

# Chest Radiography

## Lecture 15

### Metastatic Disease

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# METASTATIC DISEASE

INDICATIONS: dyspnea, chest pain, cough, known primary tumor, malaise, weight loss.

FINDINGS: multiple variably sized pulmonary nodules and masses; post-obstructive consolidation; lymphangitic mets with interstitial density; multiple bone lesions.

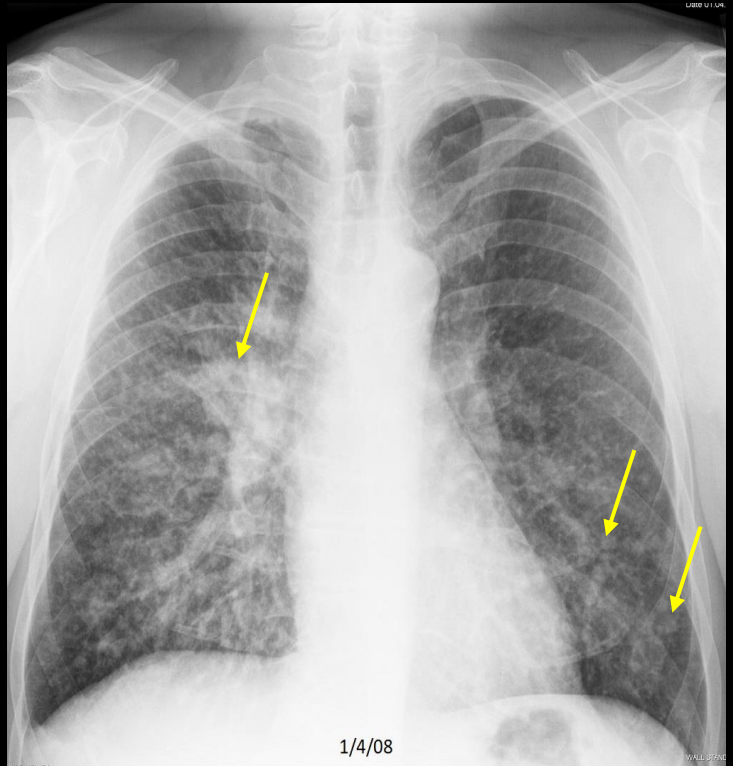
IMPRESSION: Diagnose if there are multiple, variably sized pulmonary nodules and masses WITHOUT findings of sepsis. With sepsis, consider septic emboli (very rare). Diagnose if there are obvious metastatic bone lesions. These patients will nearly always have a CT done for further evaluation.

**METASTATIC DISEASE**

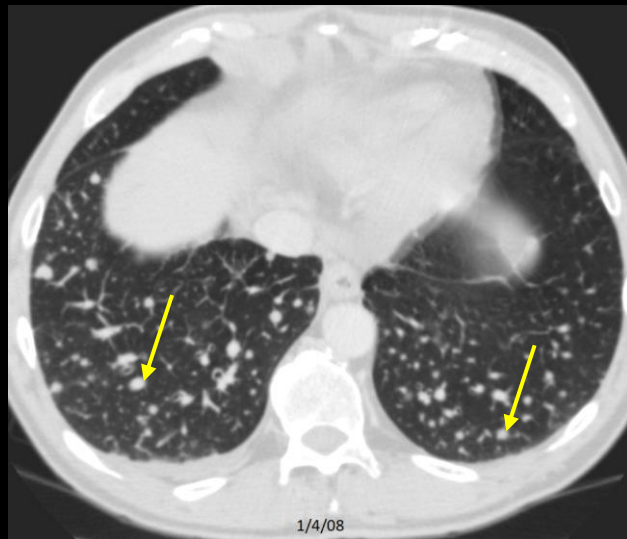
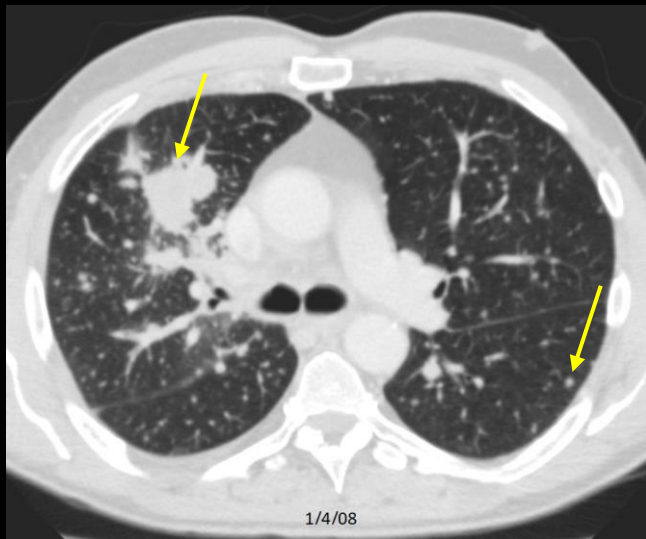
**ILLUSTRATED FINDINGS**



