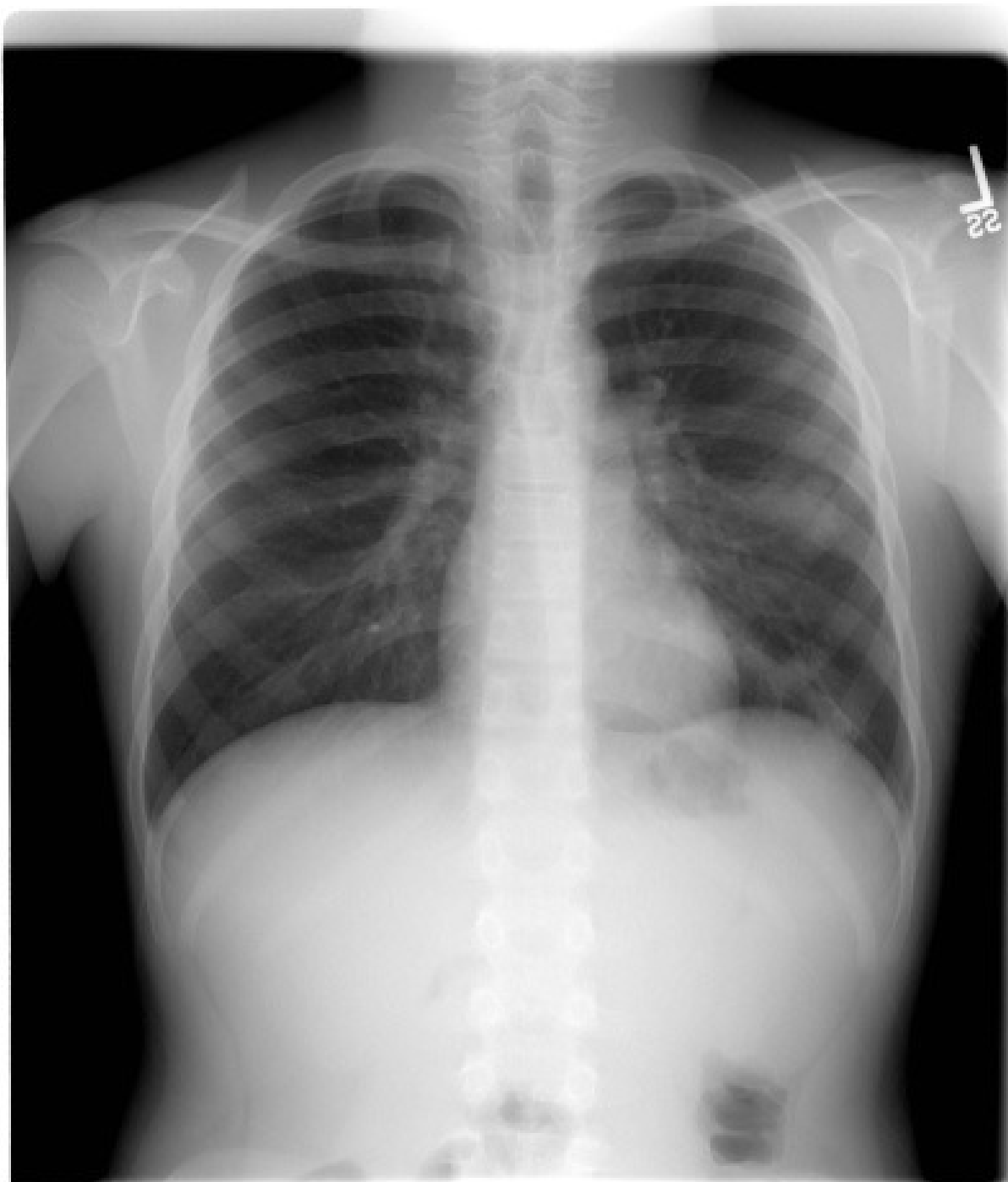
The Chest X-Ray: Principles of Reading

- 1. The bones**
- 2. The lungs**
- 3. The heart**
- 4. The vessels**
- 5. Miscellaneous such as pacemakers, catheters, etc.**





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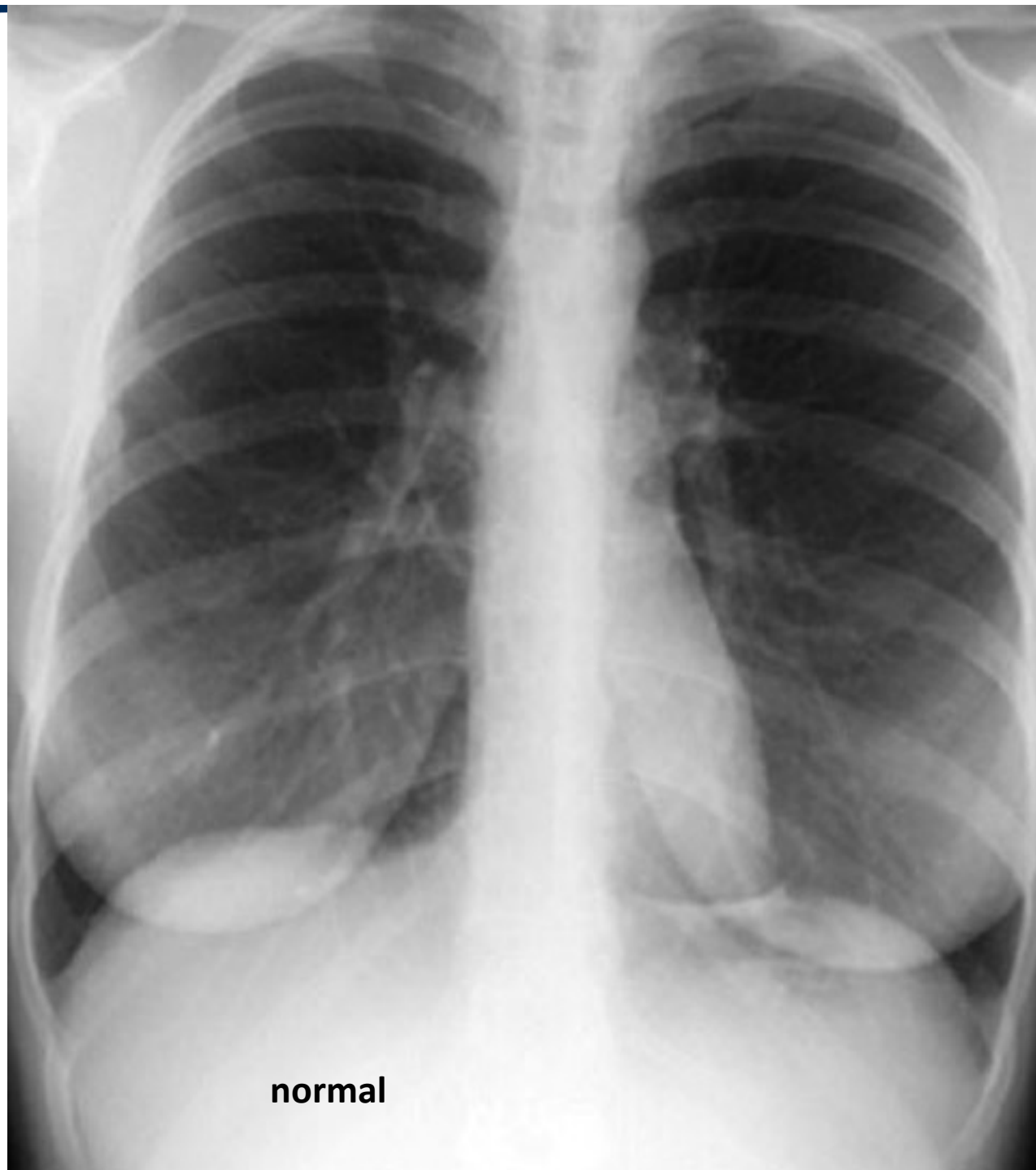
**Normal
chest
xray**



Is this lateral chest x-ray from the same patient as the last film—the PA film?



- 1. Yes, it is the same patient**
- 2. No, it is not the same patient**
- 3. Yes, it is the same patient but a different view**
- 4. No, it is not the same patient; this patient is a female.**



normal



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- 1. Is the Aortic knob enlarged?**
- 2. Is the heart enlarged?**
- 3. Are the lungs congested ?**



