

⁵²Teaching
⁸⁸Rad



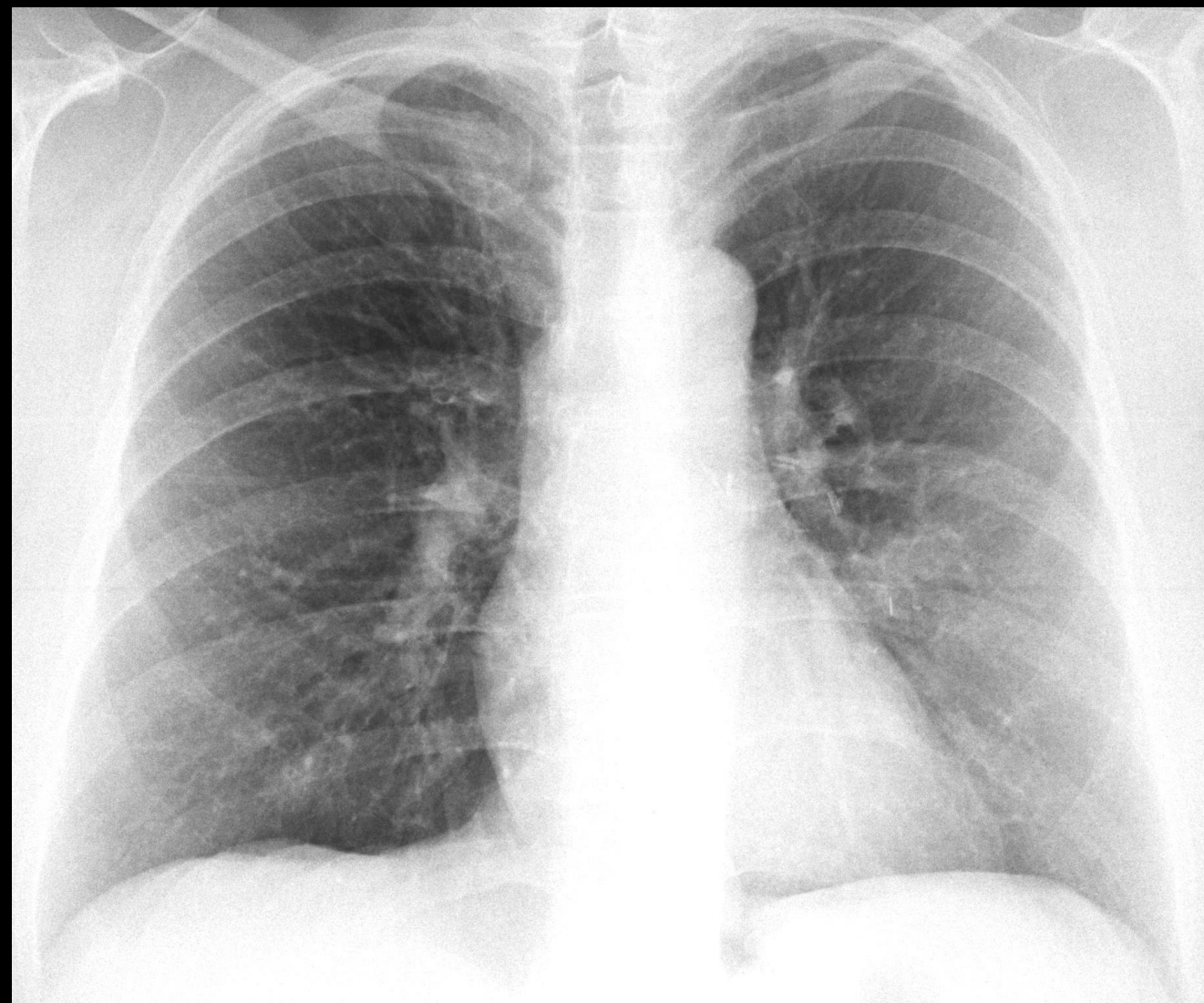
Each week on the ESR blog
blog.myESR.org

The PA chest radiograph

Things we all know, but are important to remember

CASE 1

53 y.o. woman. Routine follow-up radiography for breast carcinoma, operated on five years ago.



Do you see any abnormalities?
If so, where?

1. Right upper quadrant
2. Right lower quadrant
3. Left upper quadrant
4. Left lower quadrant

A set of PA and lateral radiographs serves admirably for **detecting** most lesions and aids in determining what additional studies need to be performed (*Benjamin Felson, 1973*).

Role of chest radiograph in the XXI century

- 1. Detect abnormalities**

- 1. Characterize them**

- 2. Decide what to do next**

DIAGNOSTIC PROCESS:

DETECTION

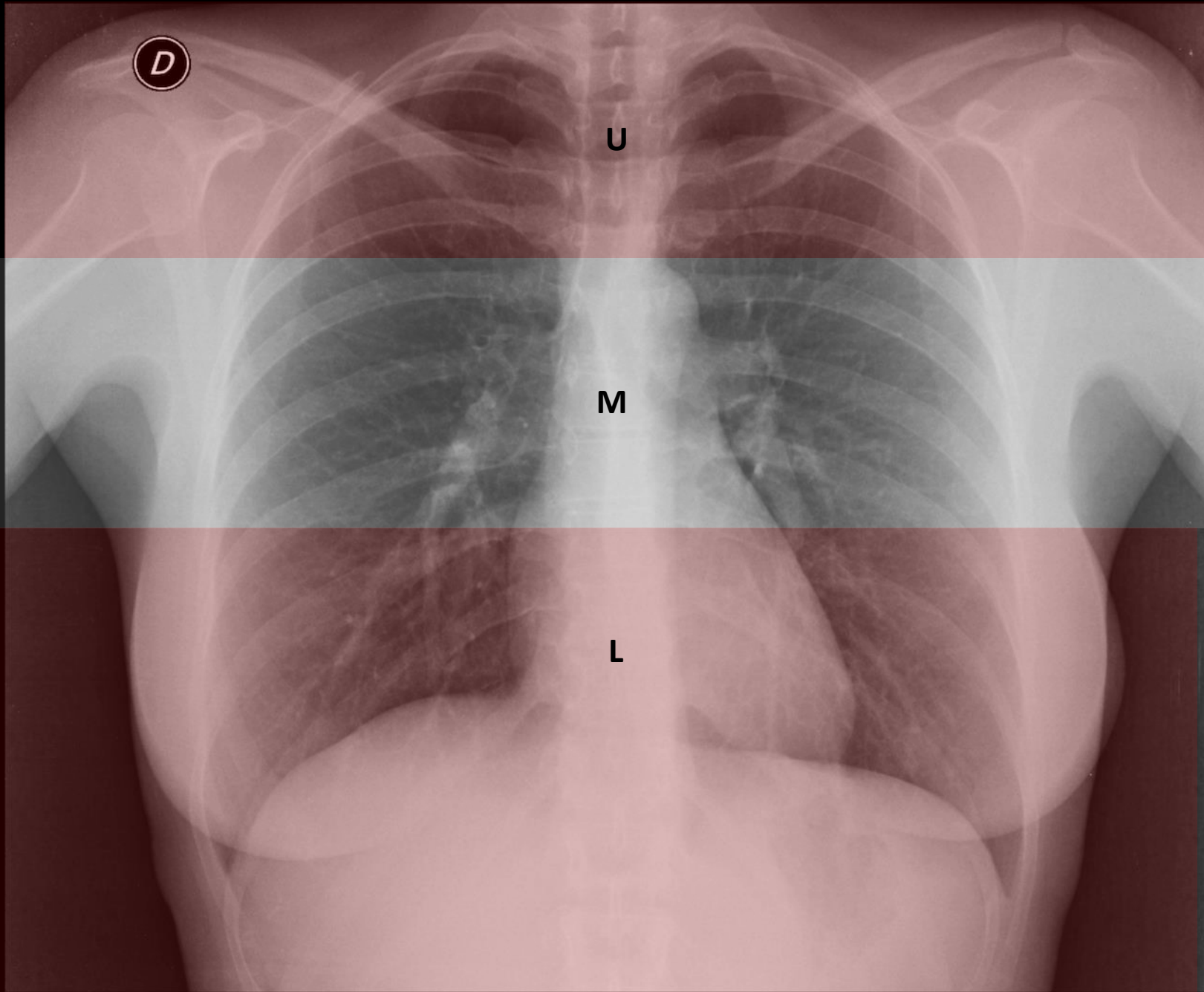


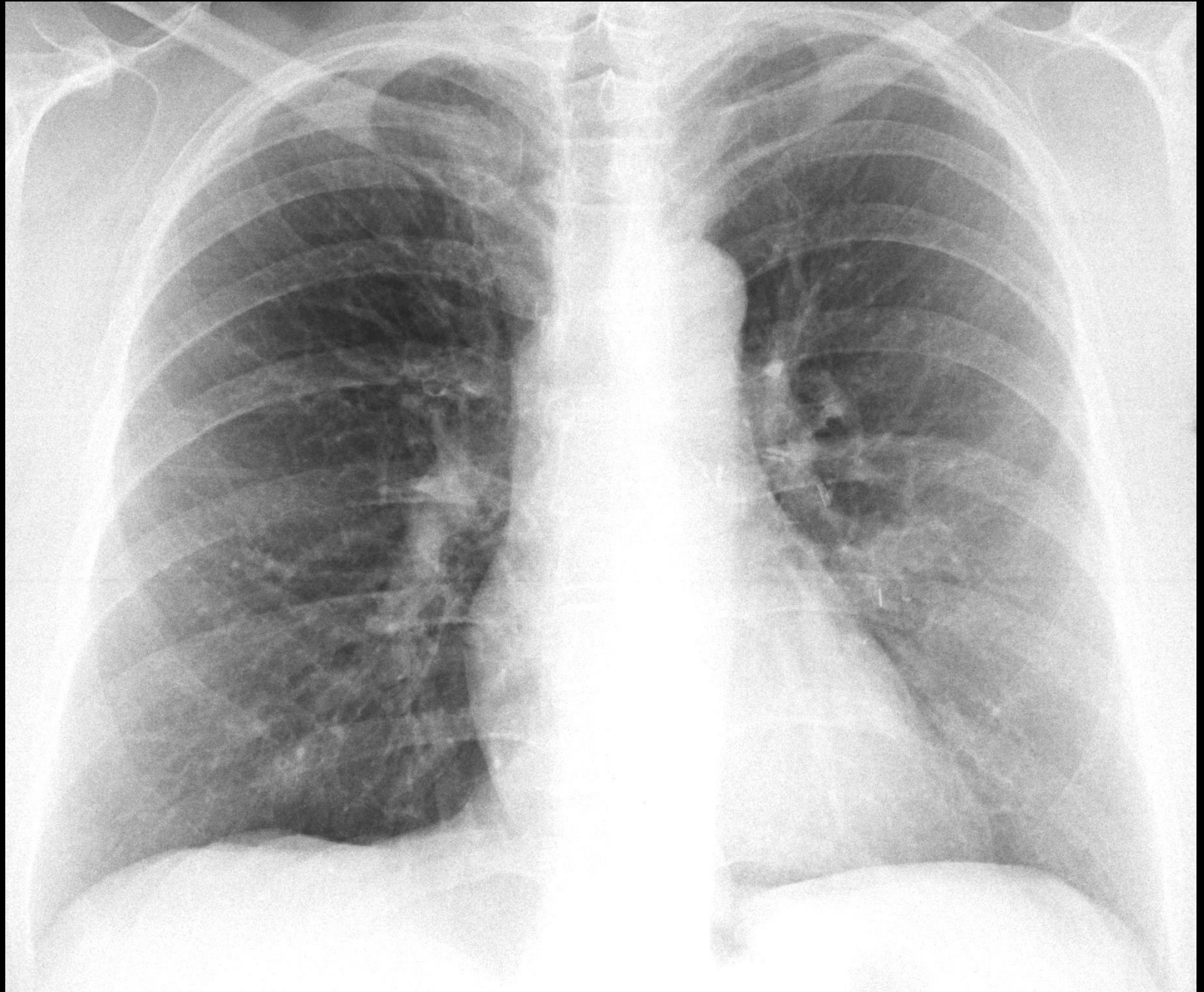
**COMPUTED
TOMOGRAPHY**

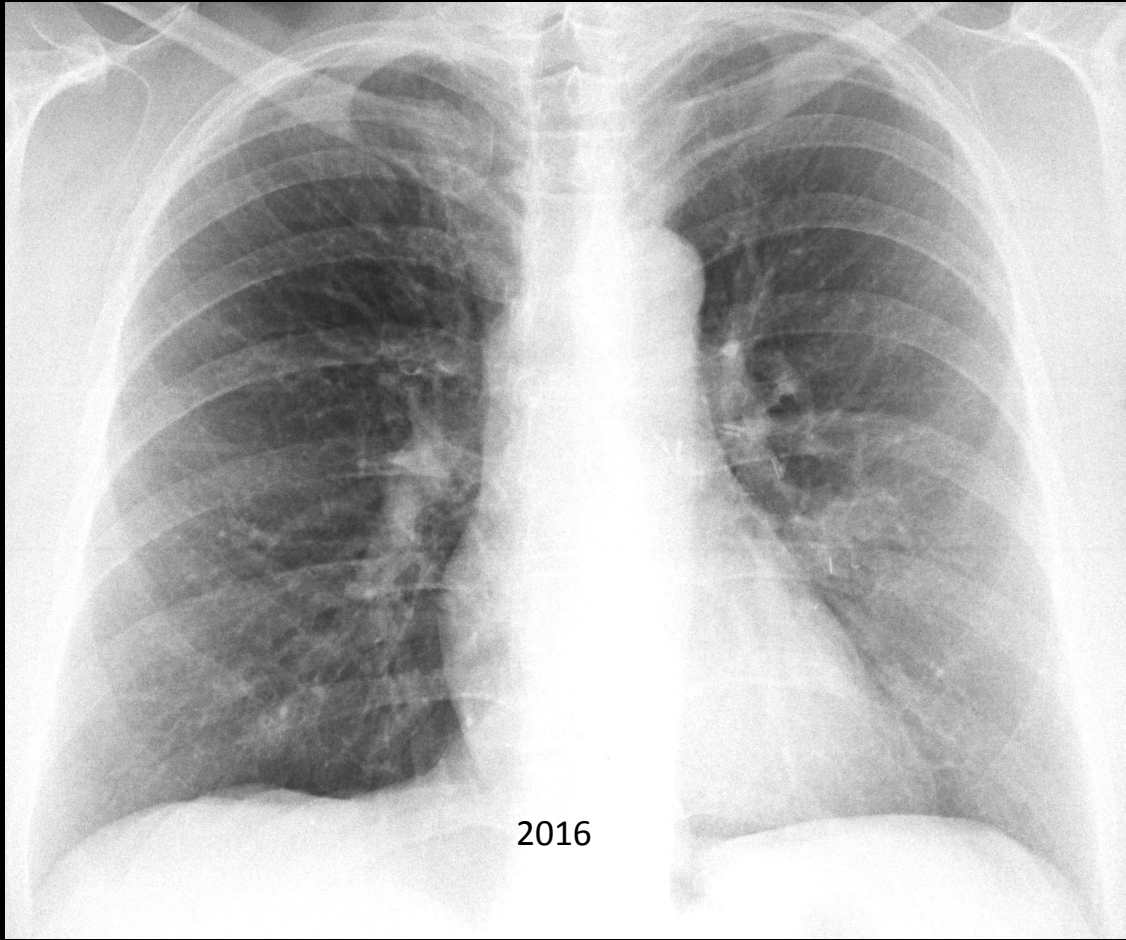


DIAGNOSIS

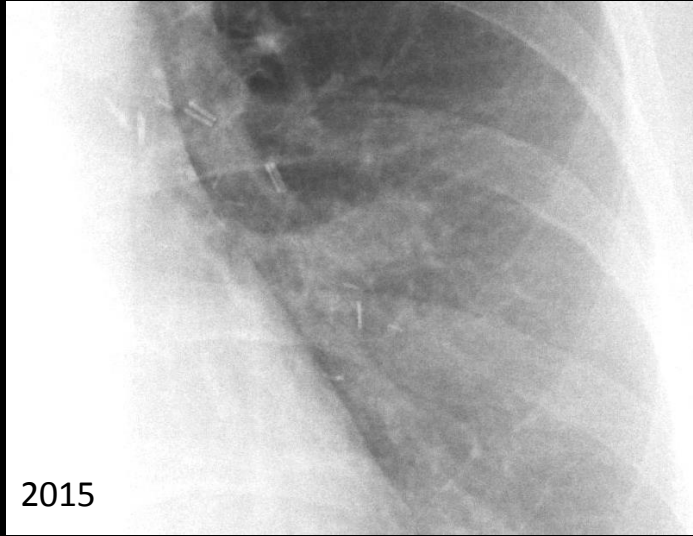
Missed findings account for about 50 % of diagnostic errors