C563. 57 year old man with dyspnea and cough. There are multiple, variably sized pulmonary nodules and masses in both lungs.



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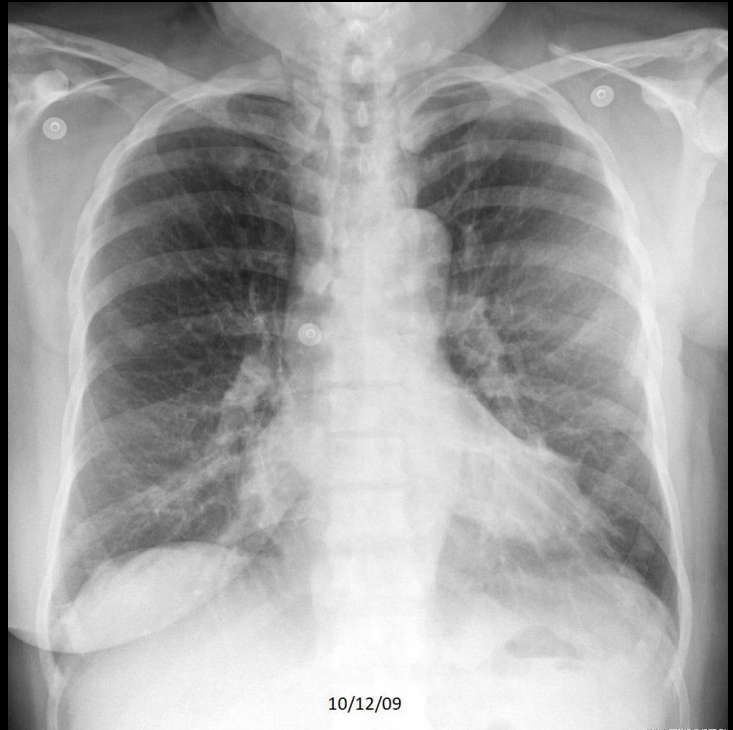


C563. 57 year old man with dyspnea and cough. CT confirms **multiple, variably sized pulmonary nodules and masses in both lungs**. The patient was subsequently diagnosed with adenocarcinoma of the lung (with lung metastases).