A. Is the aortic knob enlarged?

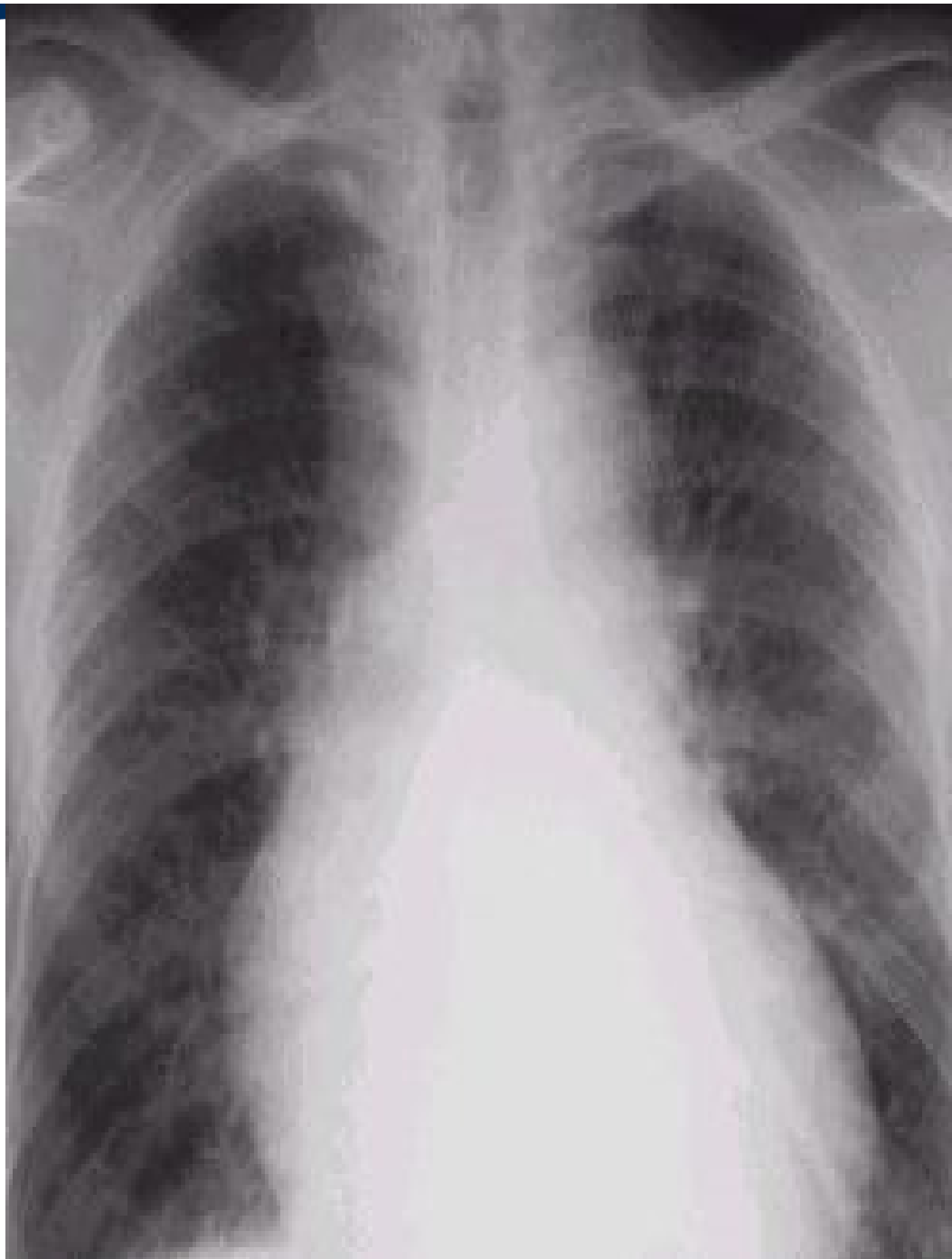
1. yes 2. No

B. Is the heart enlarged?

1. Yes 2. No

C. Are the lungs congested?

1. Yes 2. No



**Marked
cardiomegaly:
Which
heart disease
could cause
the enlarged
heart?**



- A. Ischemic cardiomyopathy**
- B. Constrictive pericarditis**
- C. Aortic stenosis**
- D. Atrial septal defect**
- E. Atrial fibrillation**

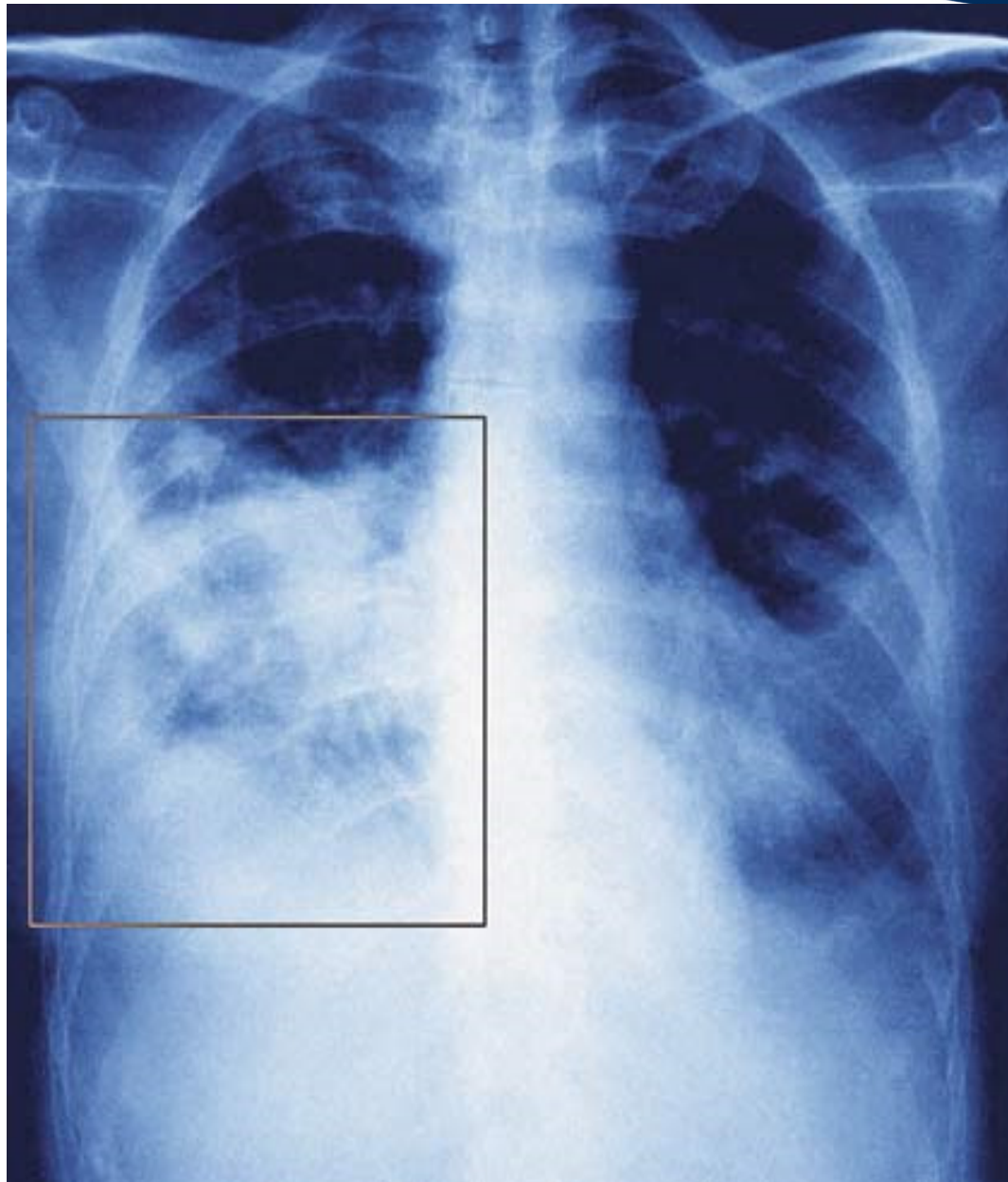


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PLEURAL EFFUSION PERICARDIAL EFFUSION



**Right and left pleural
effusion**





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**What is
abnormal
in this
chest
xray?**



This patient does not have one of the following diseases. Which is the wrong one?

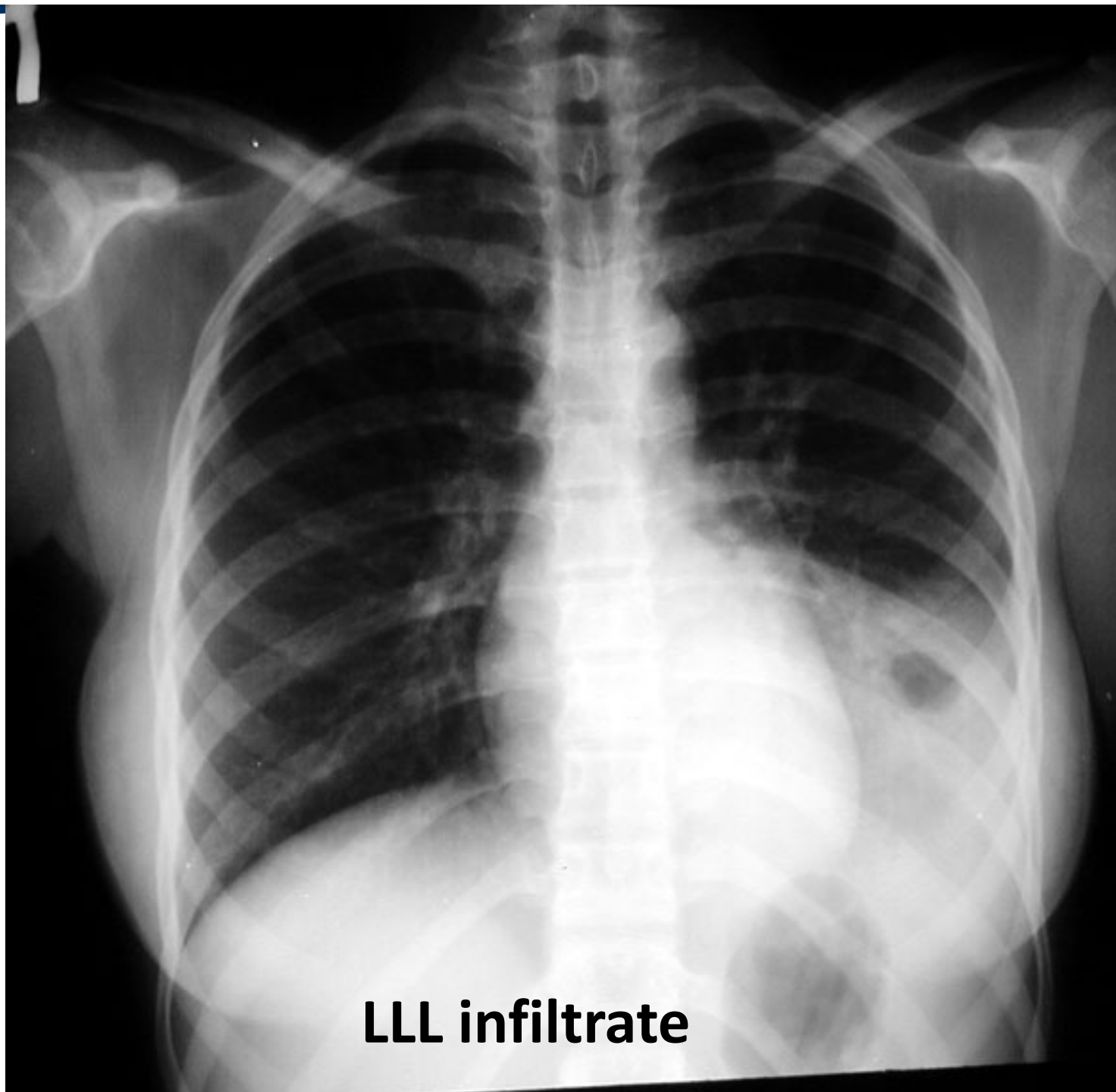


- 1. Large pericardial effusion**
- 2. Dilated cardiomyopathy**
- 3. End stage aortic insufficiency**
- 4. Ischemic cardiomyopathy with CHF**
- 5. Athlete's heart**