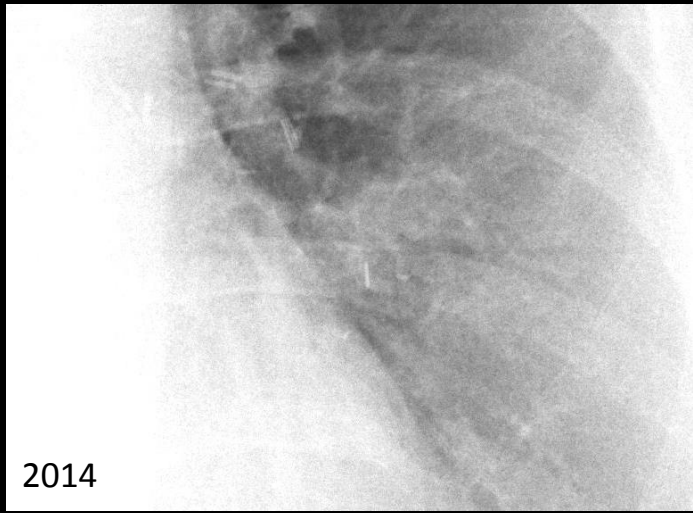




2016

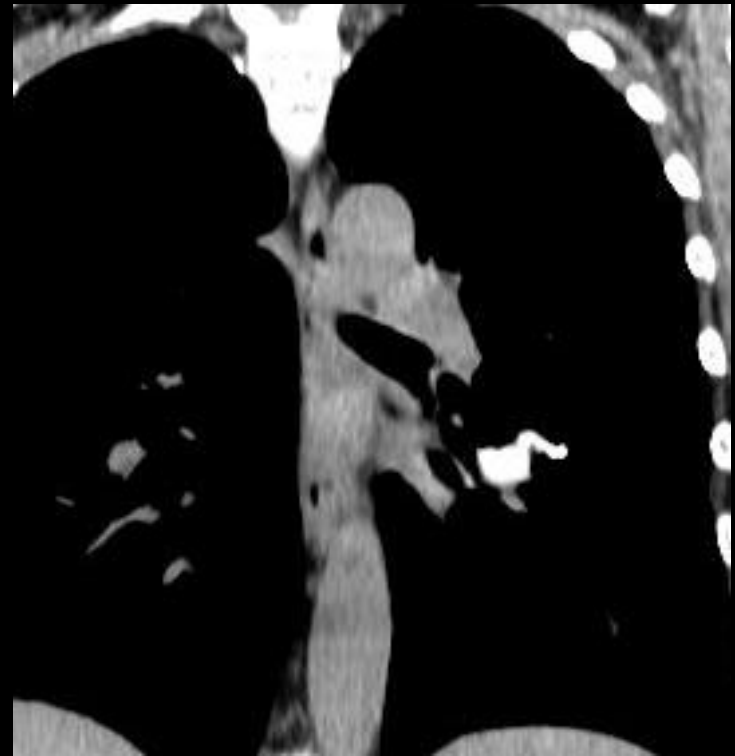


2015

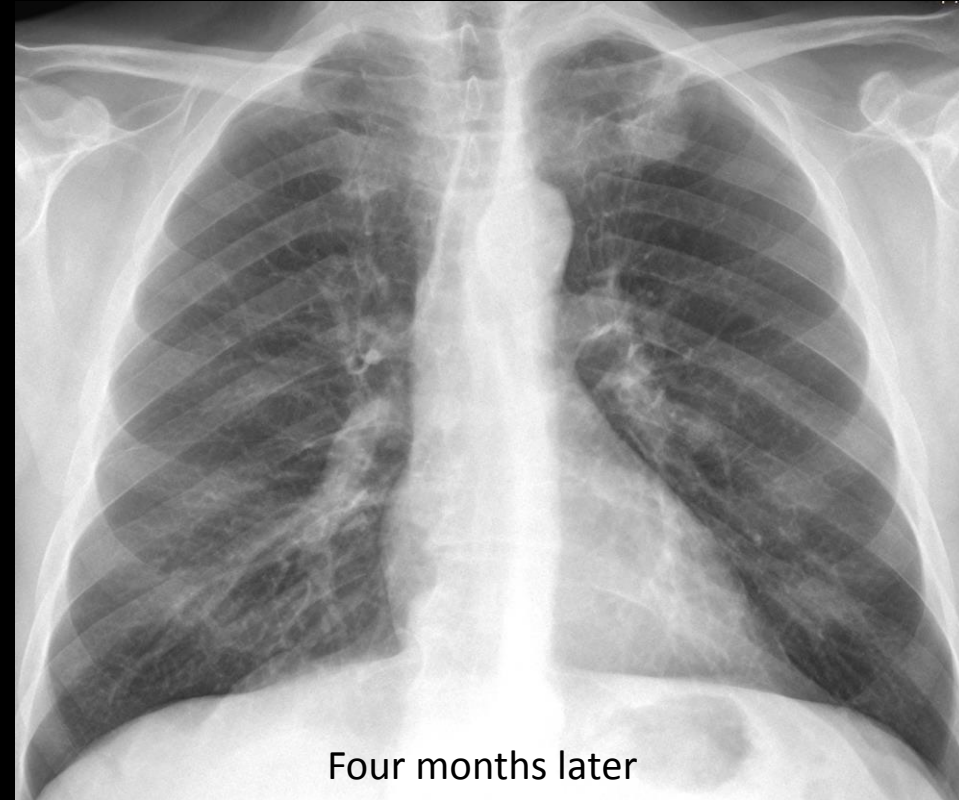
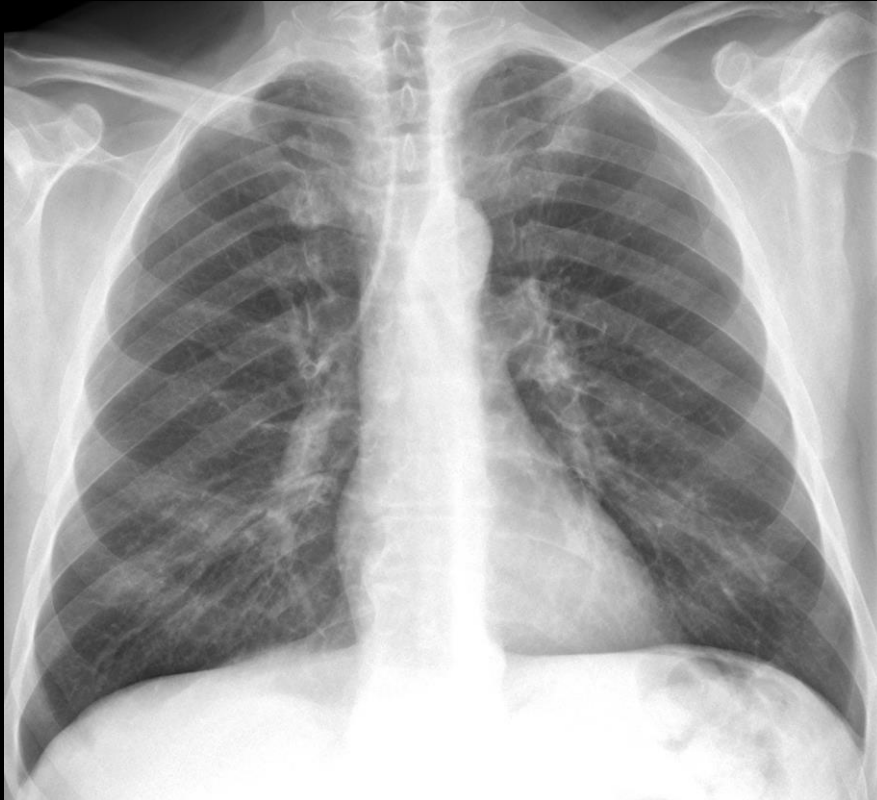


2014

Calcified mucous impaction

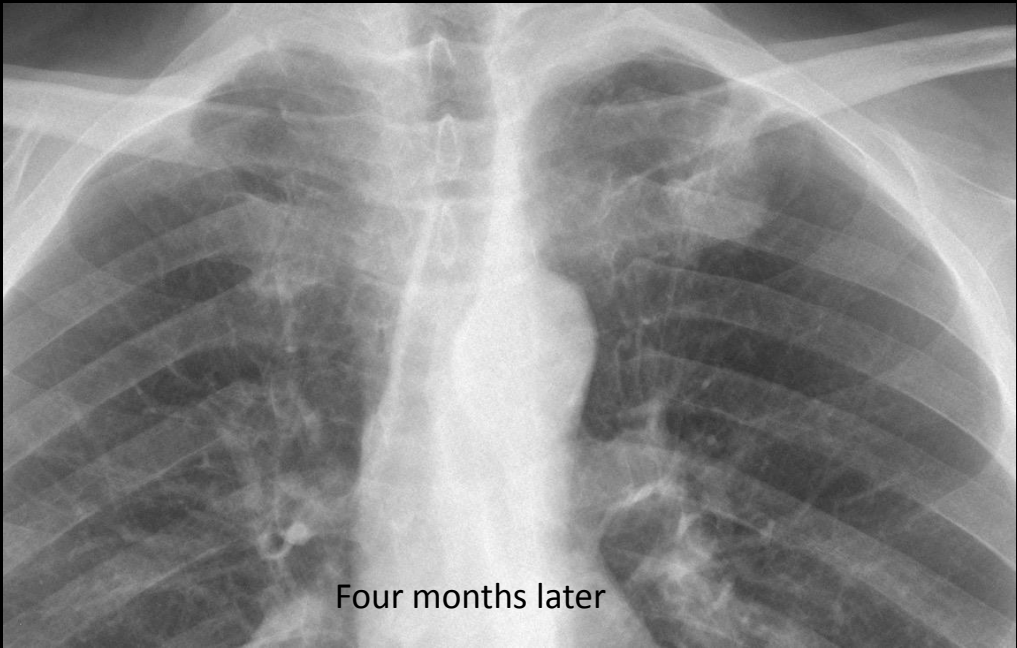
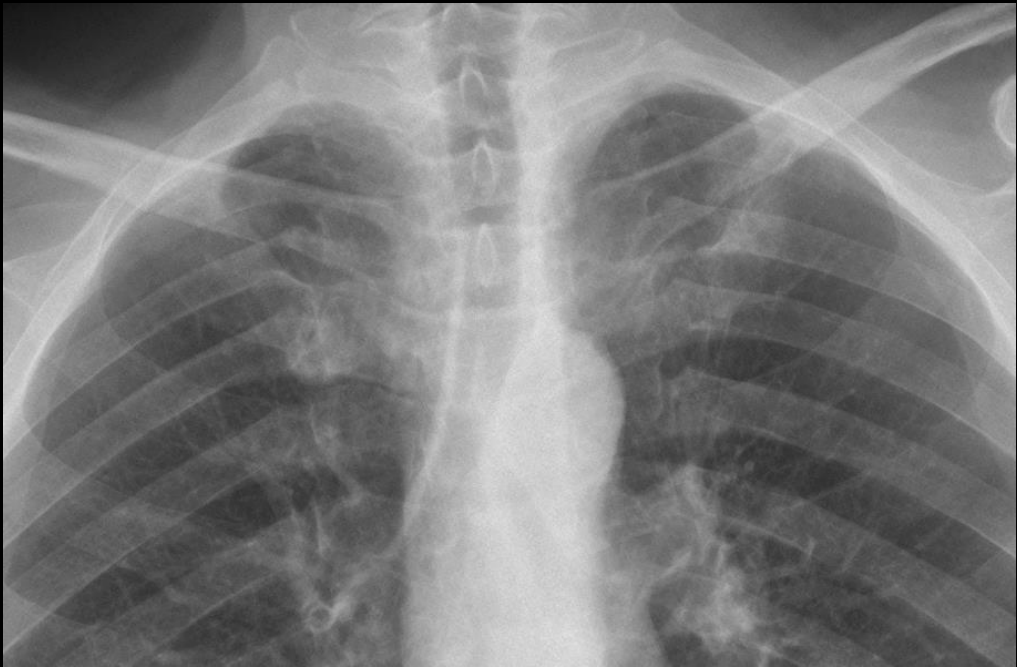


47 y.o. man with cough and weight loss



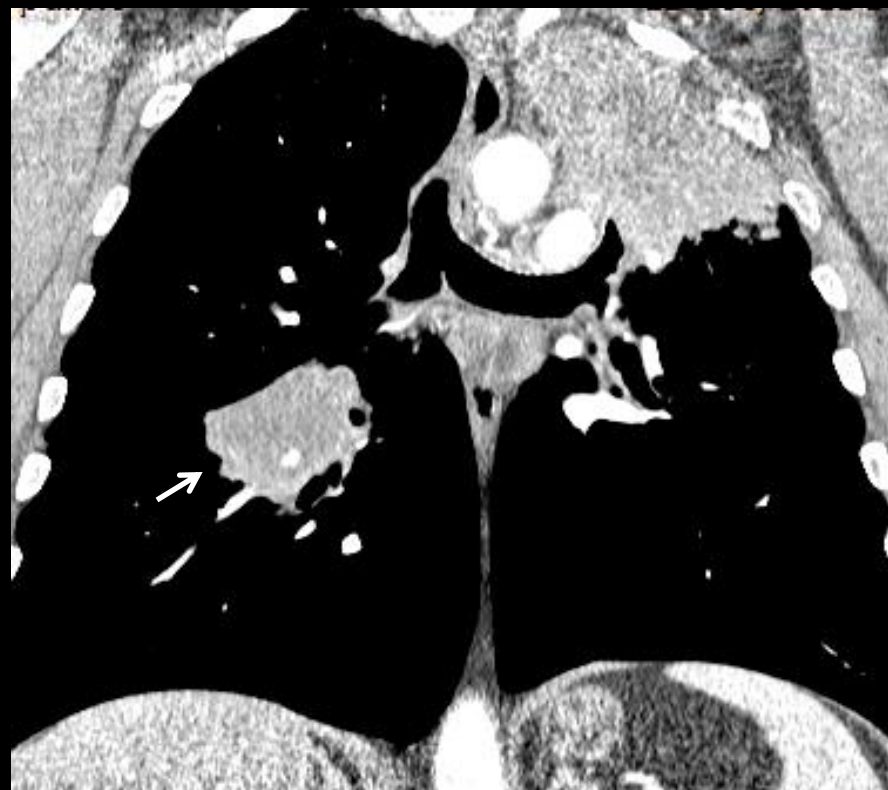
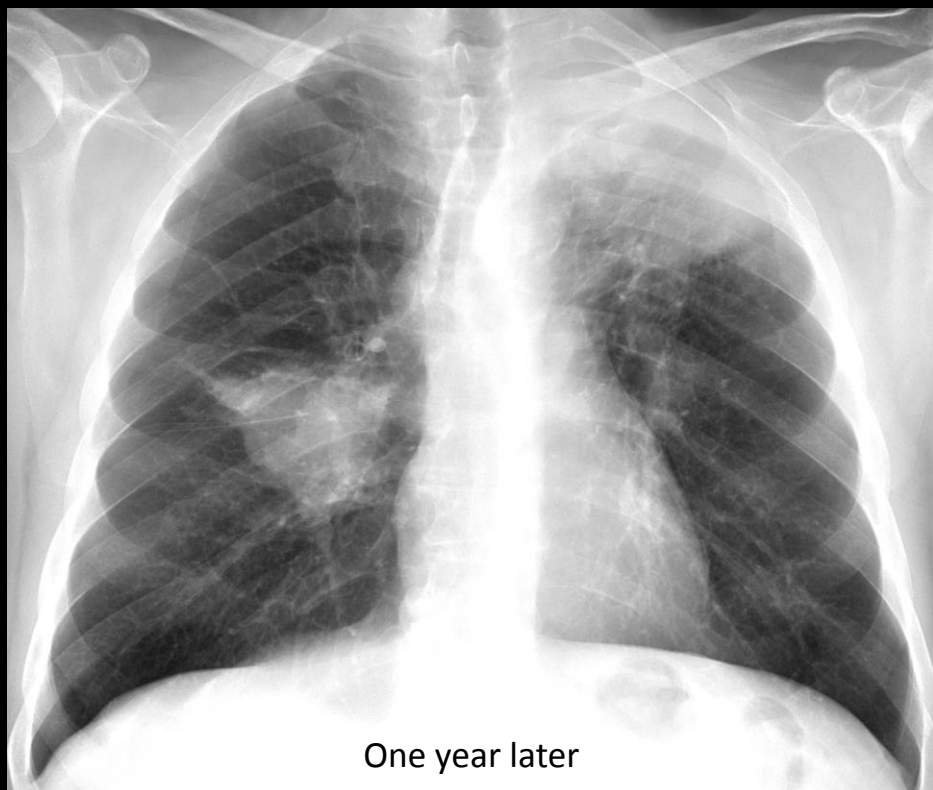
Do you see any abnormality?
If so, where?