**EXTENSIVE METASTASES**

**EXAMPLES**

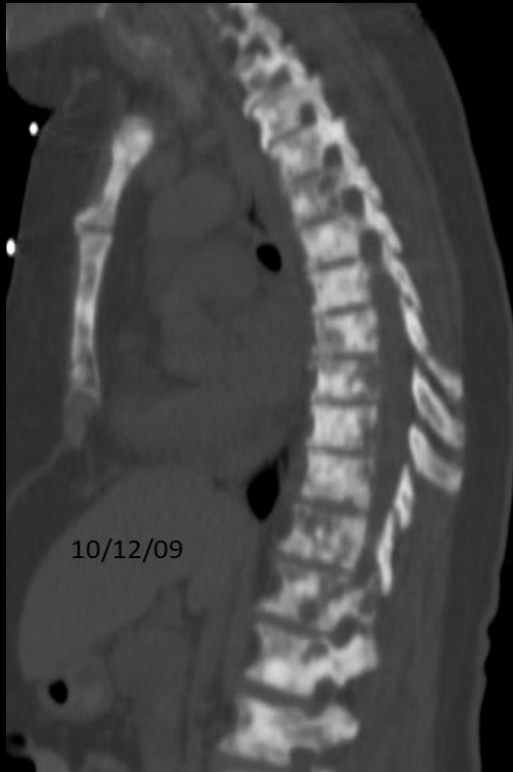
# Example 1 of 5



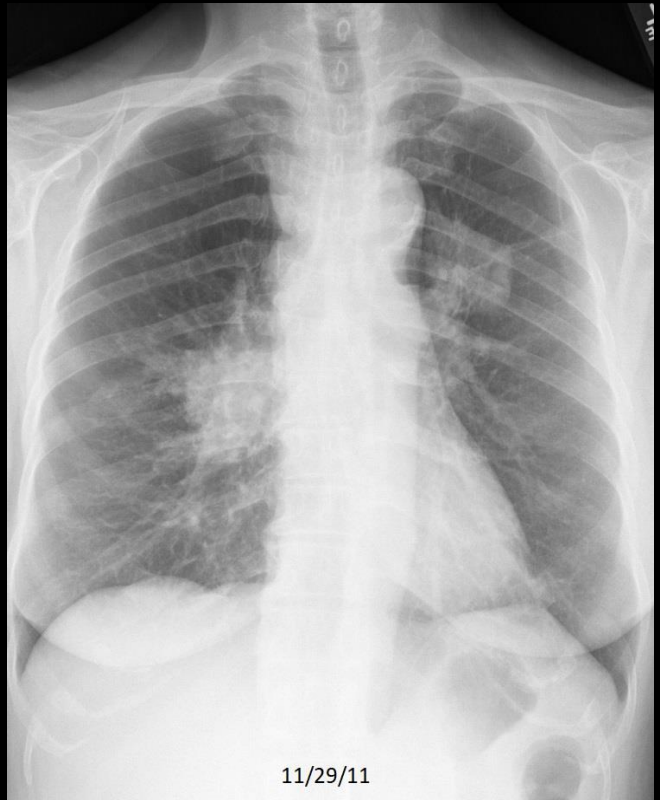
C136. 70 year old woman with chronic chest pain. Absent breast shadow and multiple sclerotic bone metastases. Metastatic breast cancer.



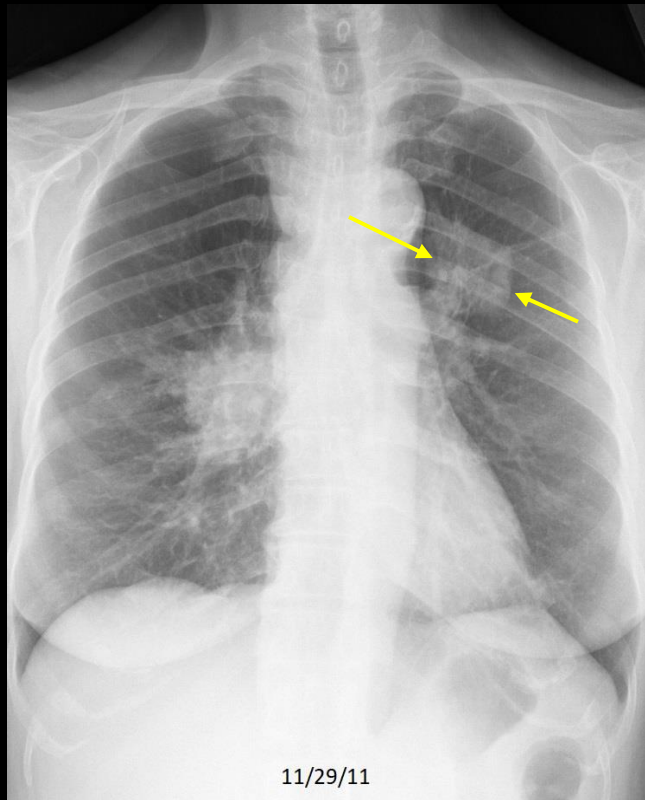
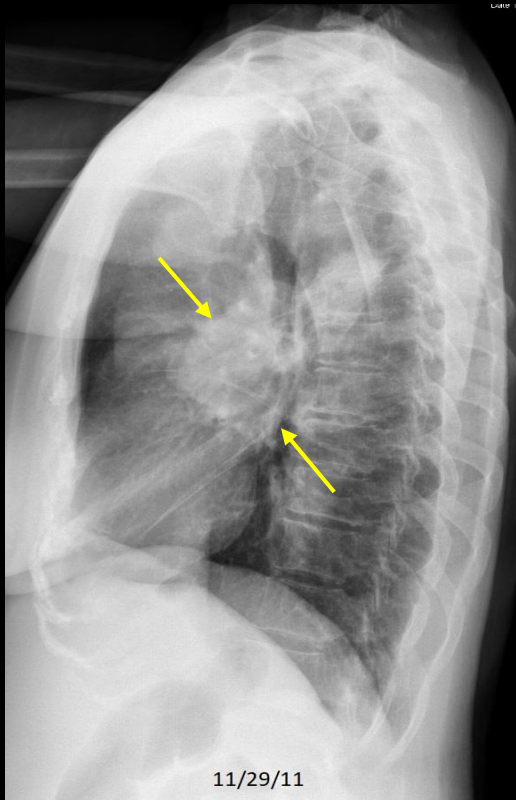
# Example 1 of 5