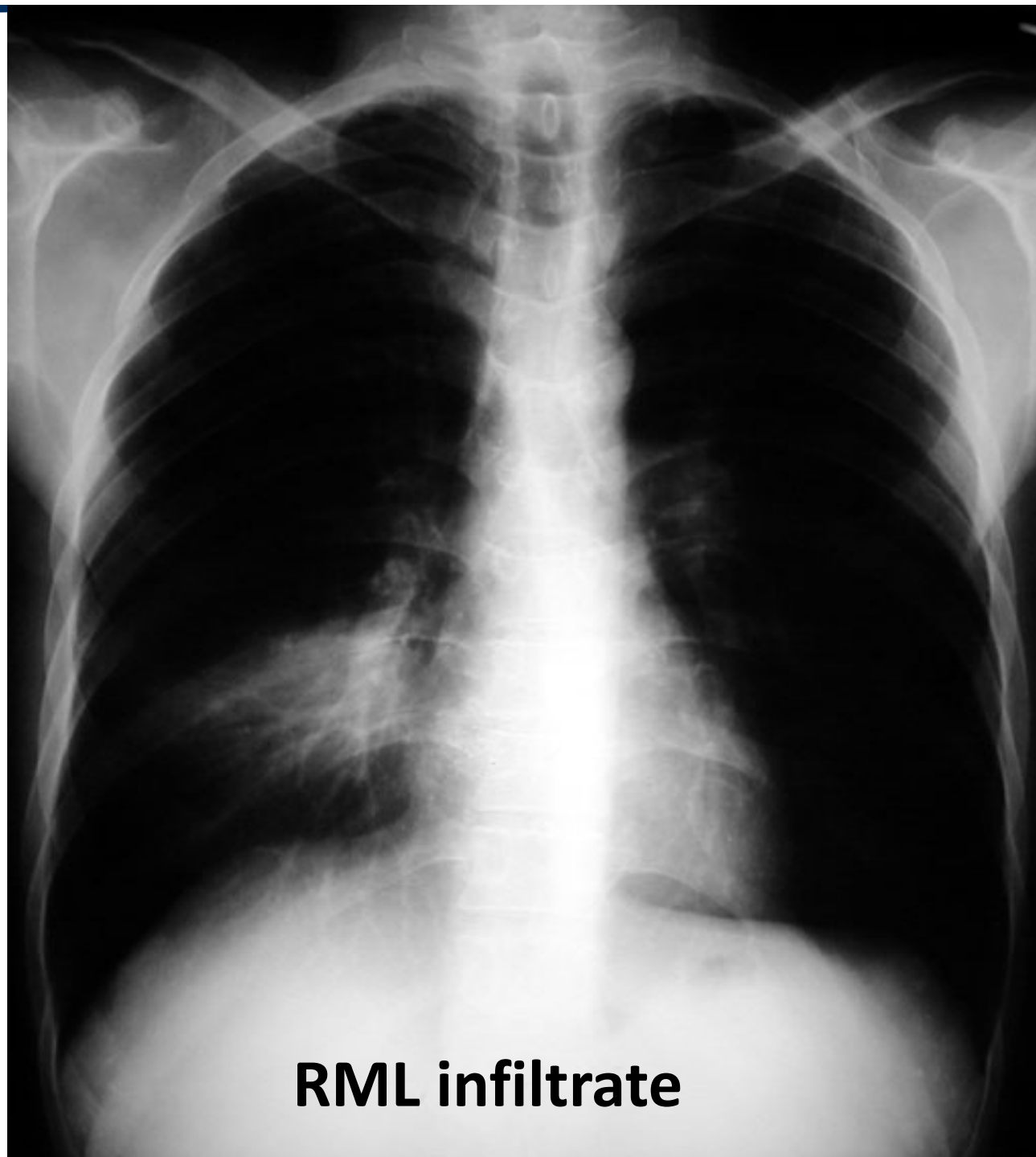


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PNEUMONIA LUNG ABCESS



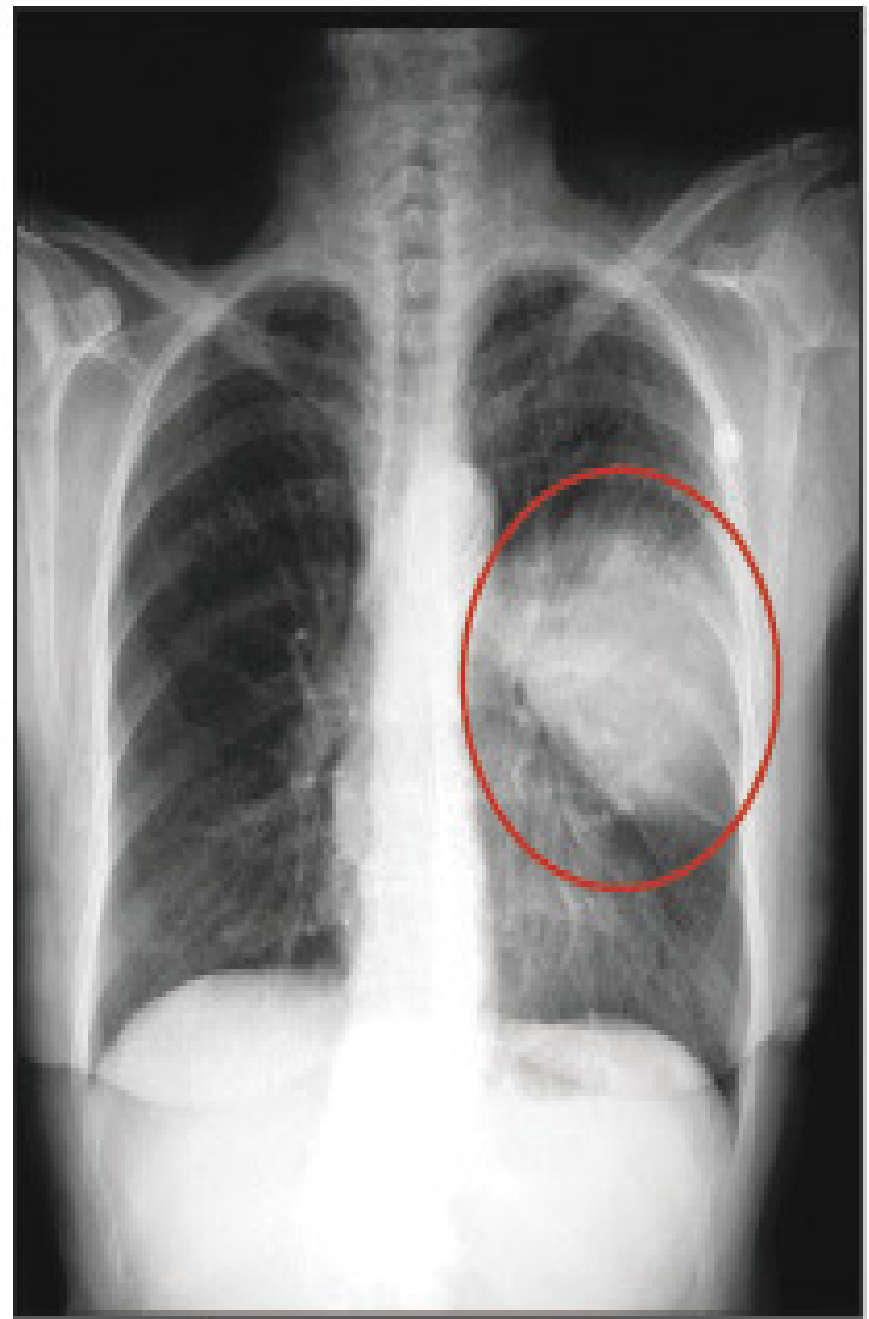
LLL infiltrate



RML infiltrate



healthy lungs



lungs of a patient with pneumonia



**Pneumonia and pleural
Effusion, right sided**

A black and white chest X-ray showing the thoracic cavity. The right lung (on the left side of the image) is mostly obscured by a large, dense, white area representing a pleural effusion. The left lung (on the right side of the image) shows some consolidation in the lower lobe, consistent with pneumonia. The heart and mediastinal structures are visible in the center. The date '11-13-74' is handwritten in the bottom right corner of the X-ray.