1. Right upper quadrant
2. Right lower quadrant
3. Left upper quadrant
4. Left lower quadrant



Four months later

Bilateral carcinoma



A frontal chest X-ray showing the thoracic cavity, including the lungs, heart, and bony structures. A small circle containing the letter 'D' is located in the upper left corner of the image.

D

UPPER AREA CHECKLIST:

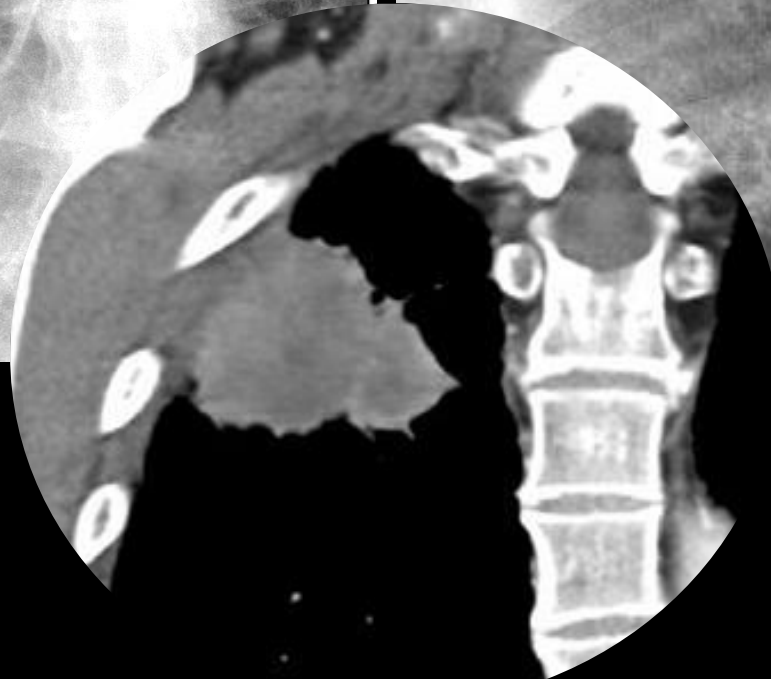
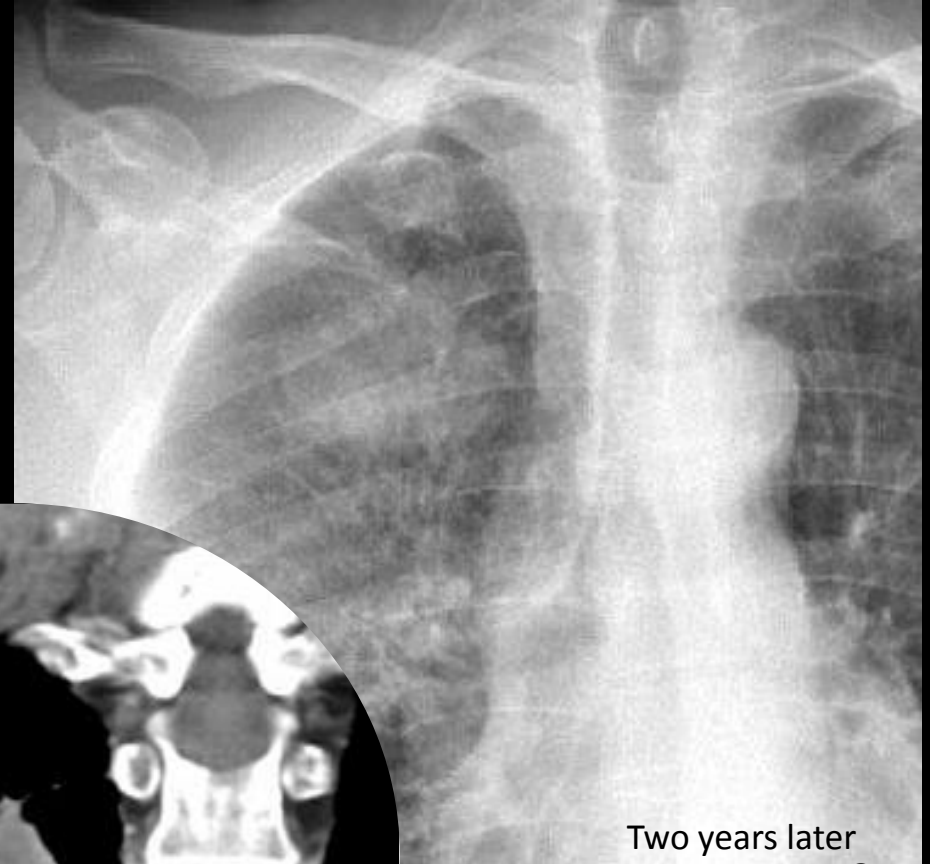
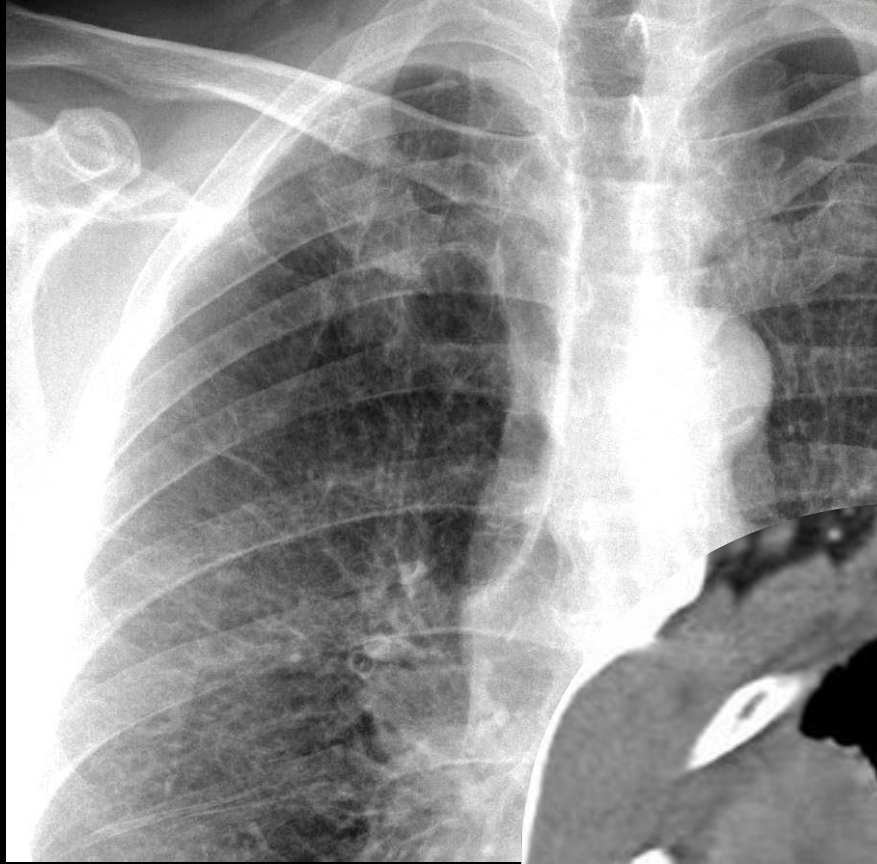
Pulmonary apices - Search for pulmonary nodules and Pancoast tumor

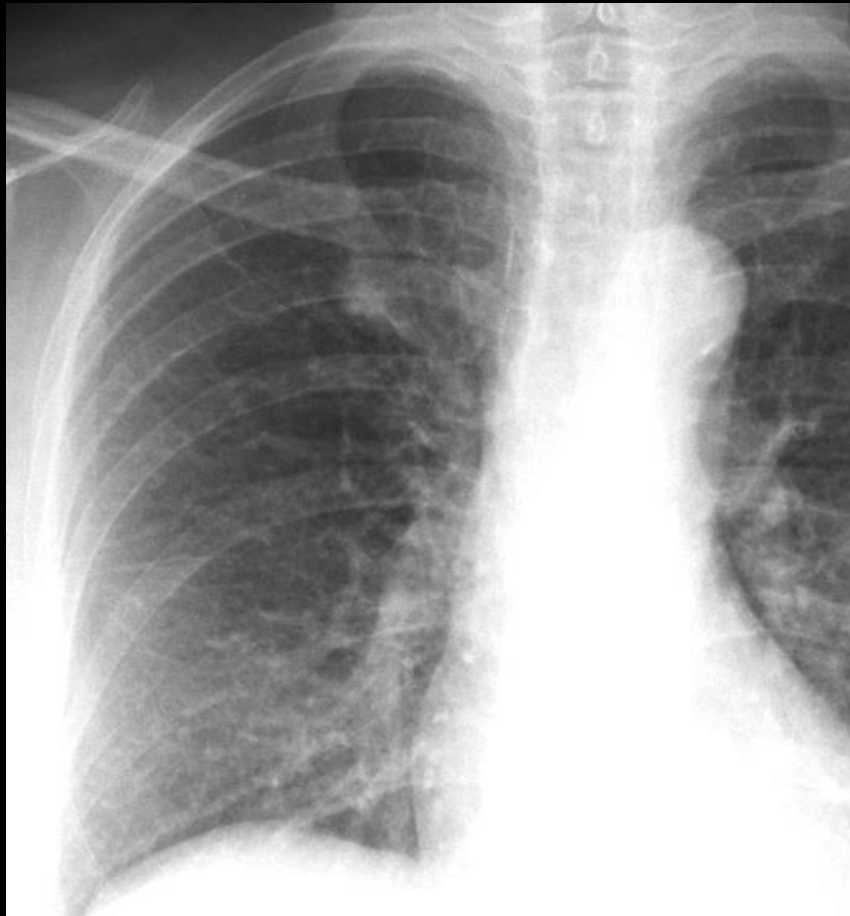
Trachea - Look for caliber changes and displacement by masses

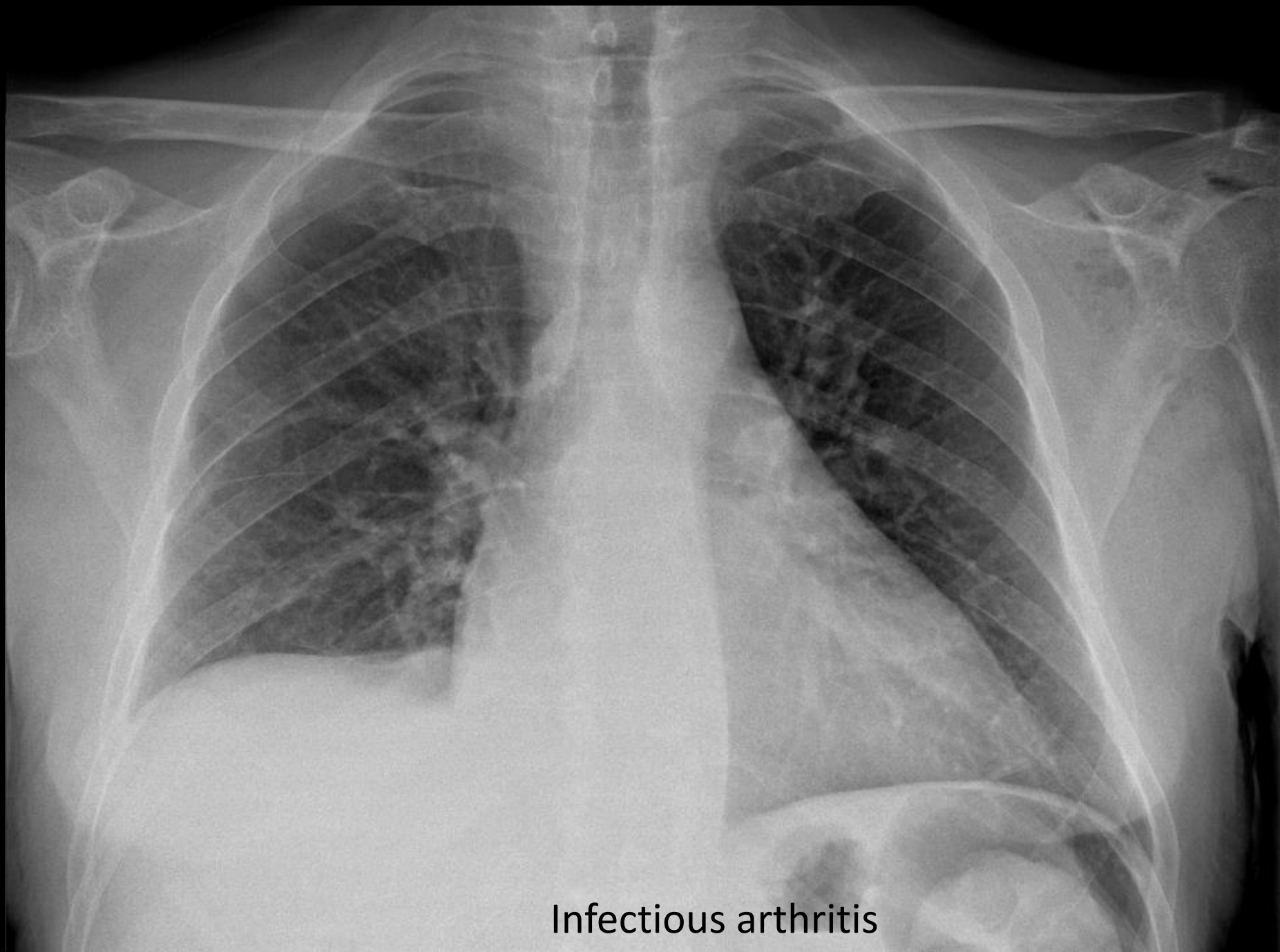
Right paratracheal stripe – Wider than 3 mm is abnormal