## Example 2 of 5

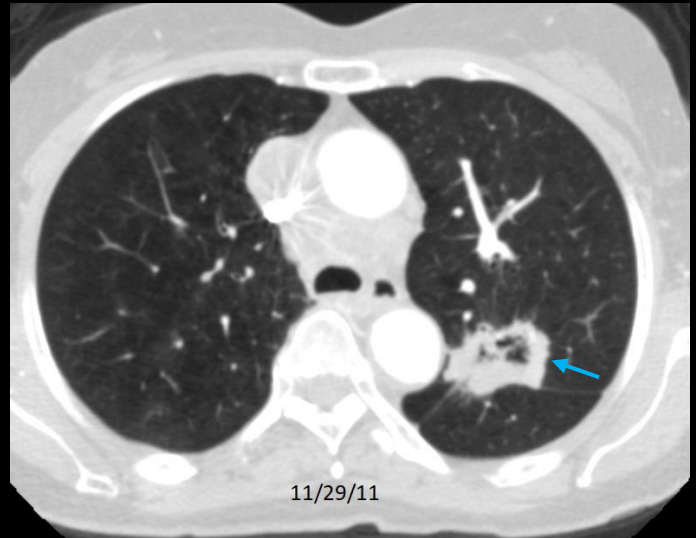
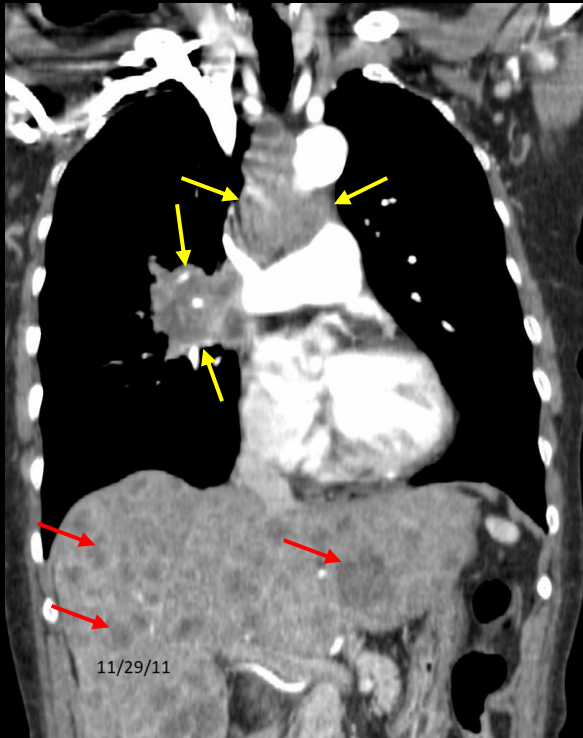