**Pneumonia
bilateral;
? of CHF
as well.**

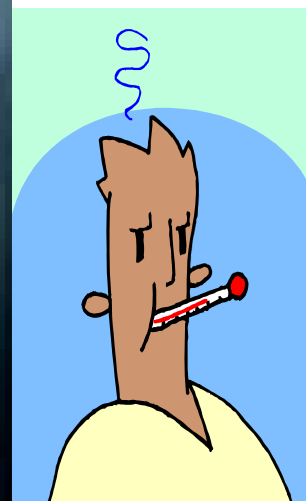


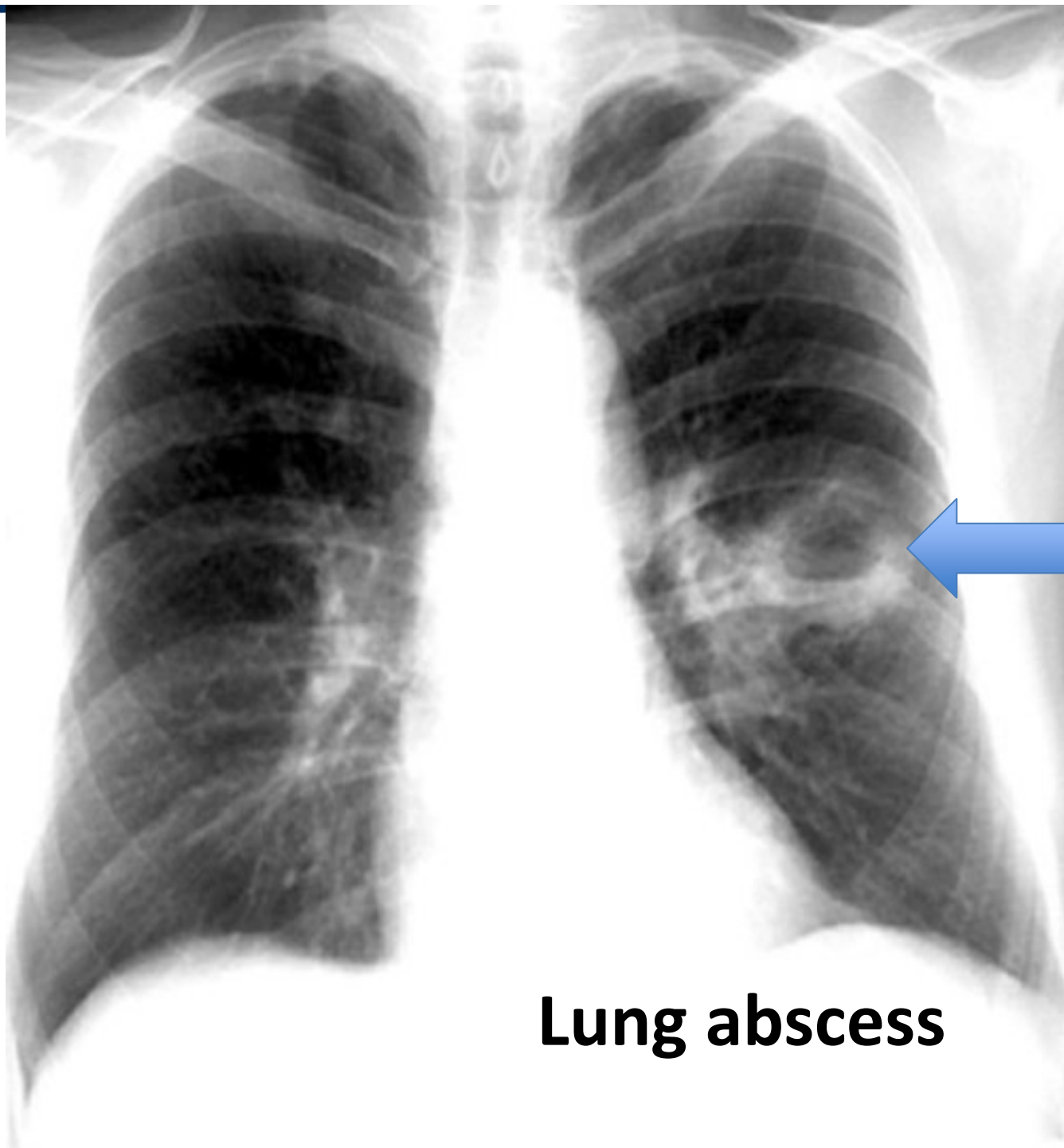


TB



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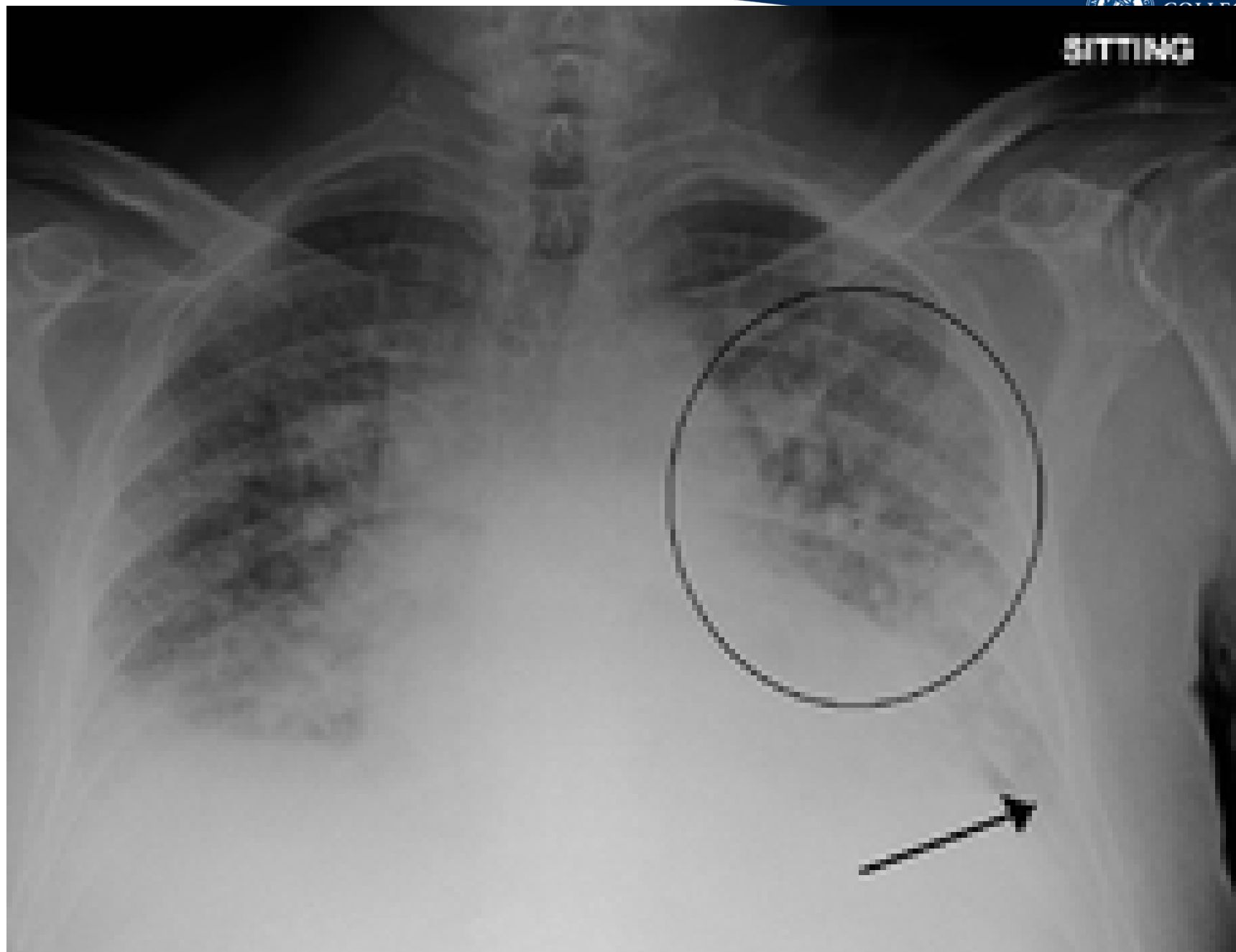
Lung abscess



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PULMONARY EDEMA

SITTING





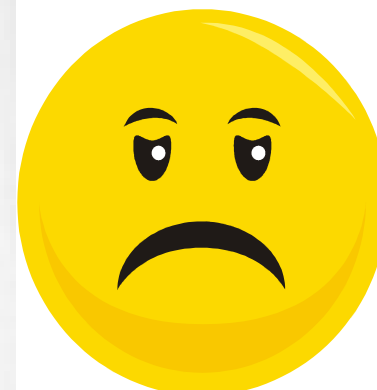
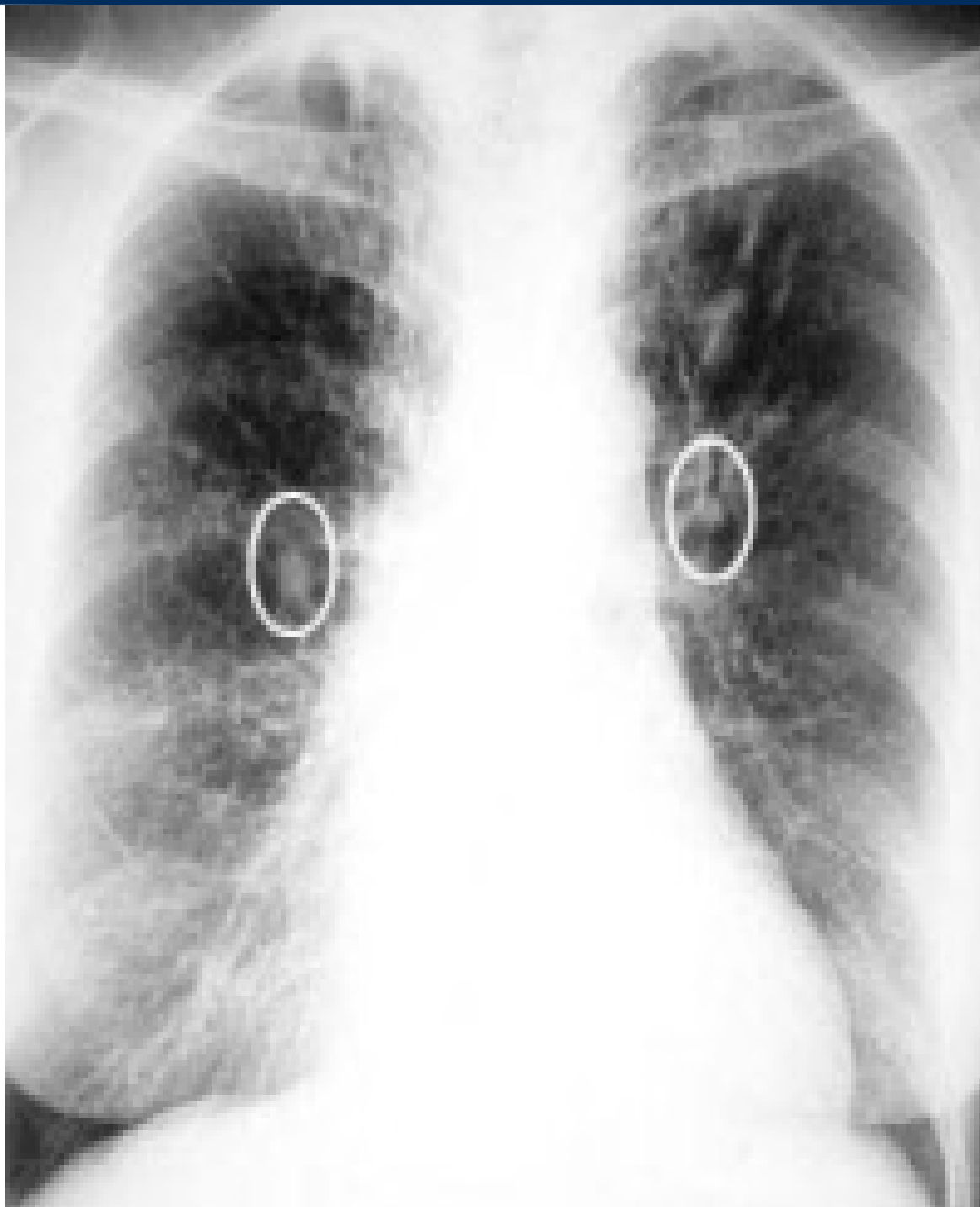
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CANCERS – LUNG AND METASTATIC