Shoulders - Look for periarticular calcifications and osseous lesions

23-51% apical nodules missed. Average size 1.6 cm
Austin. Radiology 1992





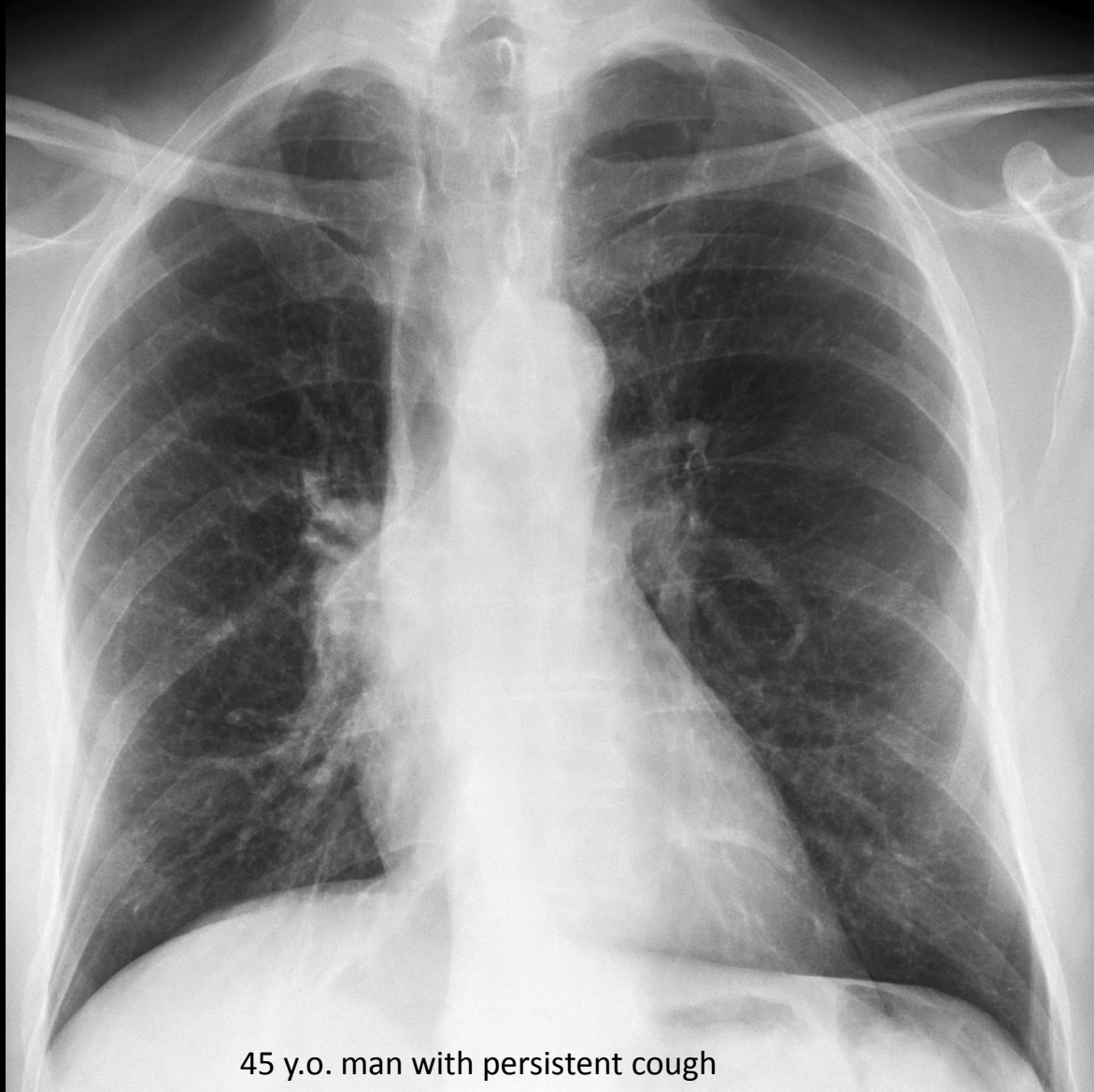


Infectious arthritis



Infectious arthritis

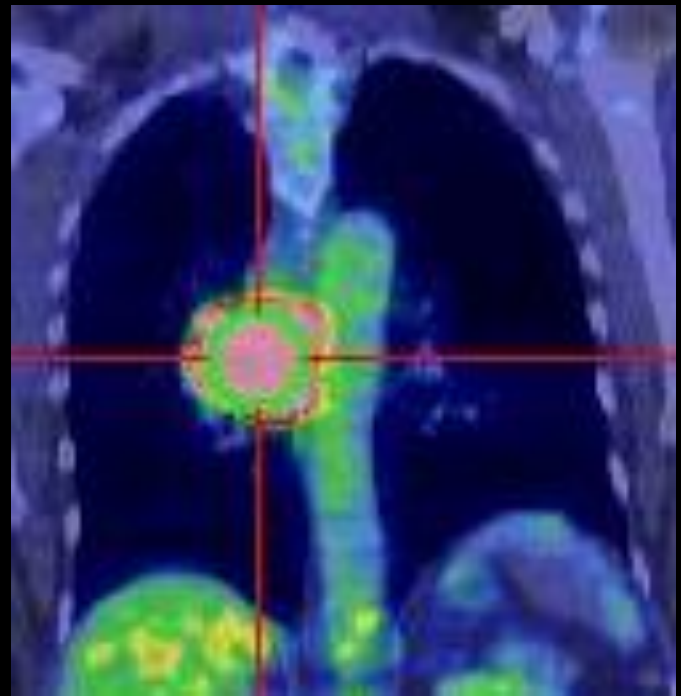
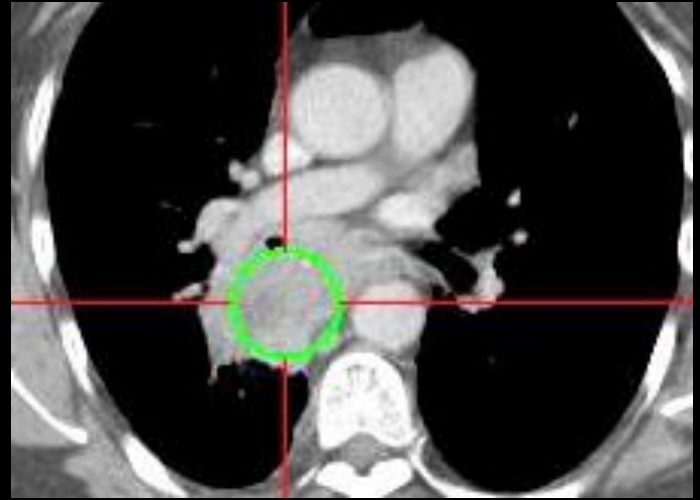
CASE 3



45 y.o. man with persistent cough

Do you see any abnormality?
If so, where?

1. Right upper quadrant
2. Right lower quadrant
3. Left upper quadrant
4. Left lower quadrant



Carcinoma of the lung

D

MIDDLE AREA BASIC CHECKLIST:

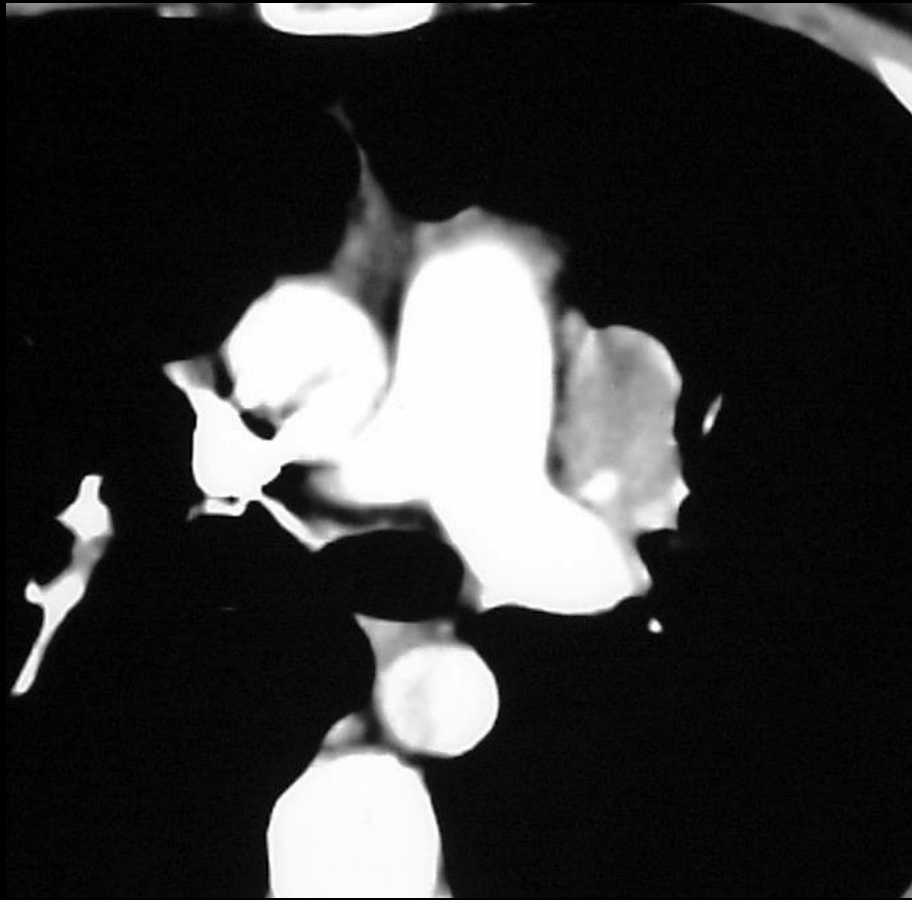
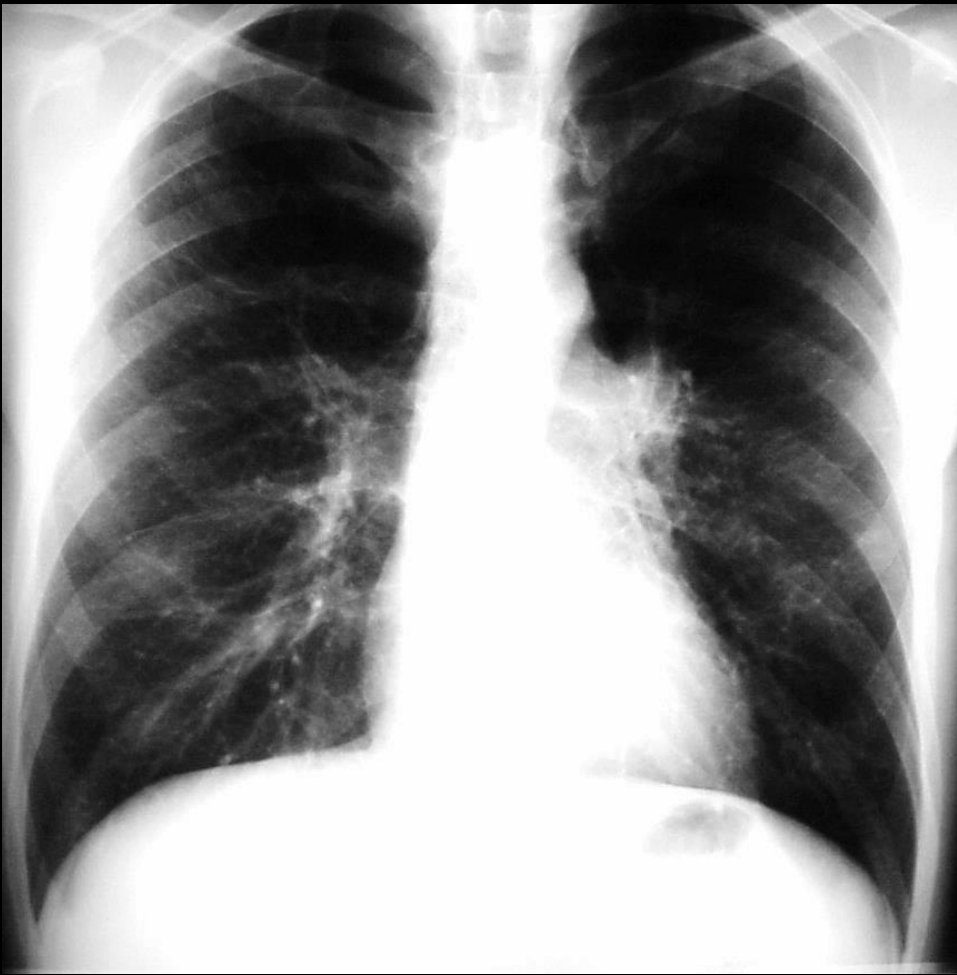
The hila - Size, density, and displacement