## Example 2 of 5



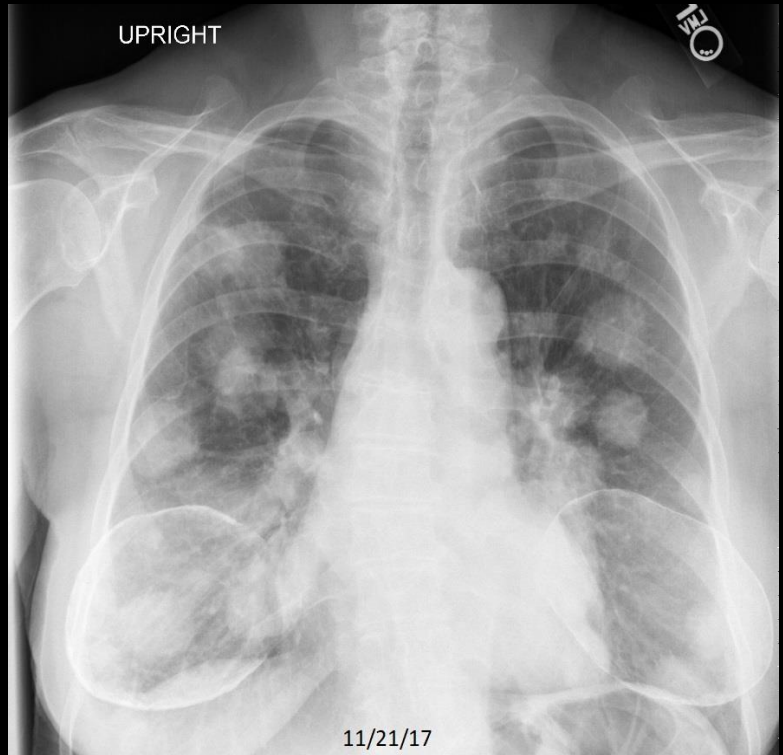
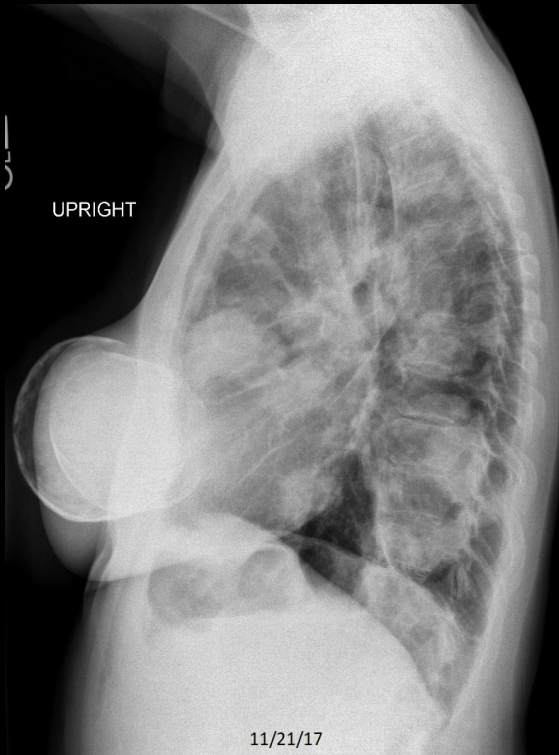
C152. 74 year old woman with chronic cough. **Multiple variably sized masses.** Small cell lung carcinoma.