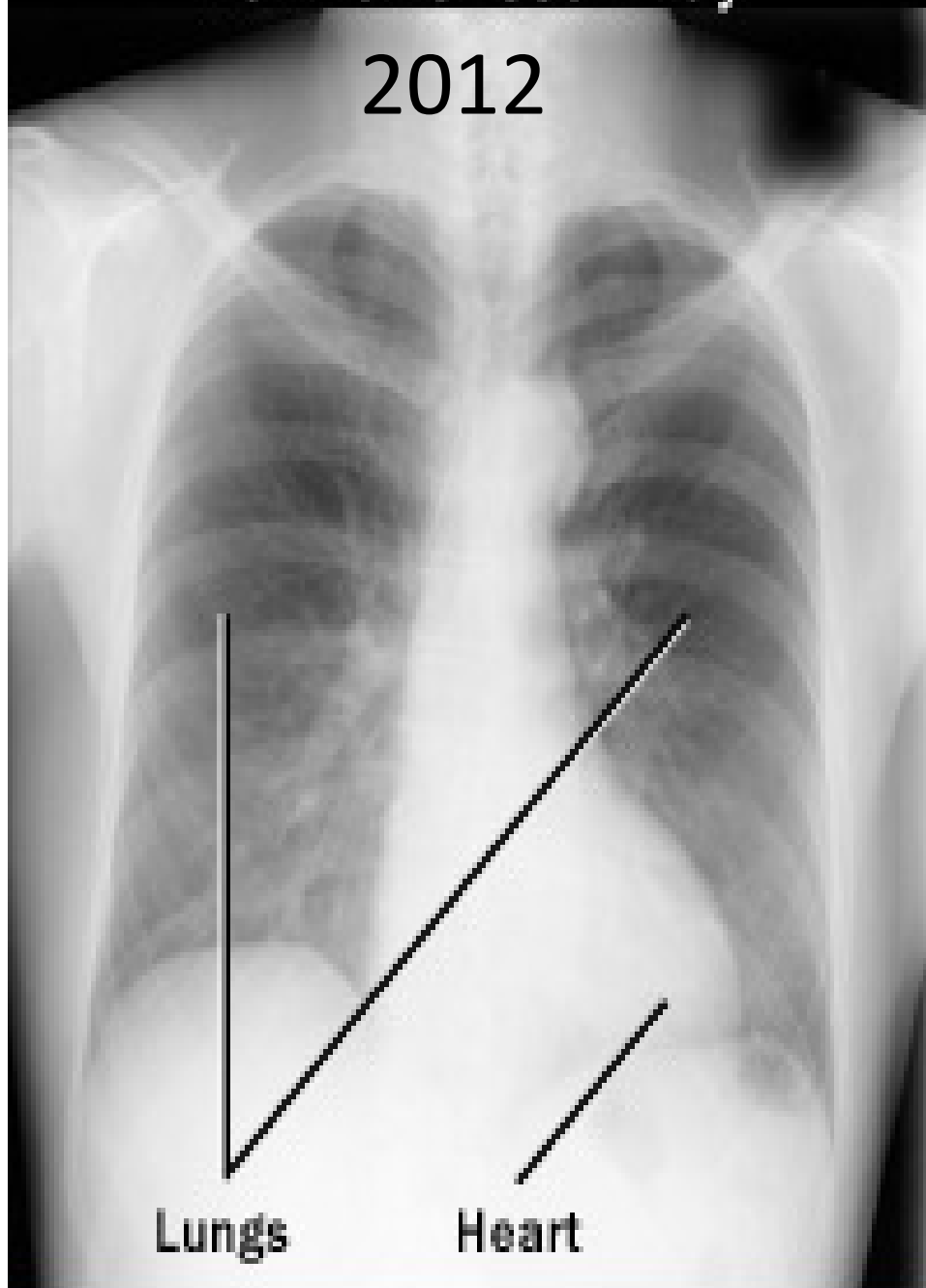
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**Lung
cancer**