The azygos arch

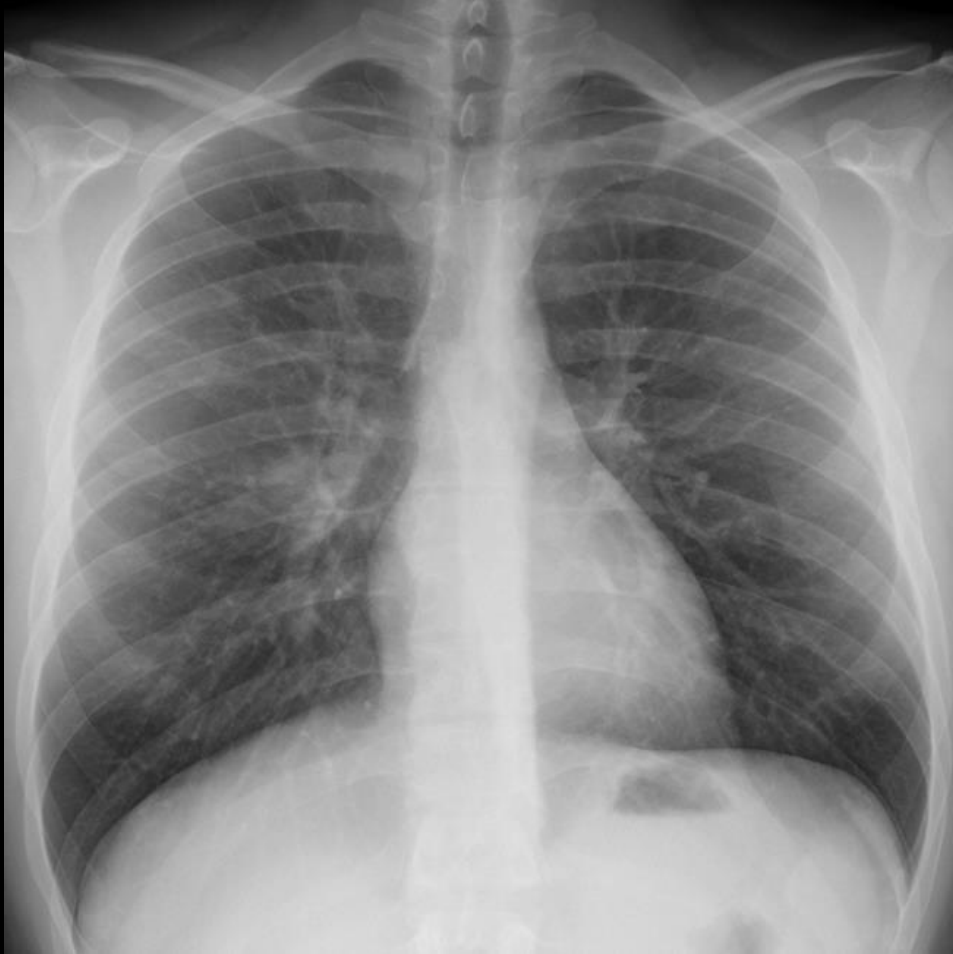
The ascending aorta

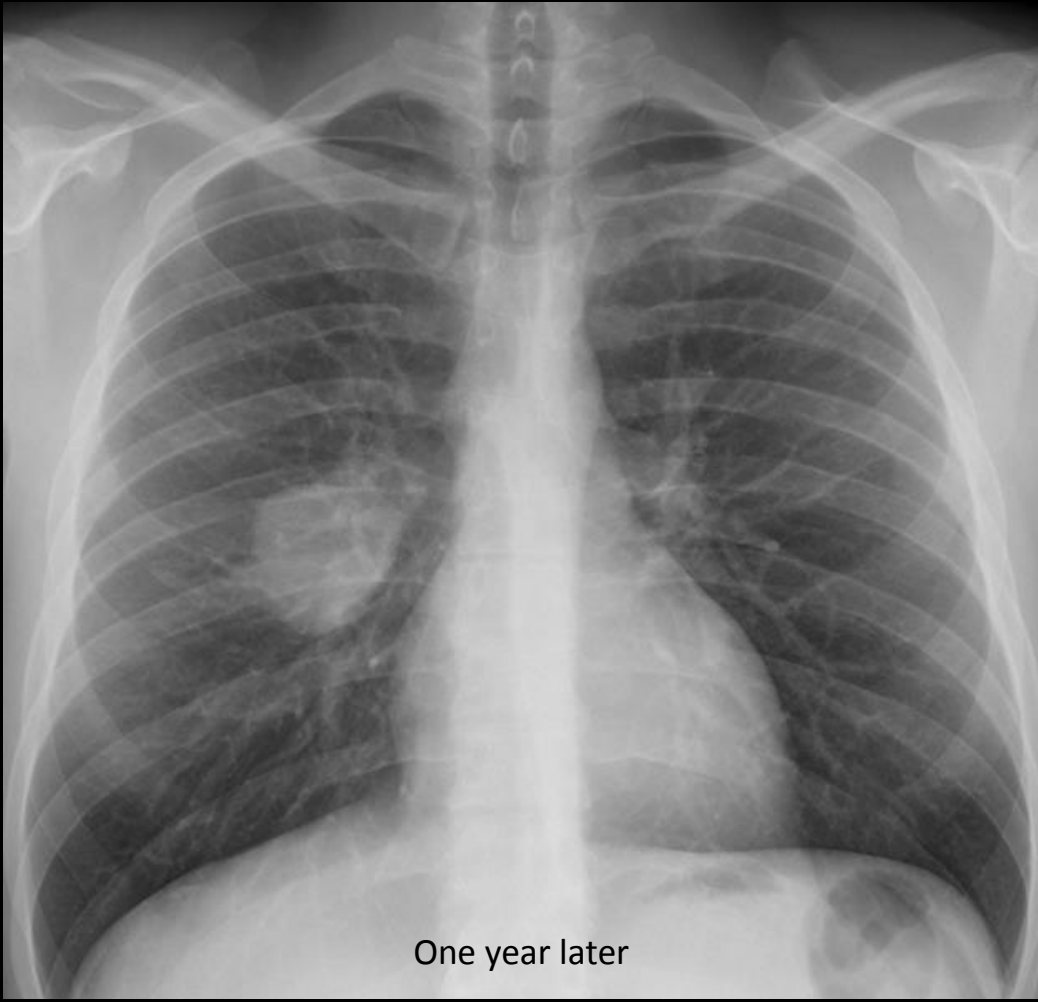
The aortic knob

The main pulmonary arch

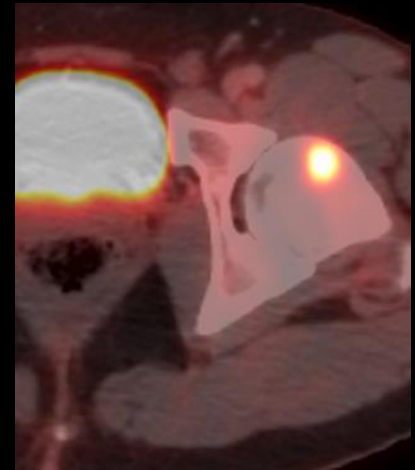
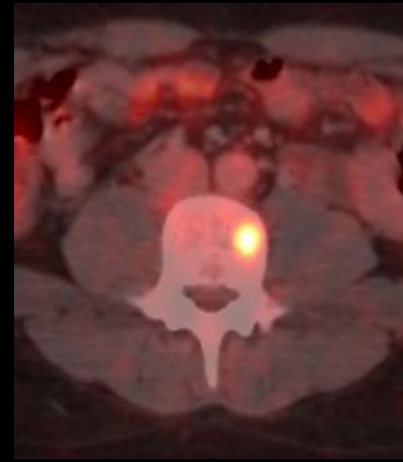
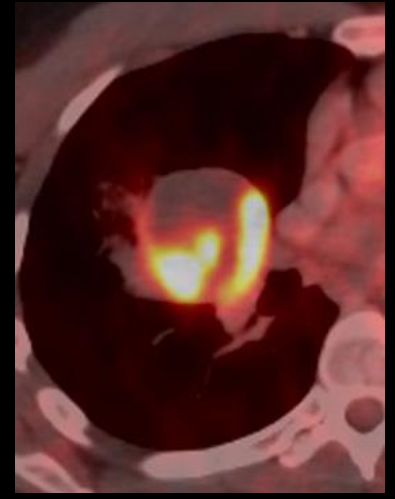


35 y.o. patient with mesenchymal sarcoma of the foot

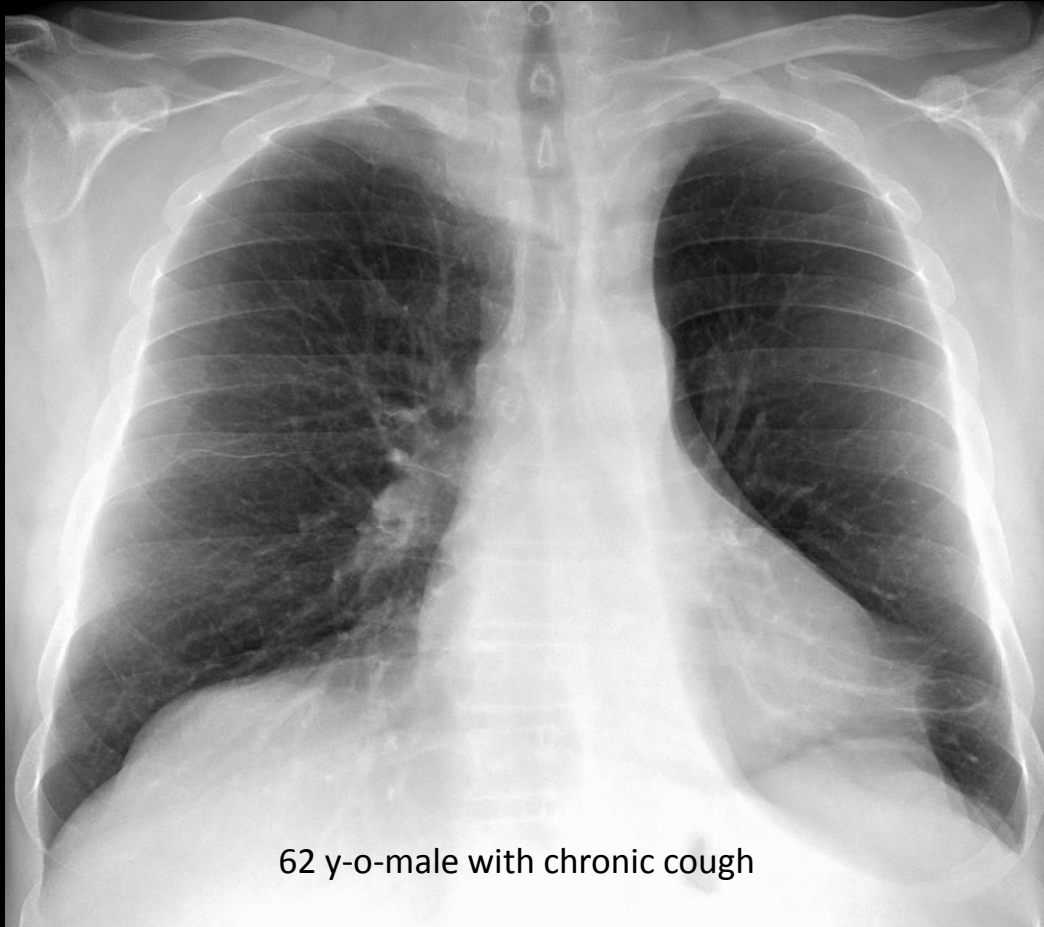




One year later

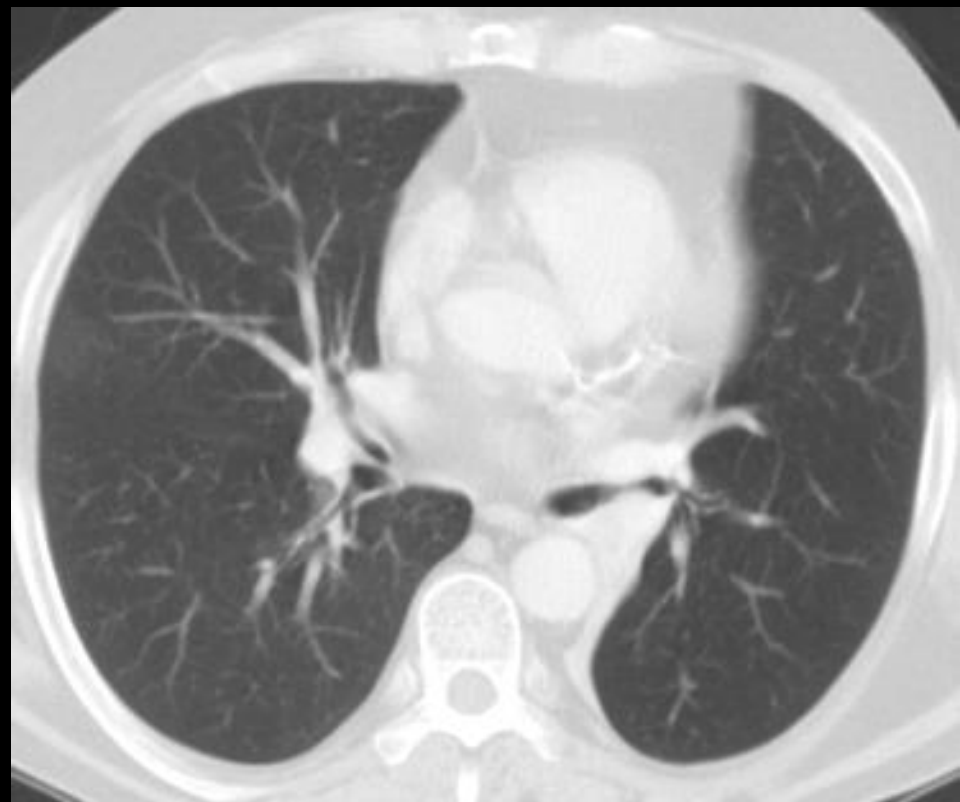
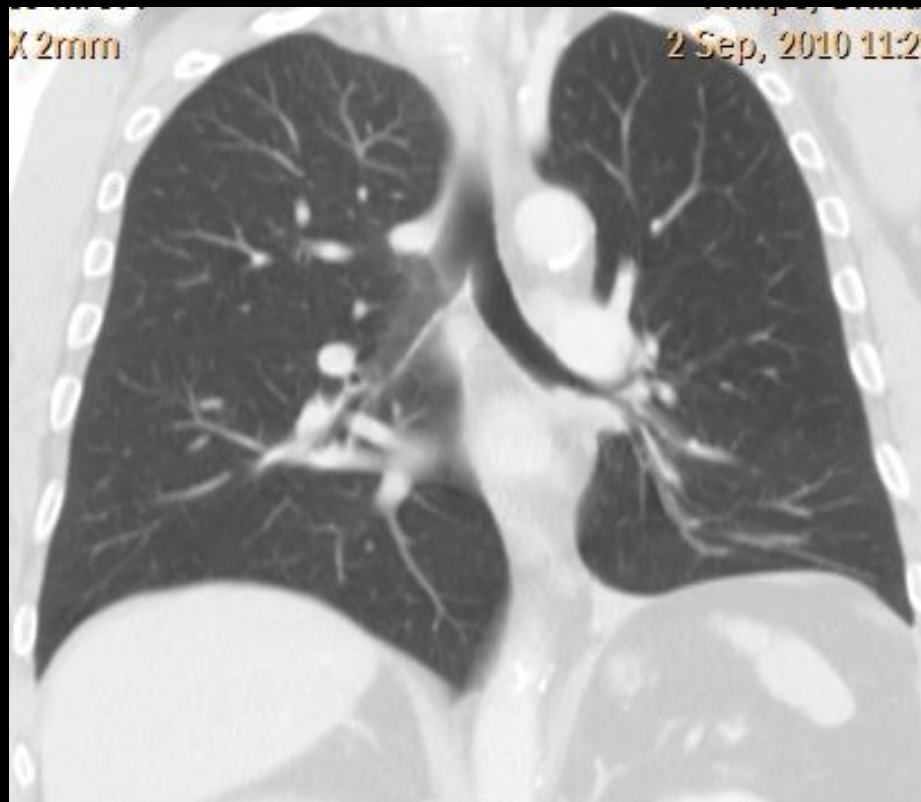


CASE 4



Diagnosis:

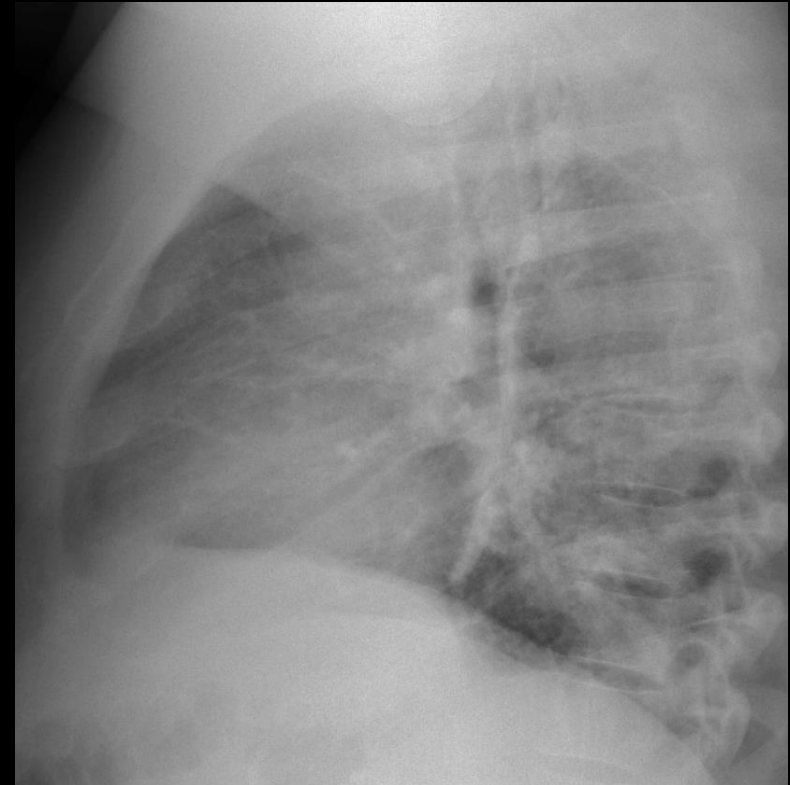
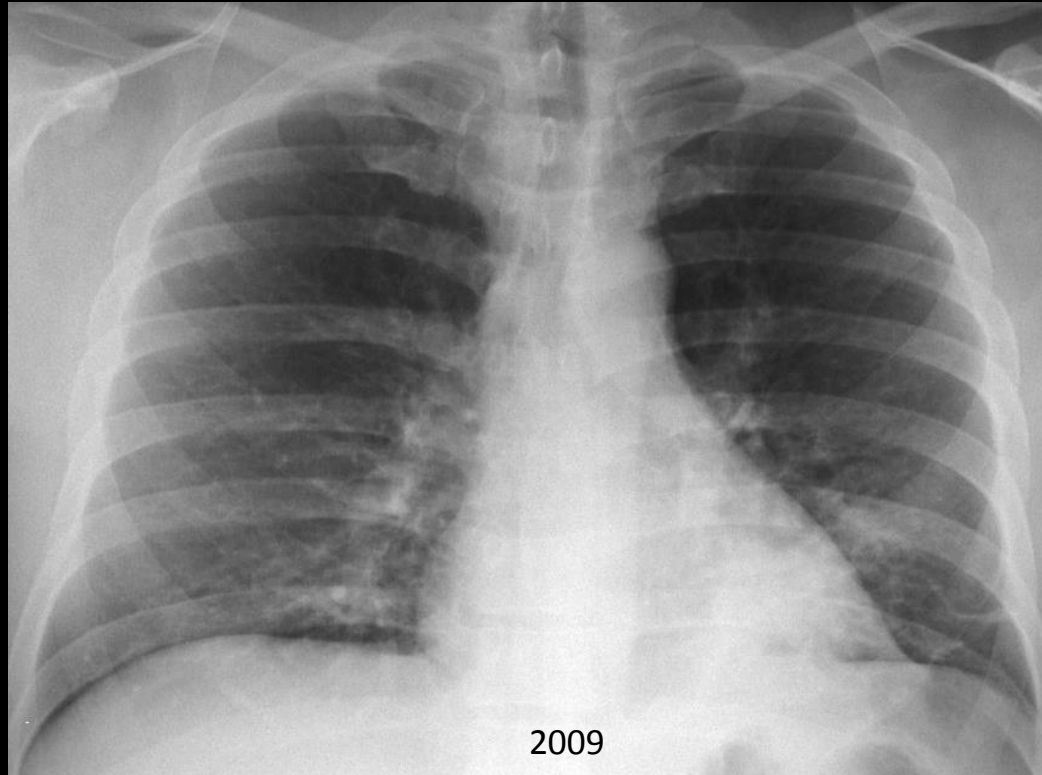
1. Carcinoma
2. McLeod's syndrome
3. Pneumothorax
4. None of the above