## Example 2 of 5



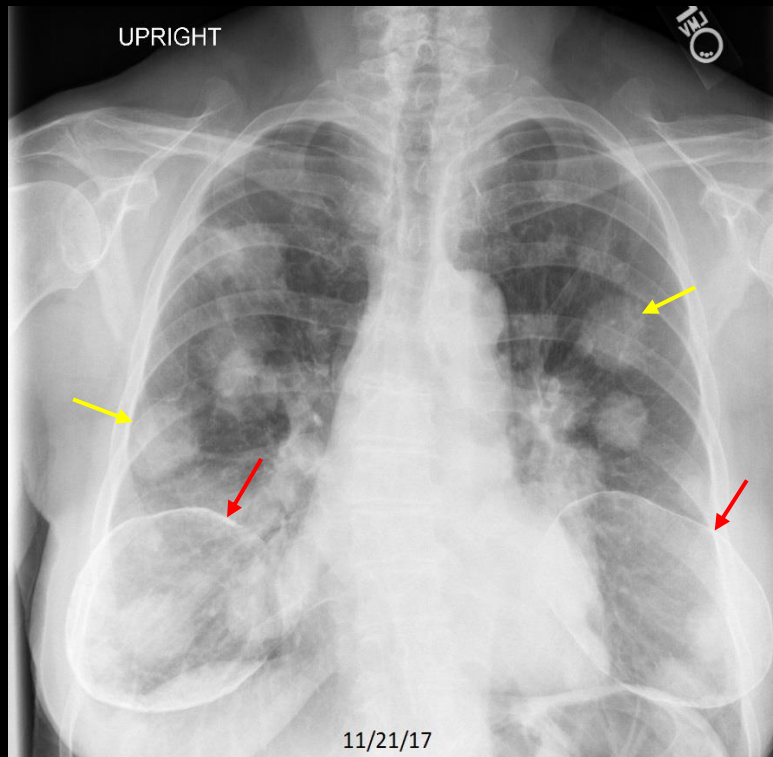
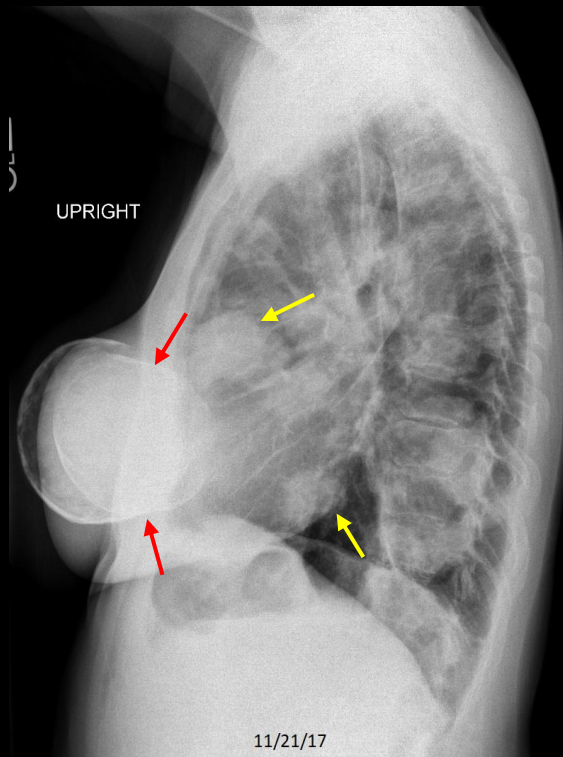
C152. 74 year old woman with chronic cough. Multiple variably sized masses. Small cell lung carcinoma. Lung CT shows **hilar and mediastinal lymphadenopathy** and **multiple liver metastases** and a **cavitary lung mass**.

## Example 3 of 5



C160. 73 year old woman with acute cough. Multiple variably sized nodules and masses. The patient also has calcified mammary implants. Metastatic colon cancer.

## Example 3 of 5



C160. 73 year old woman with acute cough. **Multiple variably sized nodules and masses.** The patient also has **calcified mammary implants.** Metastatic colon cancer.

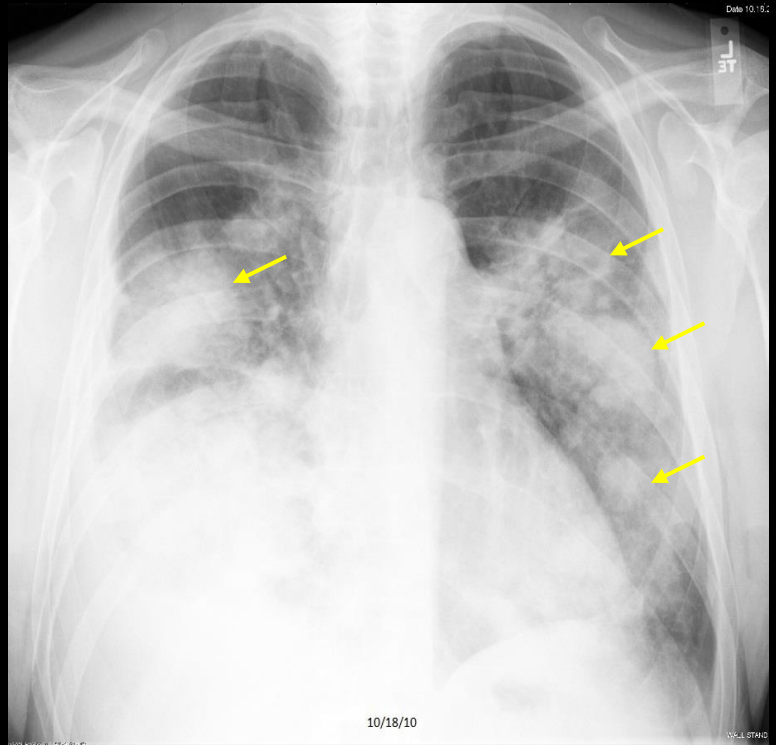
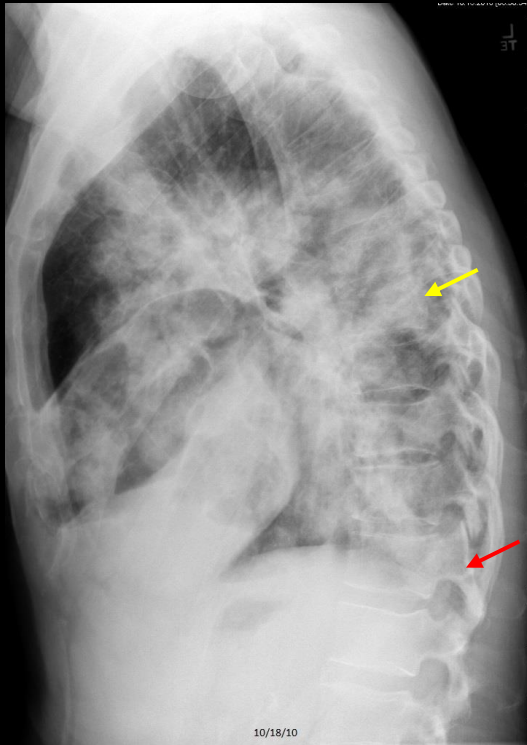