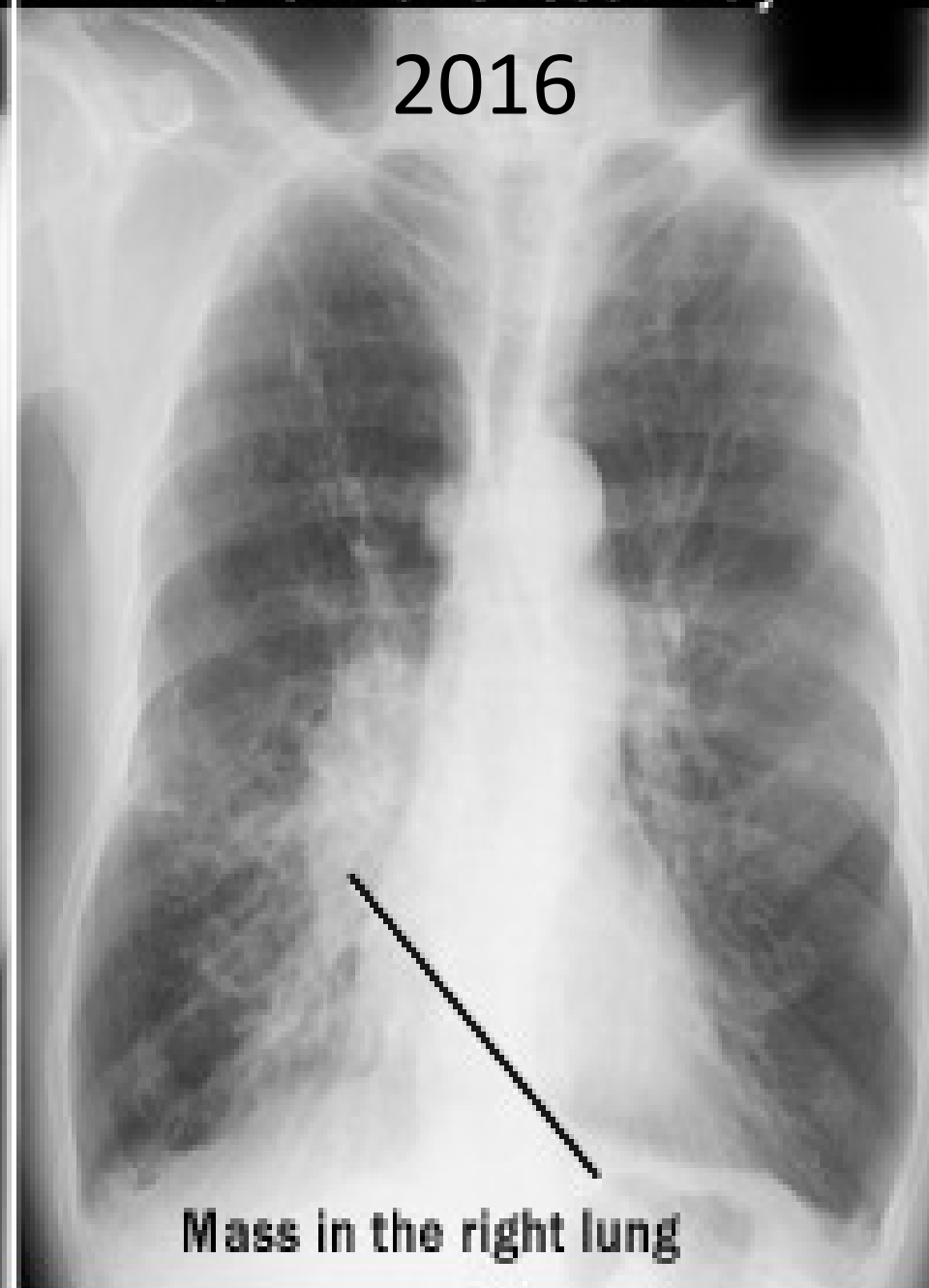
Normal chest X-ray

2012



Abnormal chest X-ray

2016







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COPD

COPD



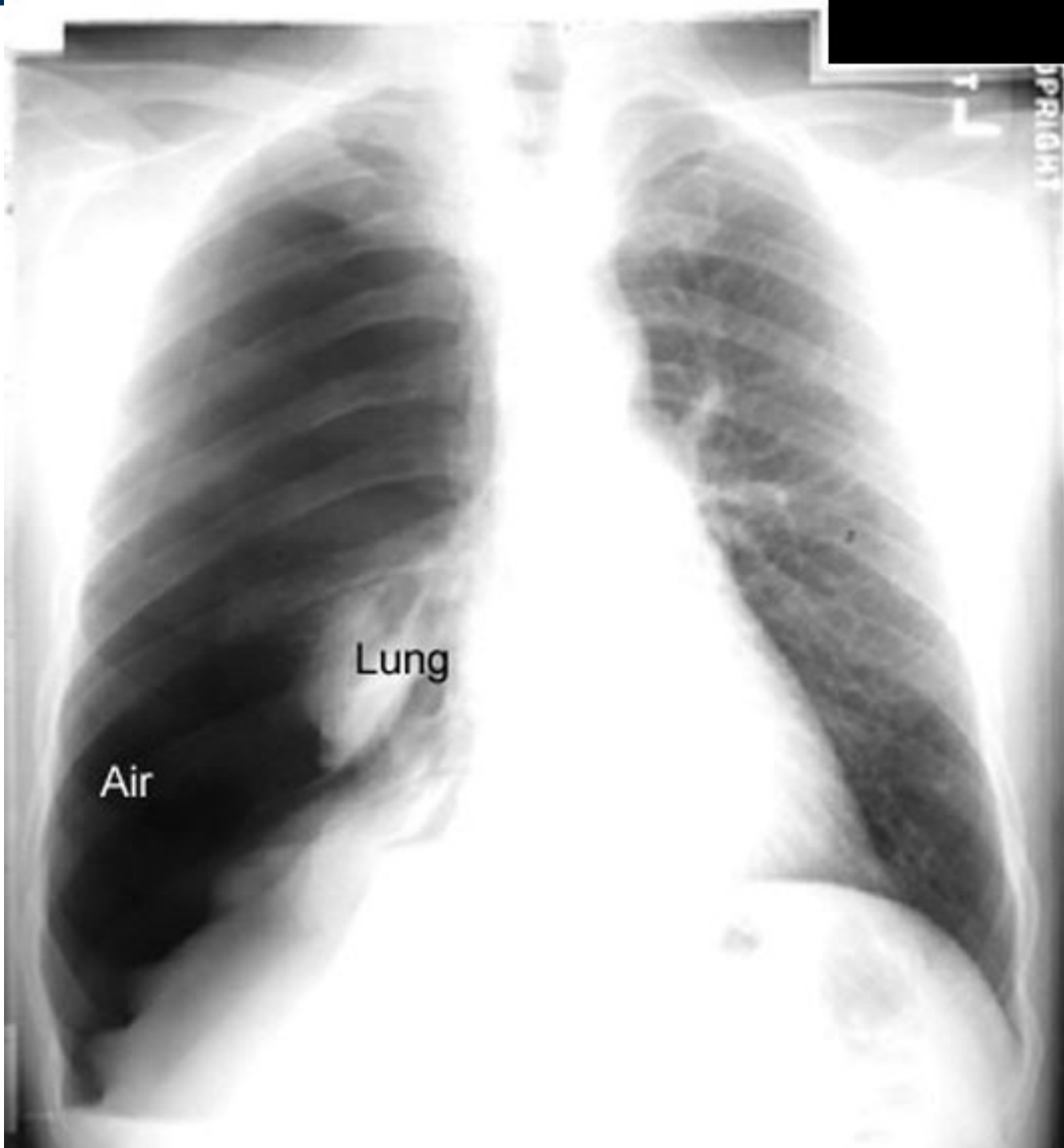
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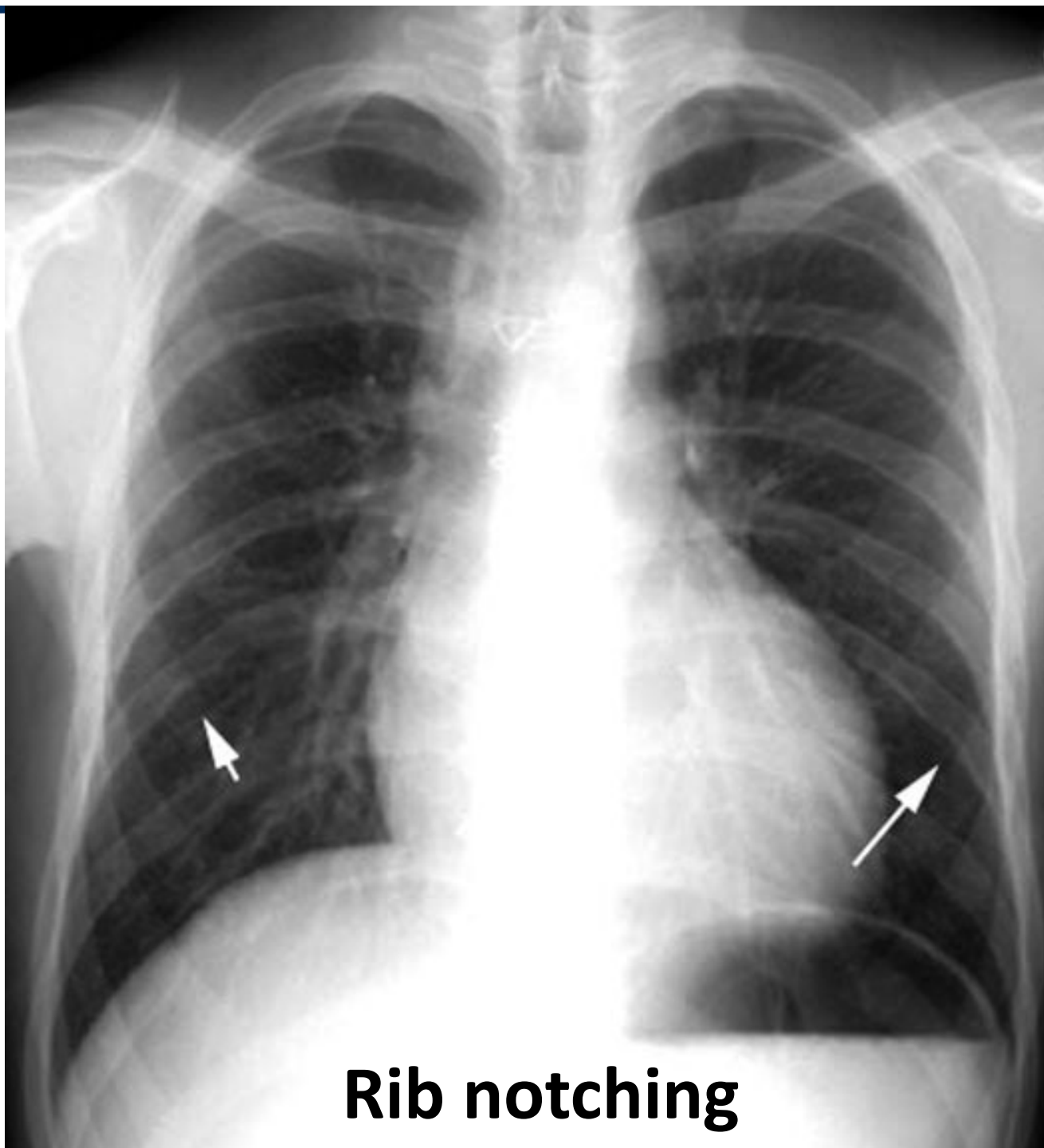
PNEUMOTHORAX



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RIB NOTCHING – WHAT IS THE DIAGNOSIS?



**What
is
the
diagnosis?**

Rib notching



- 1. Dissection of the aorta**
- 2. Acute myocardial infarction**
- 3. Coarctation of the aorta**
- 4. Mitral stenosis**
- 5. Constrictive pericarditis**



ANEURYSMS – DISSECTING AND ATHEROSCLEROTIC



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Dissection of the Aorta





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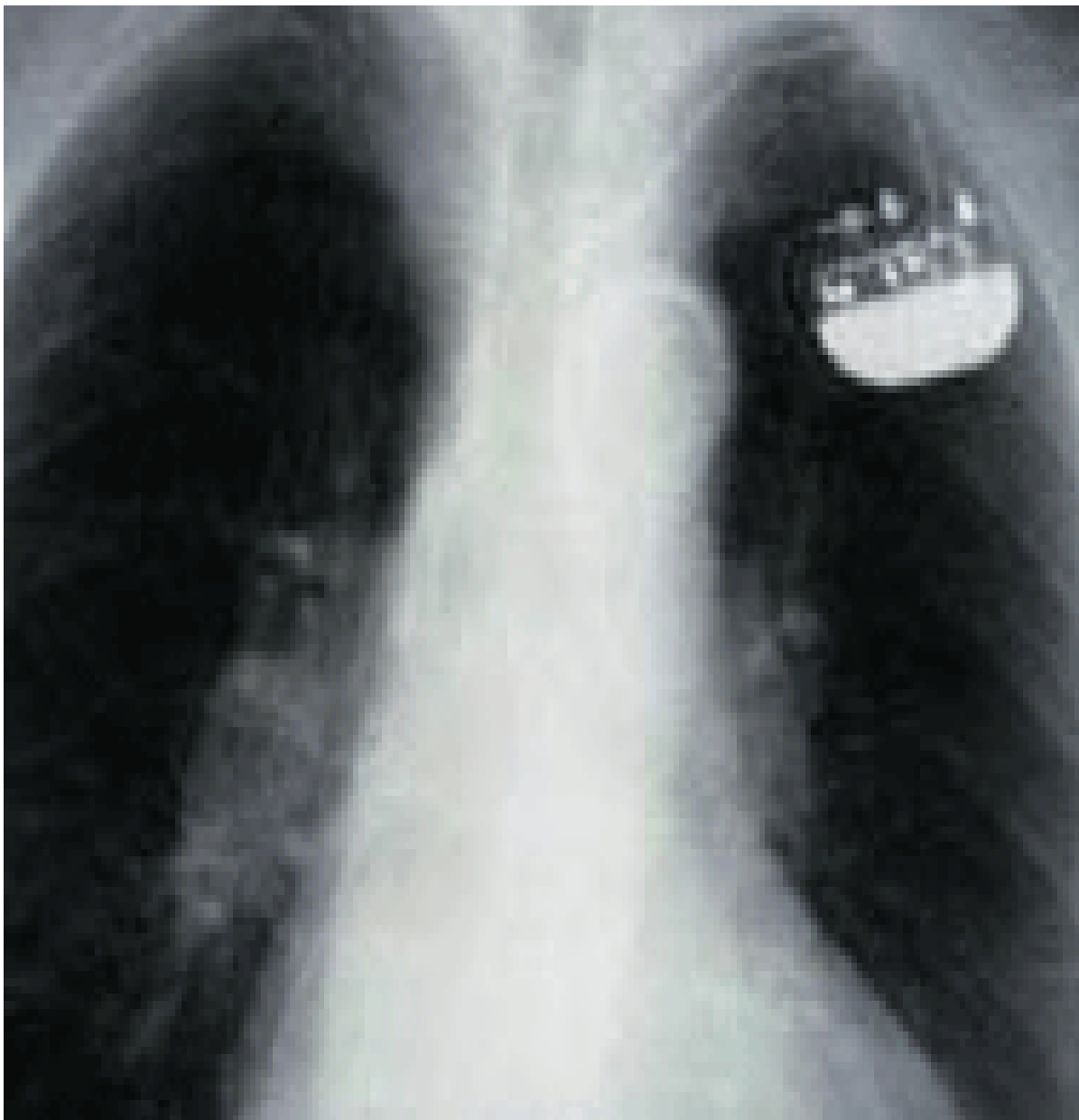
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DEVICES