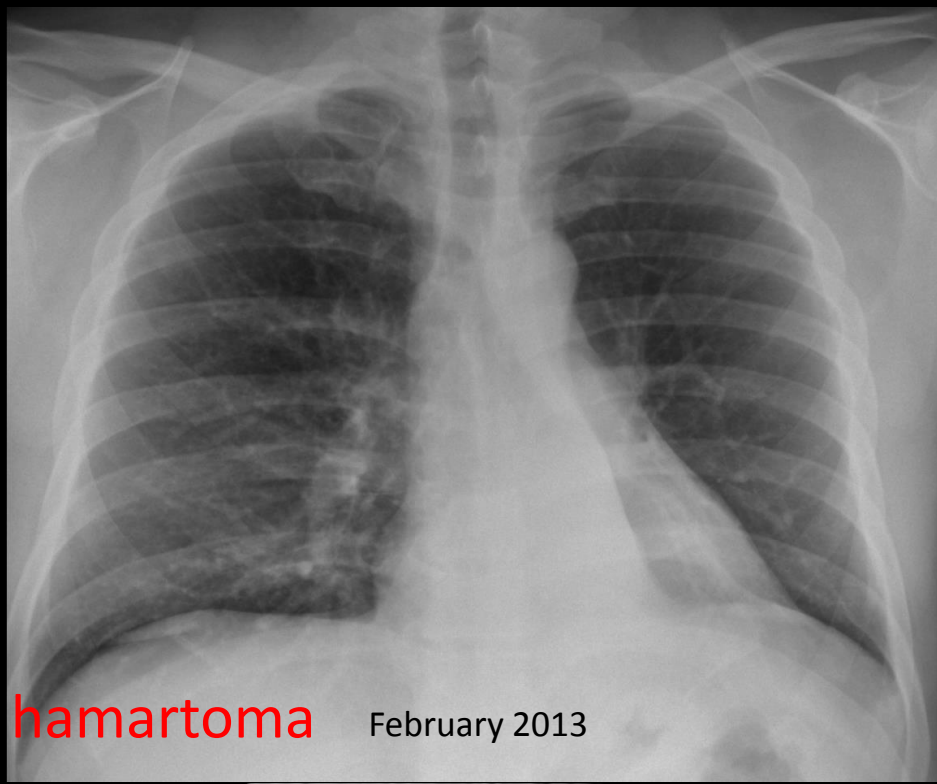
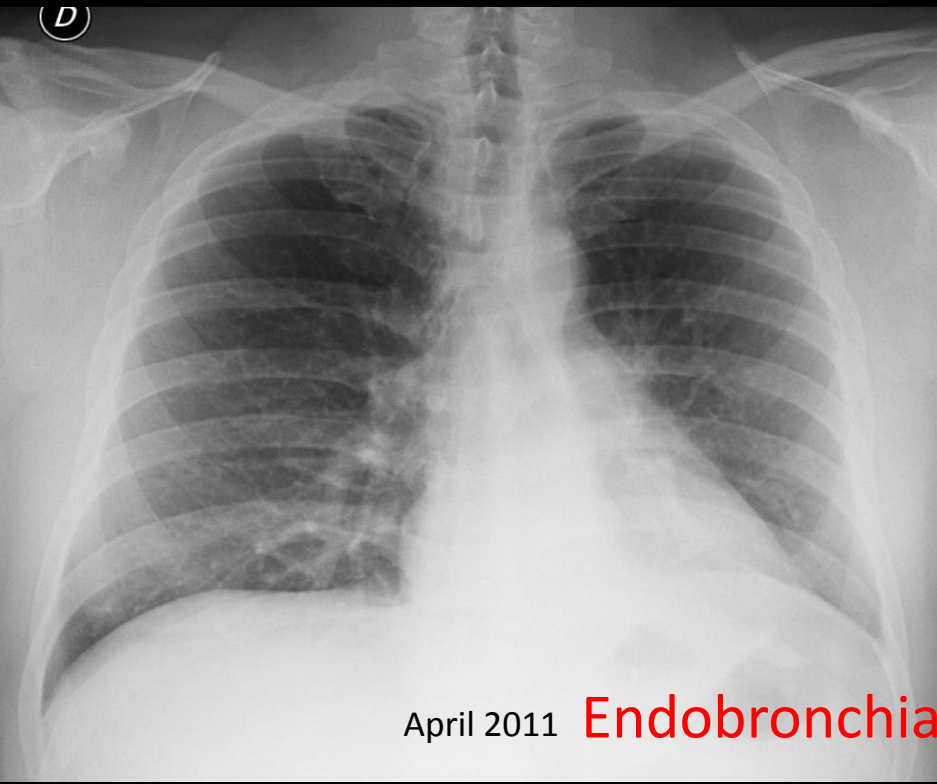
Carcinoma with marked LLL collapse



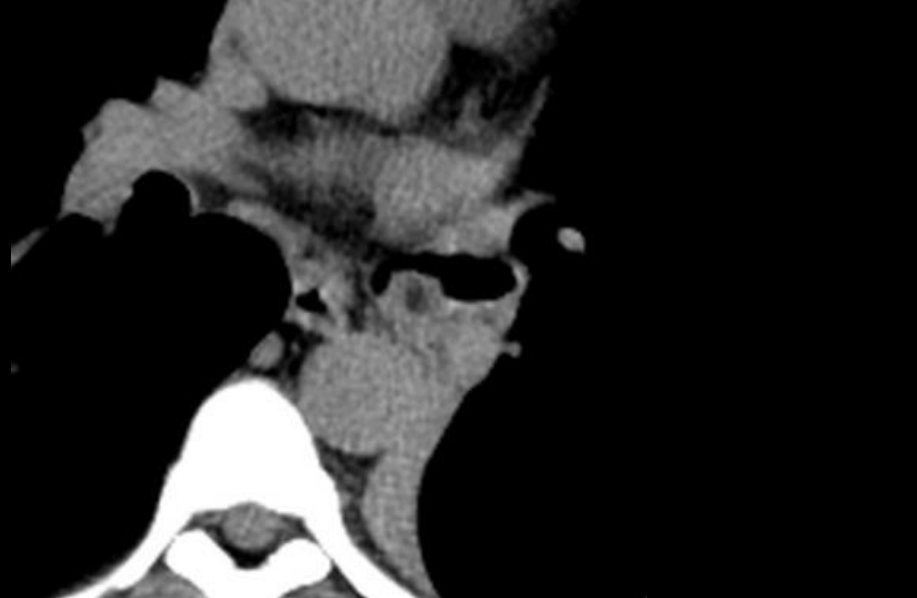
52 y.o. man with cough and fever



D



Endobronchial hamartoma





Do you see any abnormality?
If so, where?

1. Right upper quadrant
2. Right lower quadrant
3. Left upper quadrant
4. Left lower quadrant



Ar: 8.0 mm sq
Av: 14.2 HU
SD: 6.1

D

LOWER AREA BASICK CHECKLIST:

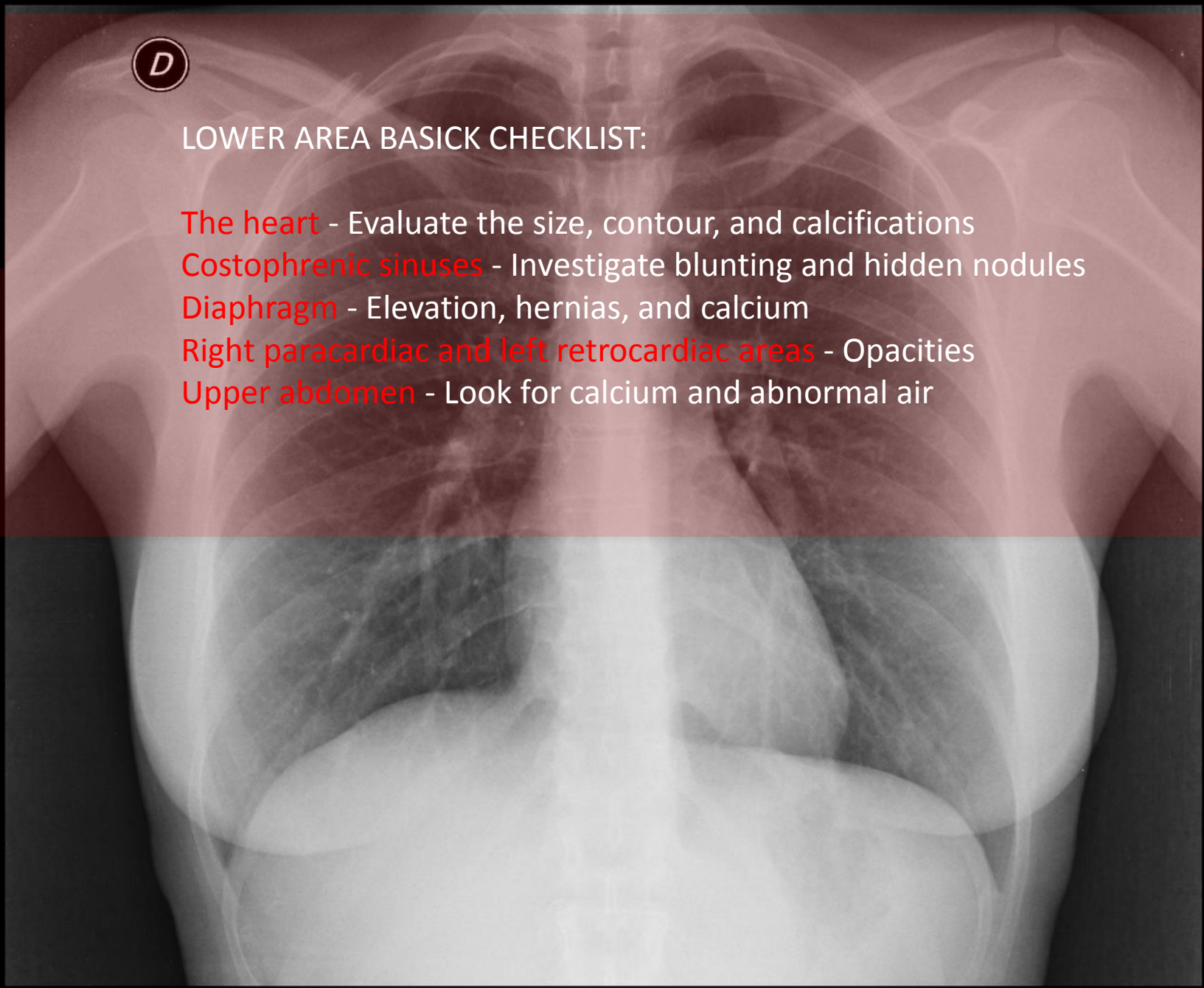
The heart - Evaluate the size, contour, and calcifications

Costophrenic sinuses - Investigate blunting and hidden nodules

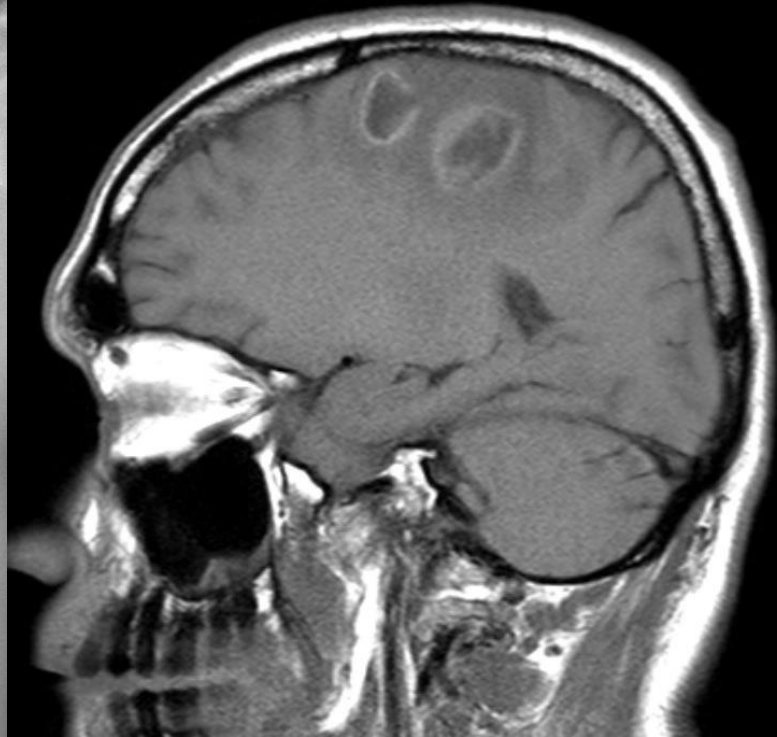
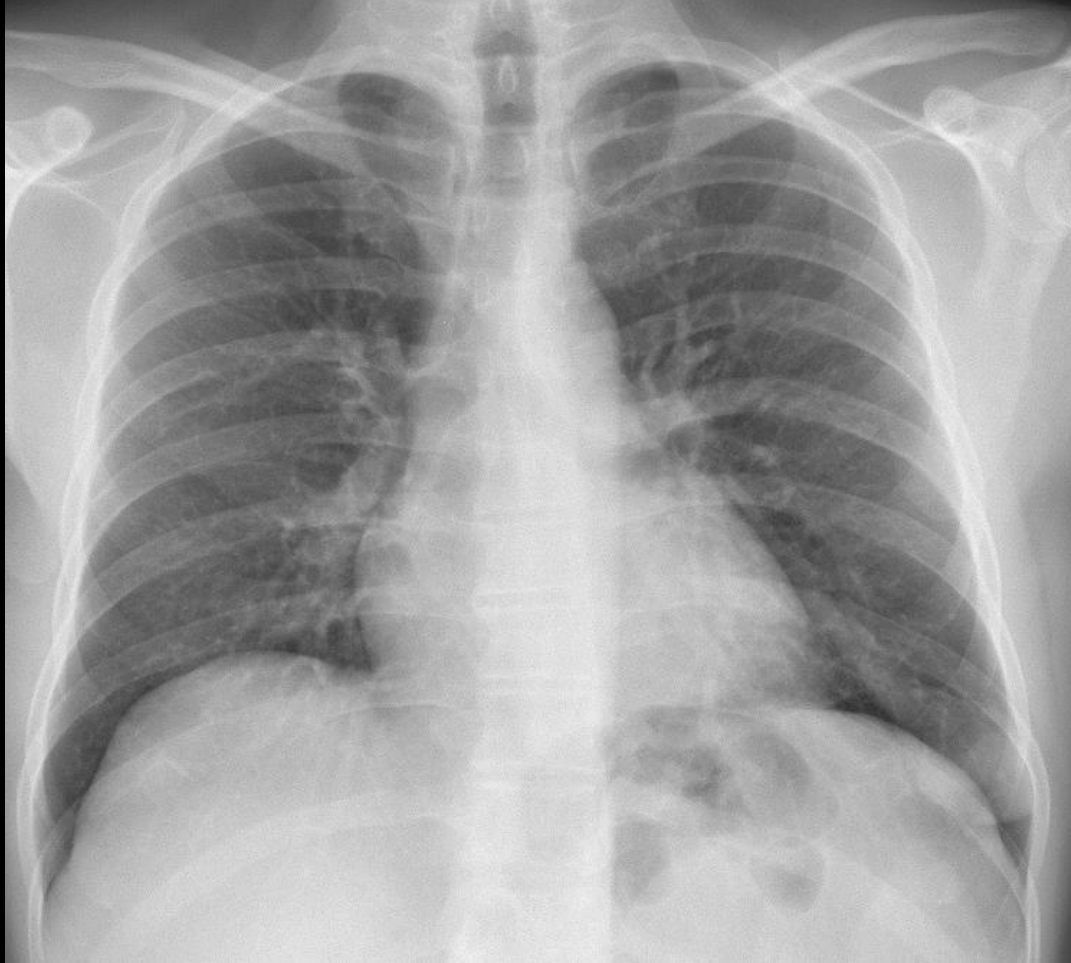
Diaphragm - Elevation, hernias, and calcium