## Example 4 of 5



C169. 58 year old man with acute cough. Multiple, variably sized masses and a right pleural effusion. Lymphoma.

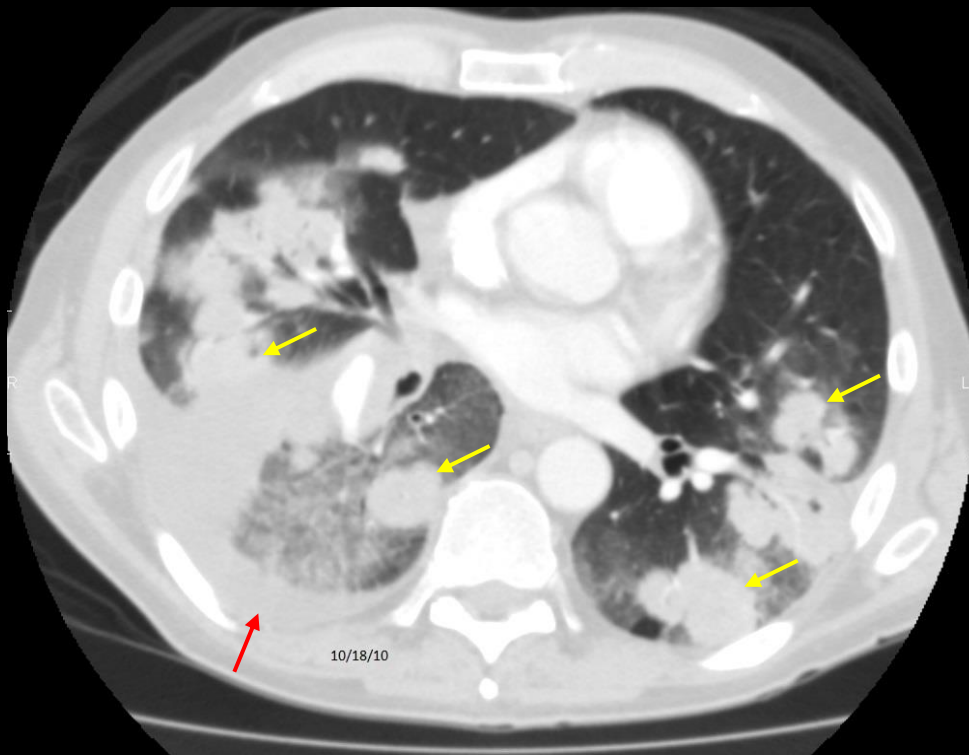
## Example 4 of 5



C169. 58 year old man with acute cough. Multiple, variably sized masses and a right pleural effusion. Lymphoma.