**What
is
this?**



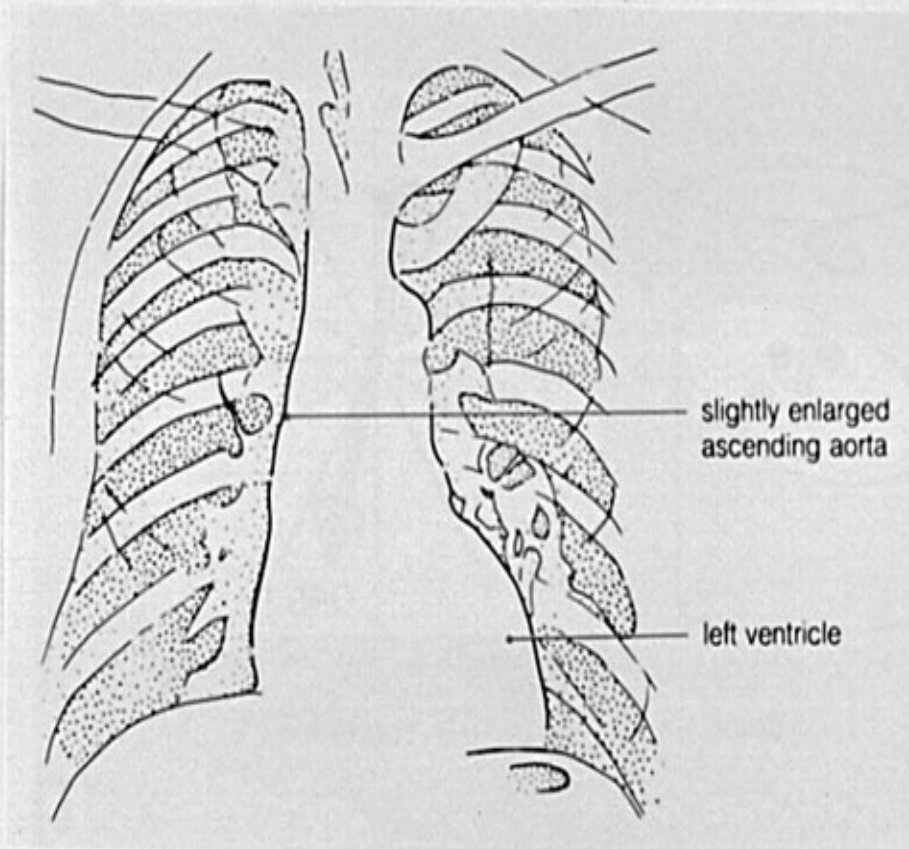
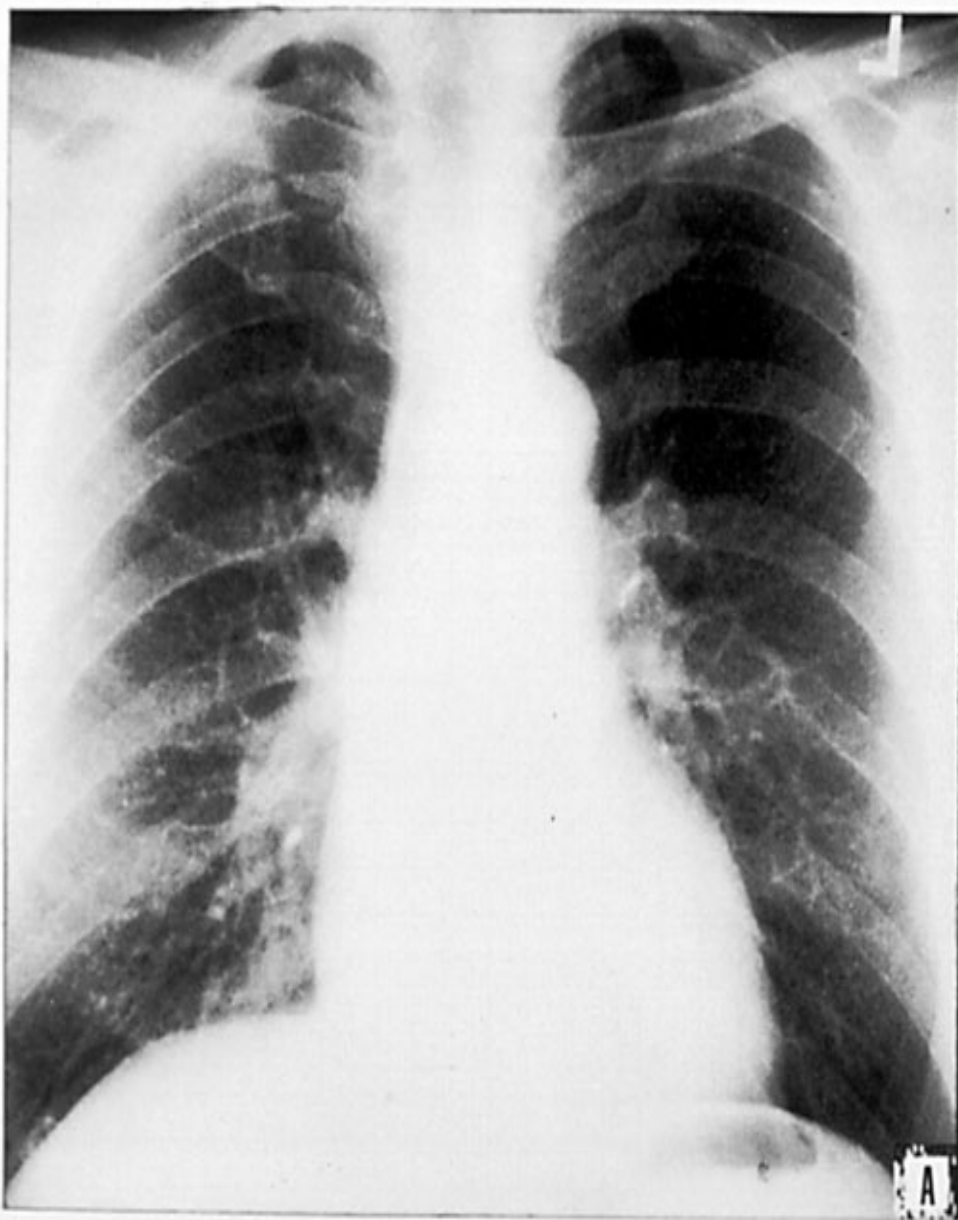
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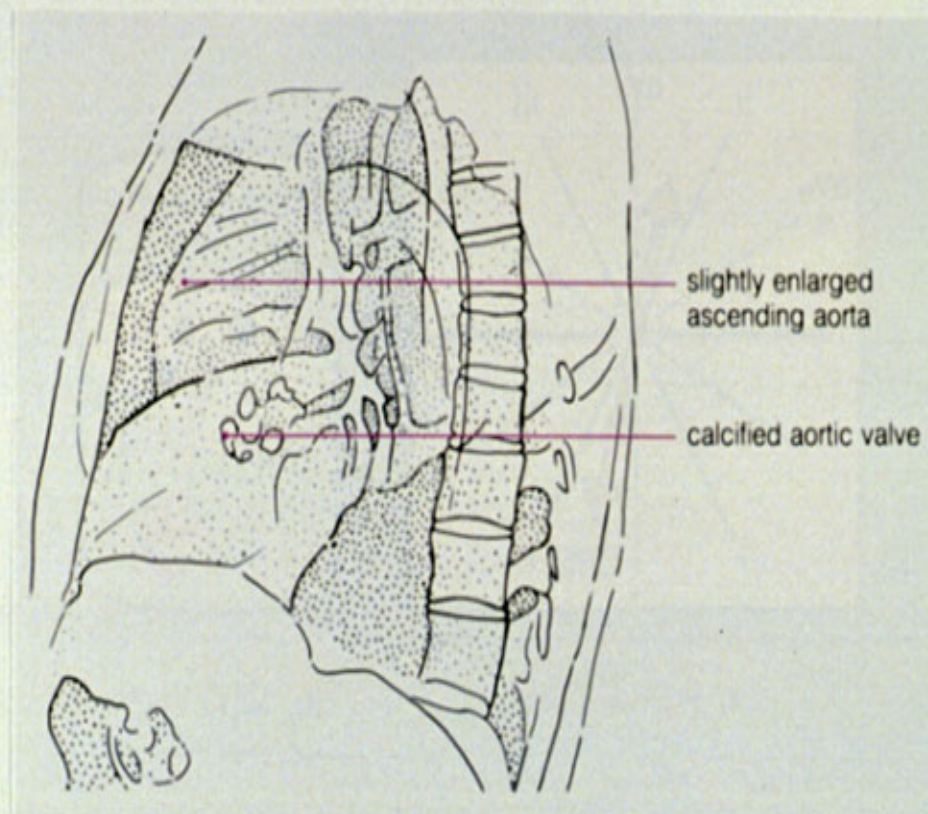
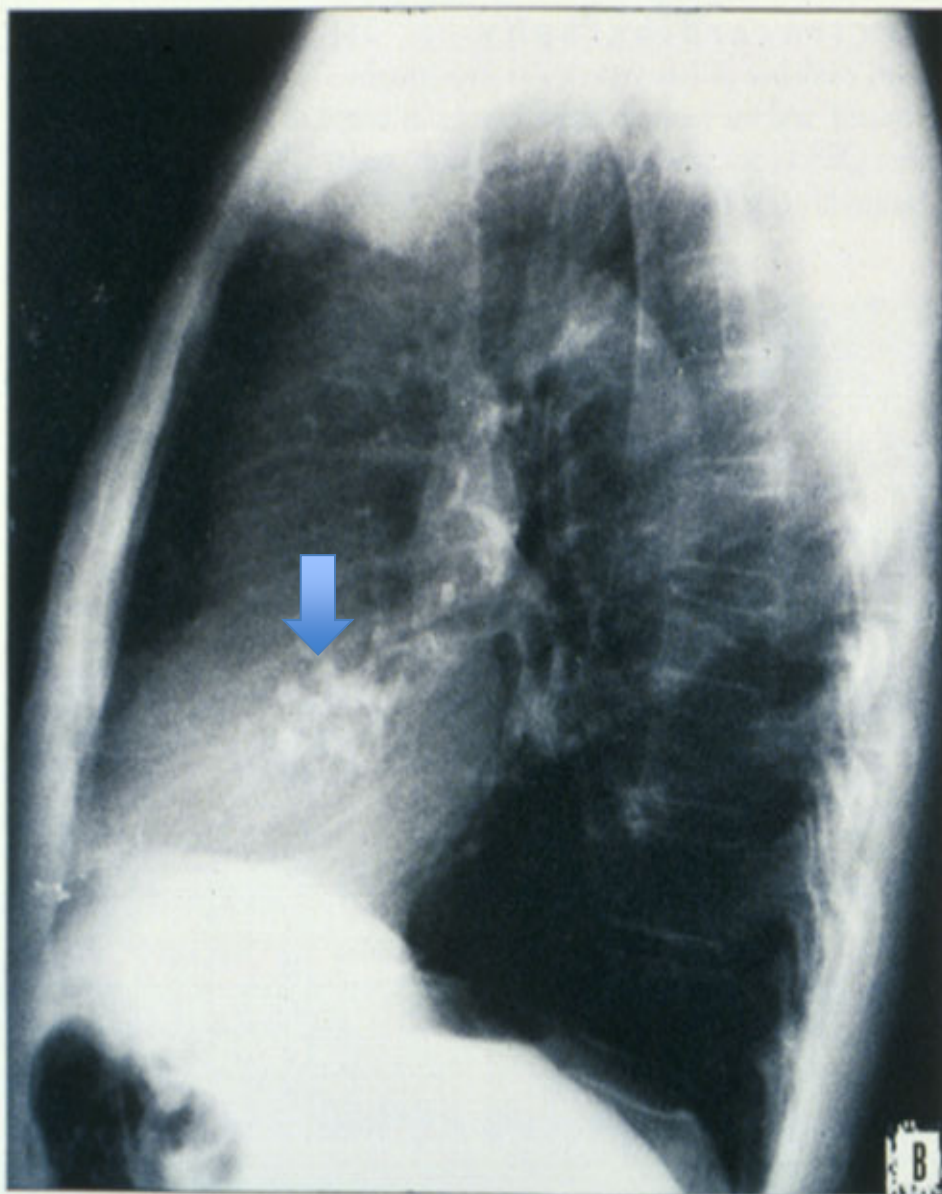