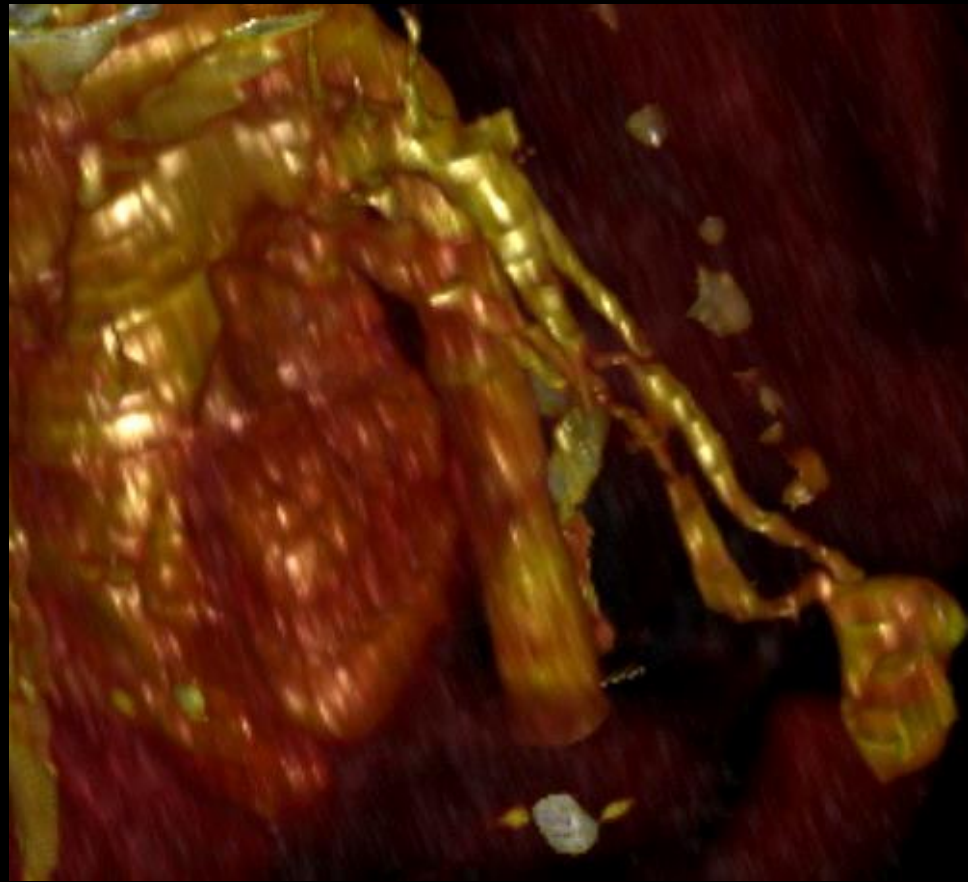
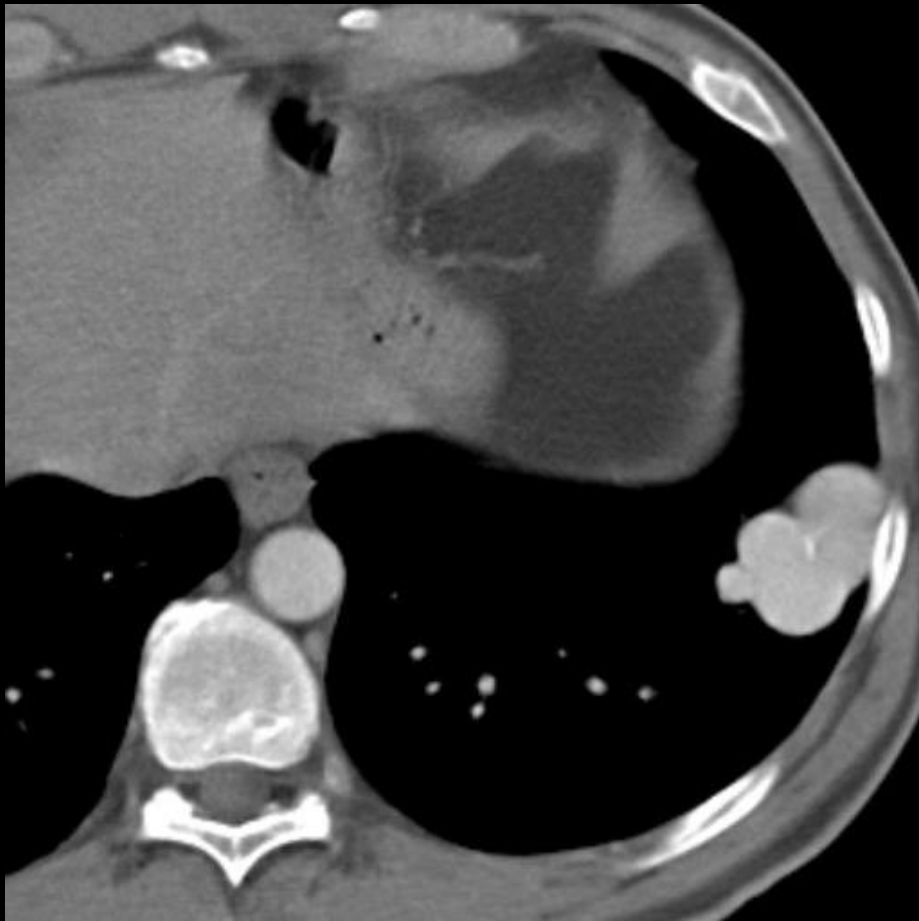
Right paracardiac and left retrocardiac areas - Opacities

Upper abdomen - Look for calcium and abnormal air



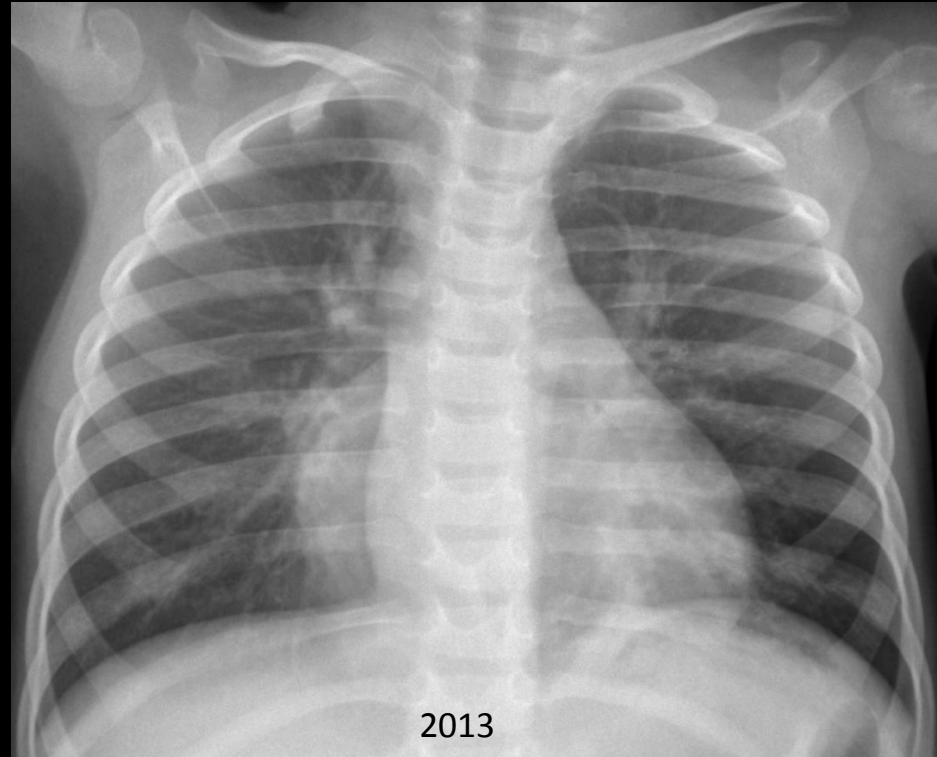
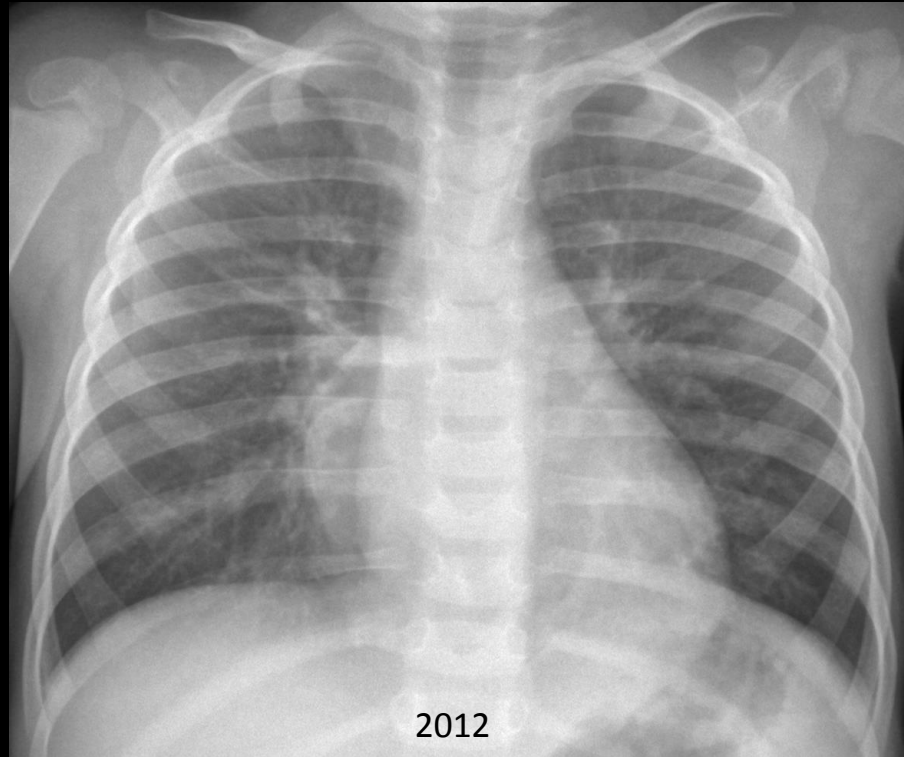
Preoperative chest in a 42 y.o. man with brain lesions



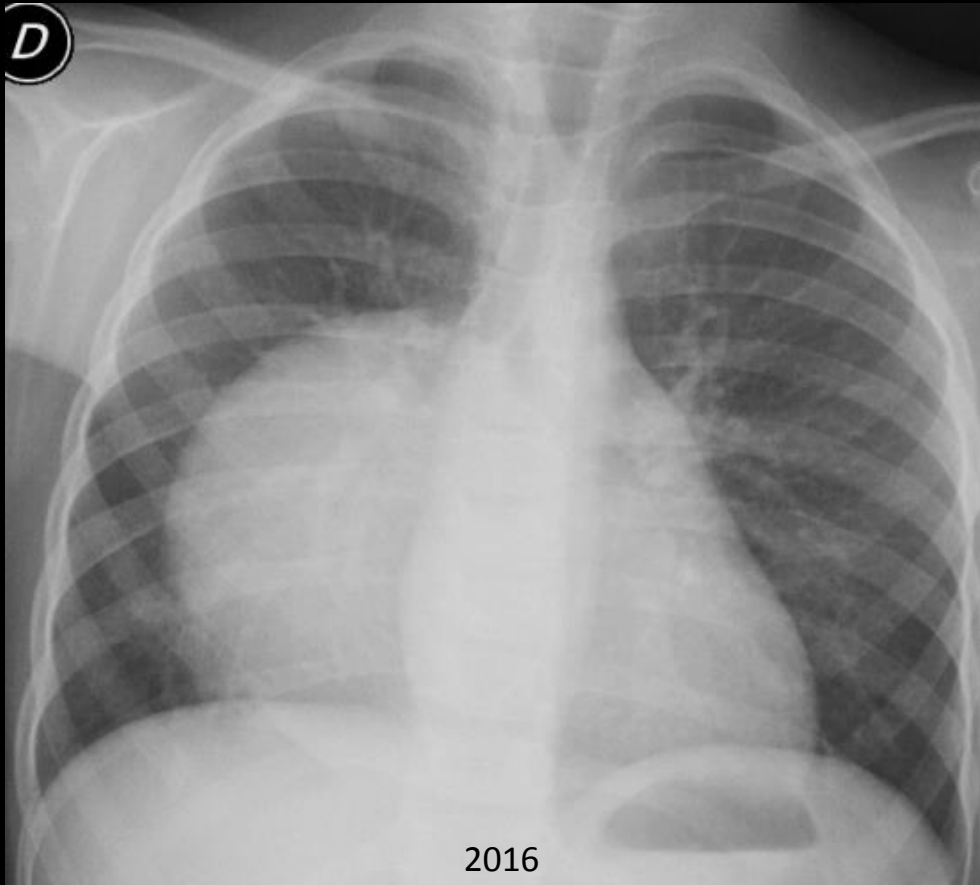


Pulmonary AVM and brain abscesses

Seven y.o. boy with a history of pneumonia in two consecutive years

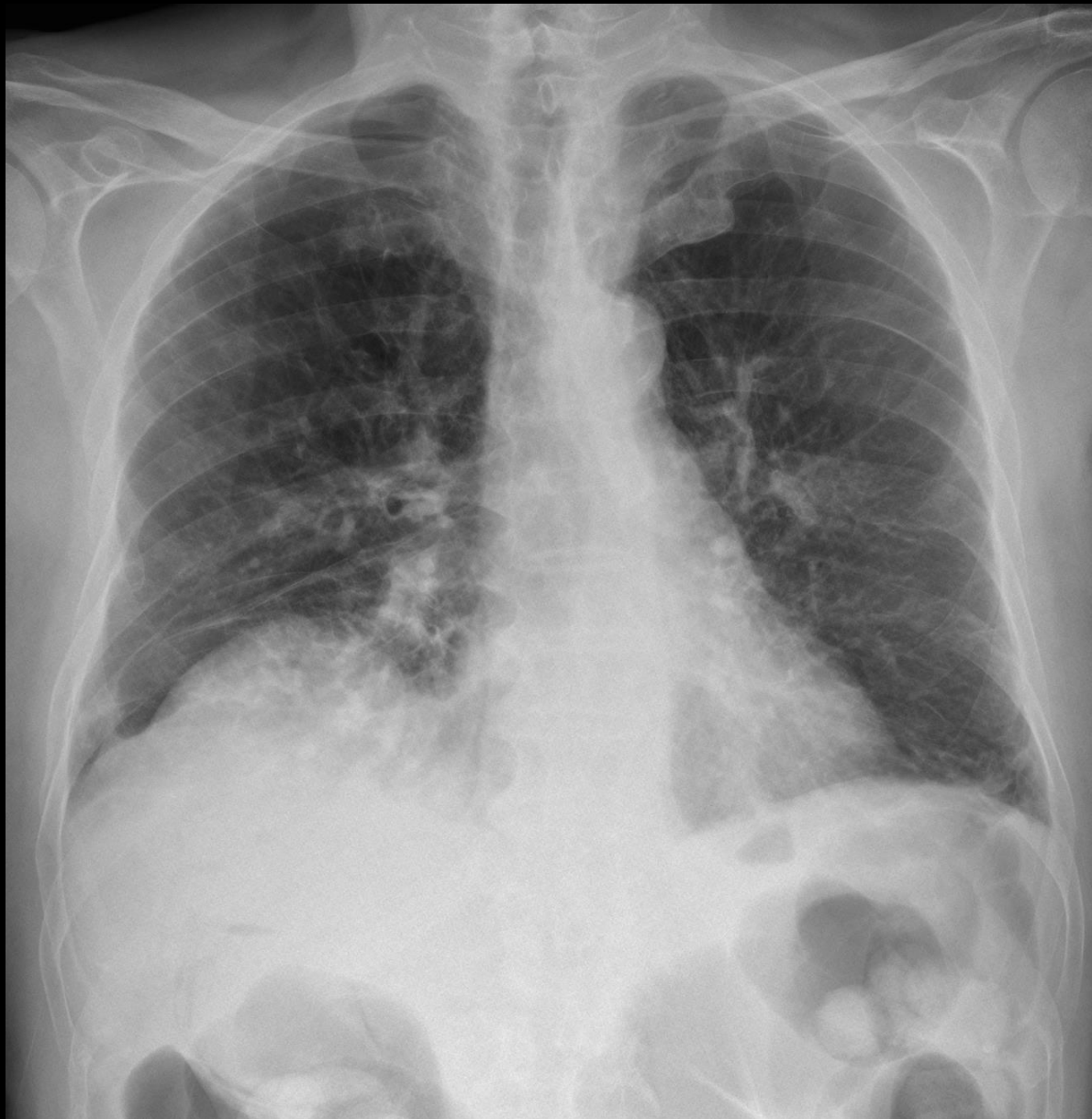


Neuroblastoma



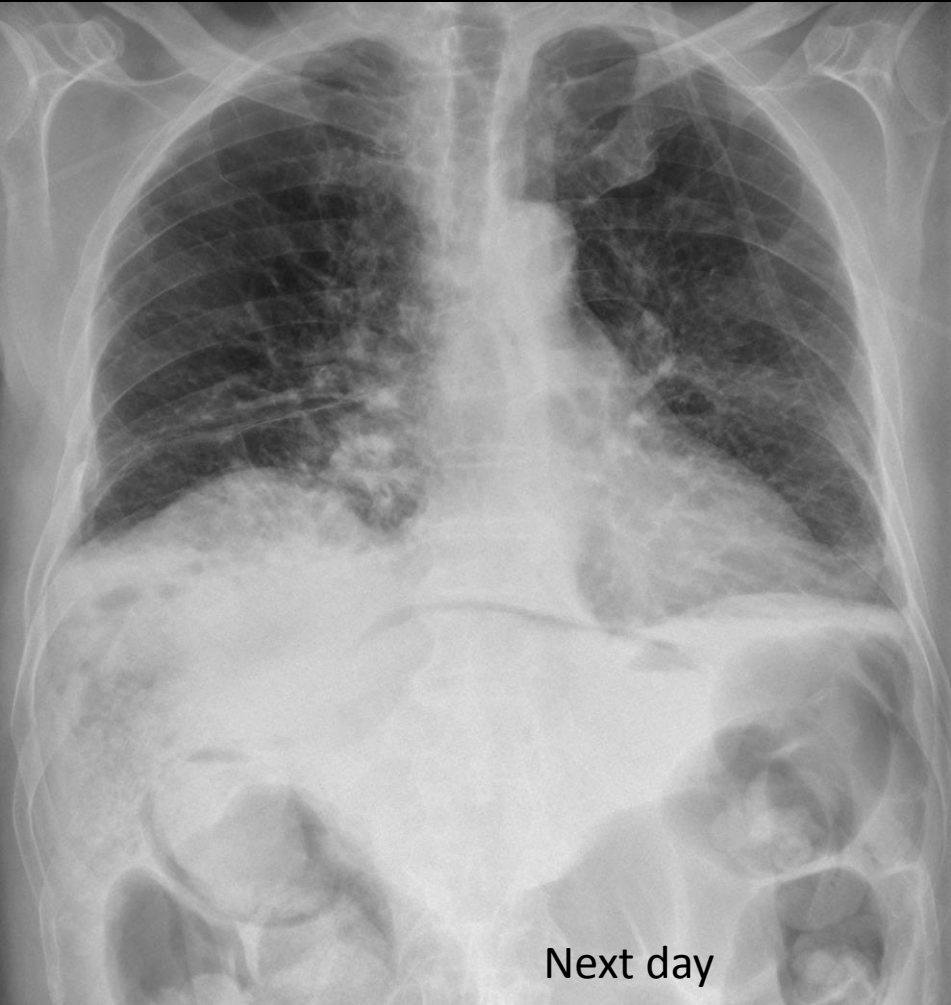
CASE 6

80 y.o. man with abdominal pain after embolization of liver metastases



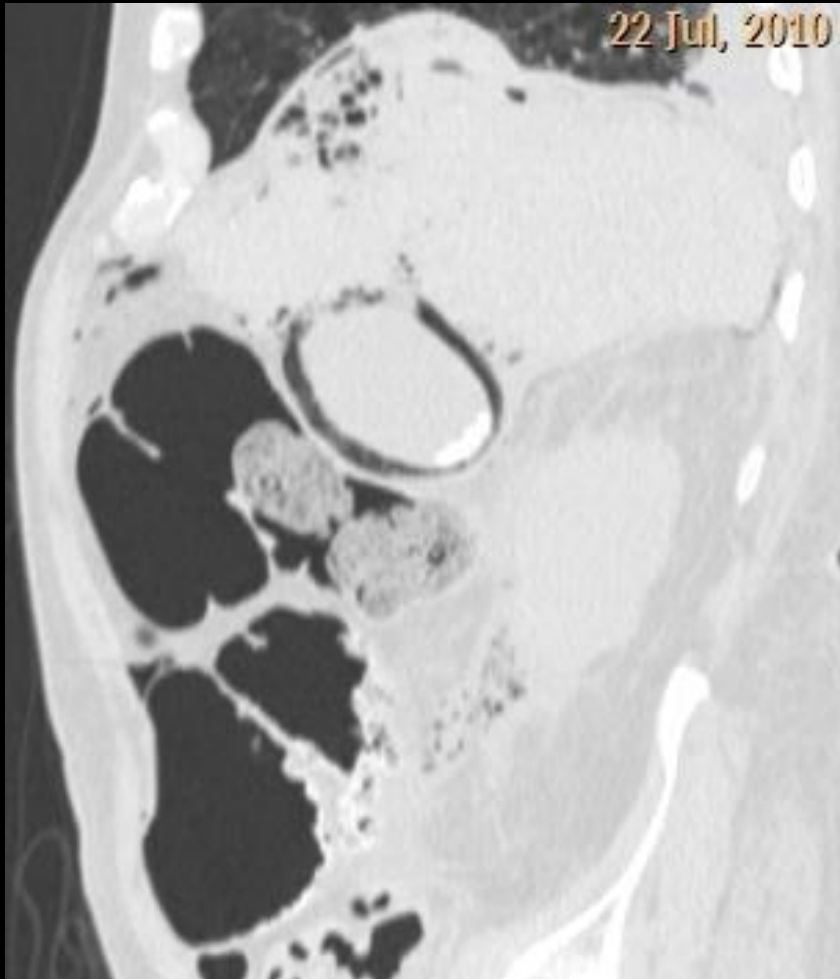
Do you see any abnormality?
If so, where?

1. Right upper quadrant
2. Right lower quadrant
3. Left upper quadrant
4. Left lower quadrant



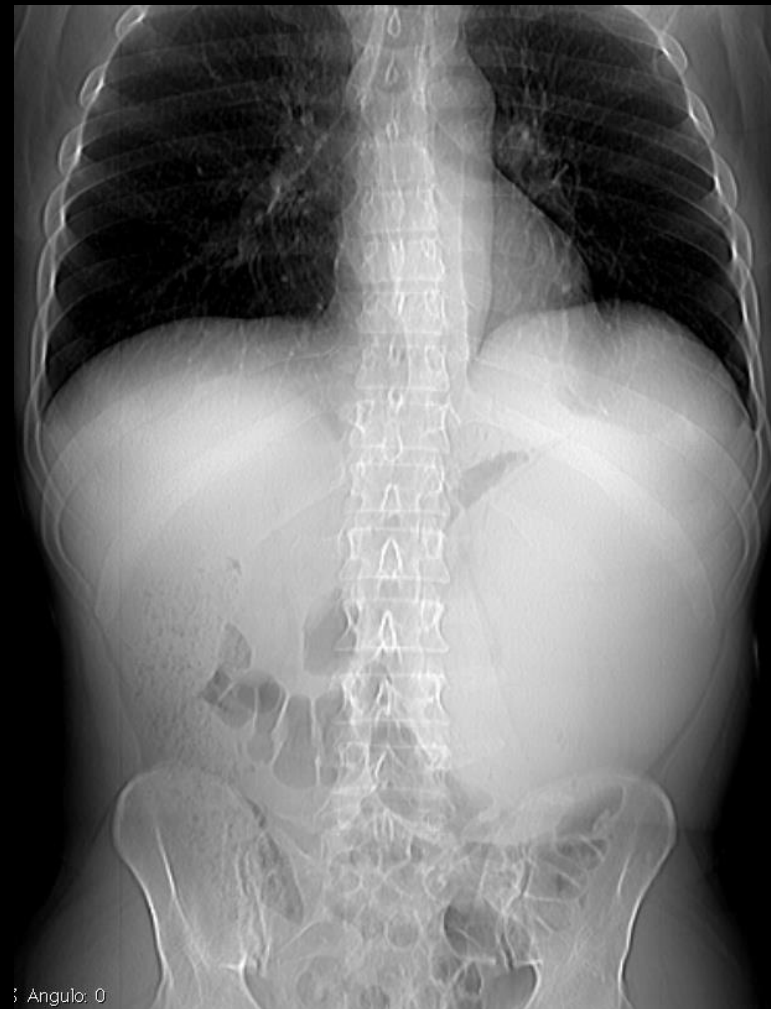
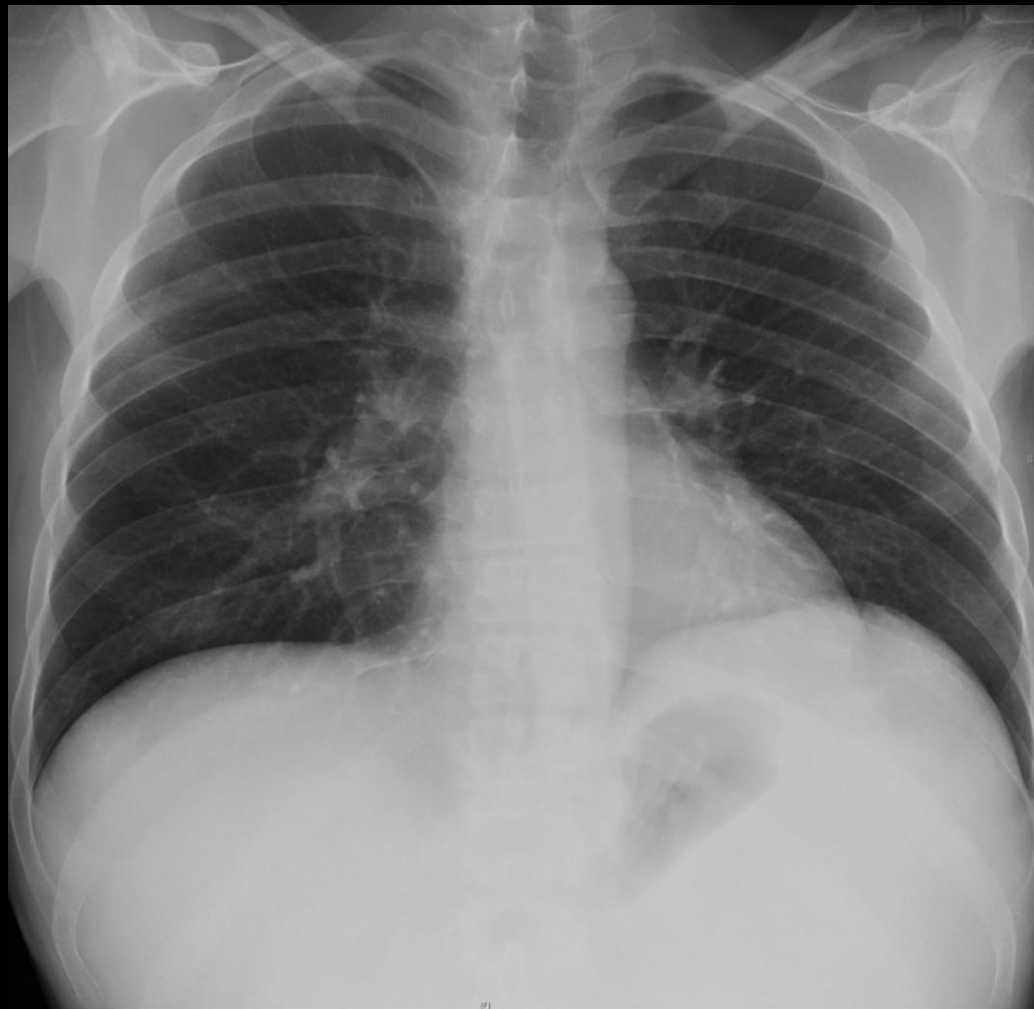
Next day





Final diagnosis: pneumoperitoneum and emphysematous cholecystitis after embolization

54 y.o. man with fever and malaise



Lymphoma

'It has been years since I read a book so powerful
and so thought-provoking' MALCOLM GLADWELL

BY THE
BESTSELLING
AUTHOR OF
COMPLICATIONS
AND BETTER

THE CHECKLIST

MANIFESTO
HOW TO GET THINGS RIGHT

ATUL GAWANDE

On October 30, 1935, the U.S. Army Air Corps held a flight competition. The Model 299 lifted off smoothly, then turned on one wing, and crashed in a fiery explosion.

An investigation revealed that the crash had been due to “pilot error.” This new plane was too complicated to be left to the memory of any pilot, however expert.

The Boeing model was deemed “too much airplane for one man to fly.” They created a pilot’s checklist, with step-by-step checks for takeoff, flight, landing, and taxiing.

With the checklist in hand, the pilots went on to fly the Model 299 a total of 1.8 million miles without one accident.