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Case # 1: A 75 year old man with dyspnea on exertion, a recent syncopal episode, and a loud systolic murmur at the right sternal border.





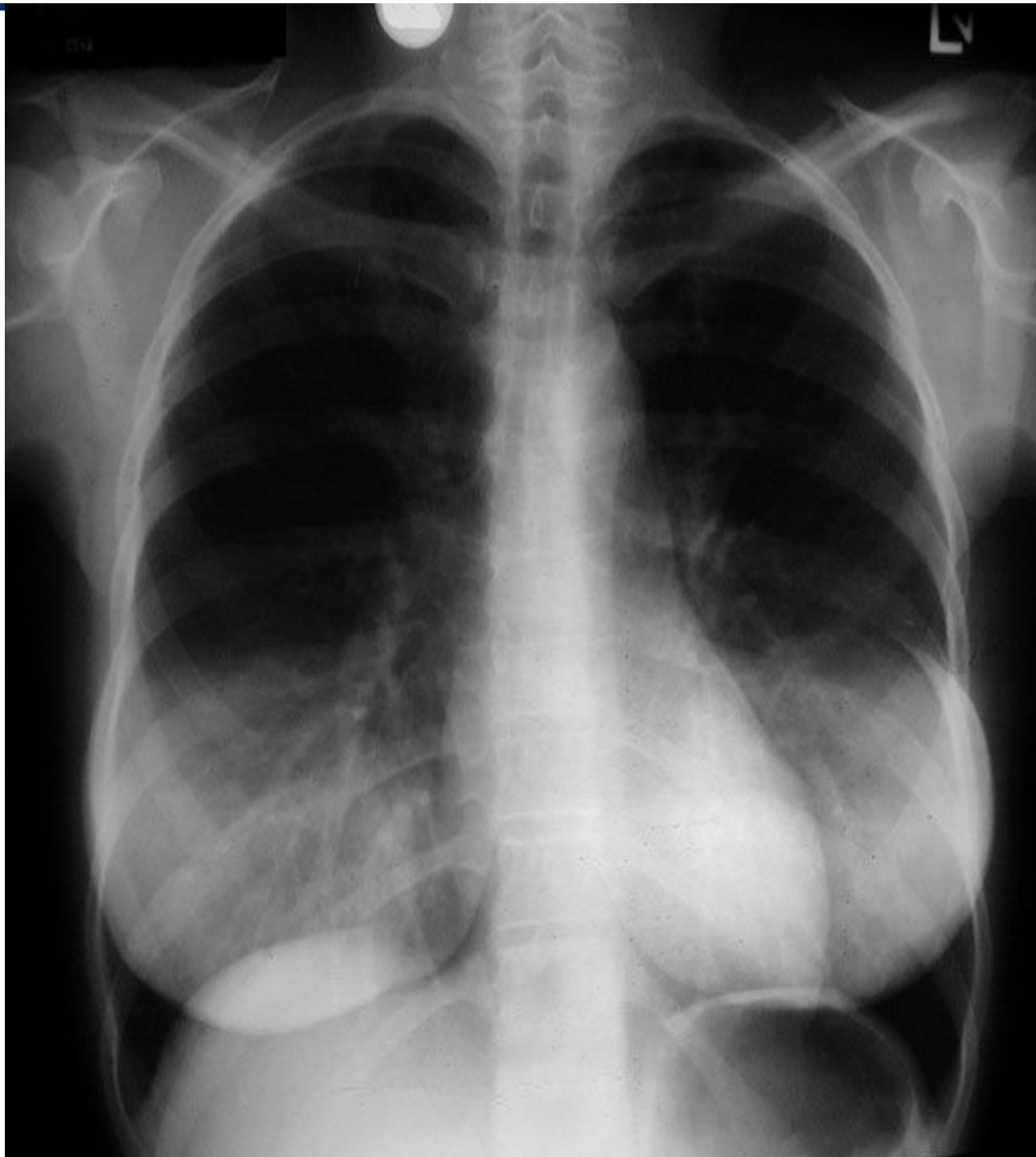


**DO YOU SEE ANYTHING
UNUSUAL IN THIS CHEST
XRAY**



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Silicone



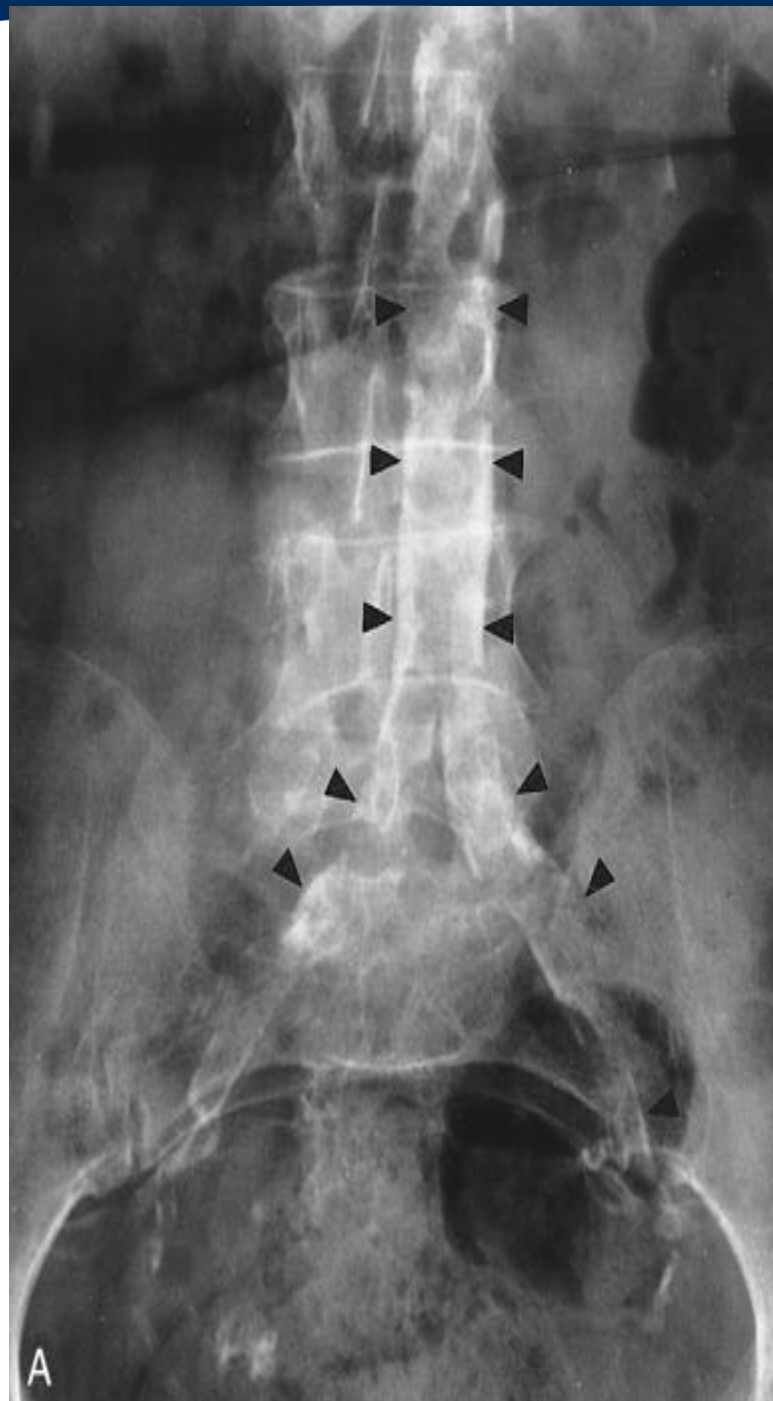
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Can the cardiac specialist learn anything from the abdominal x-ray?



Case # 2: An 82 year old man is admitted to the hospital for severe right flank pain. Here is his abdominal x-ray on admission.





Case # 3: A 40 year old man comes to the ER complaining of severe central chest pain that is worse when he lies down or takes a deep breath. He has had nasal congestion, cough, and fever for one week.