## Example 4 of 5



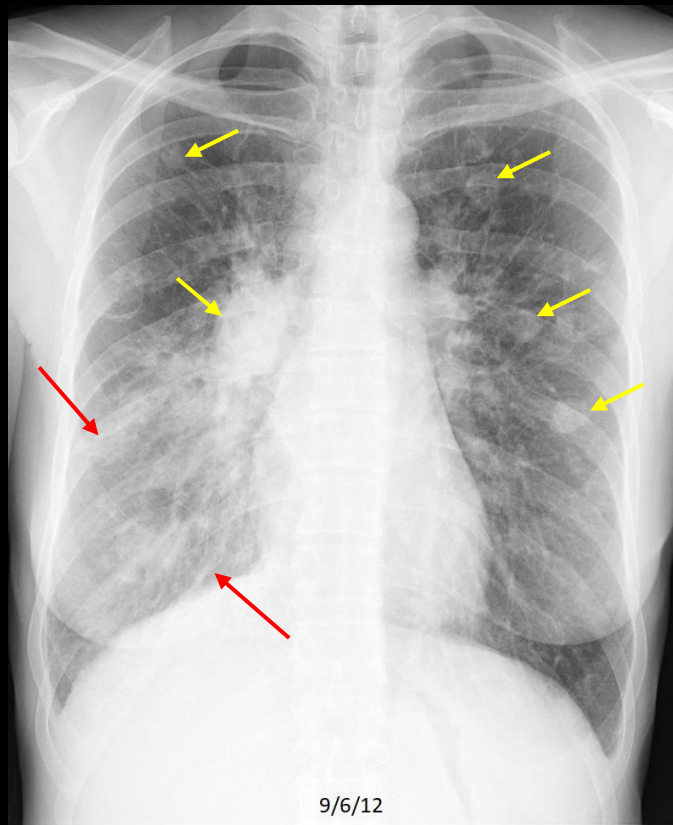
C169. 58 year old man with acute cough. Multiple, variably sized masses and a **right pleural effusion**. Lymphoma.

## Example 5 of 5



C244. 47 year old woman with three months of cough. There are multiple variably sized pulmonary nodules, along with likely post-obstructive consolidation of the right lung. Metastatic renal cell carcinoma.

## Example 5 of 5



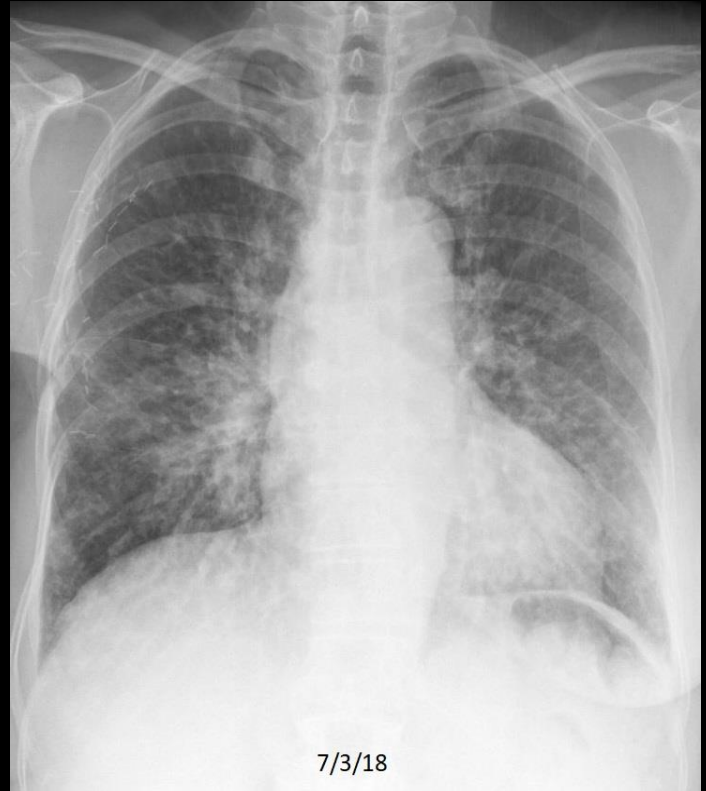
C244. 47 year old woman with three months of cough. There are **multiple variably sized pulmonary nodules**, along with **likely post-obstructive consolidation of the right lung**. Metastatic renal cell carcinoma.

# QUIZ

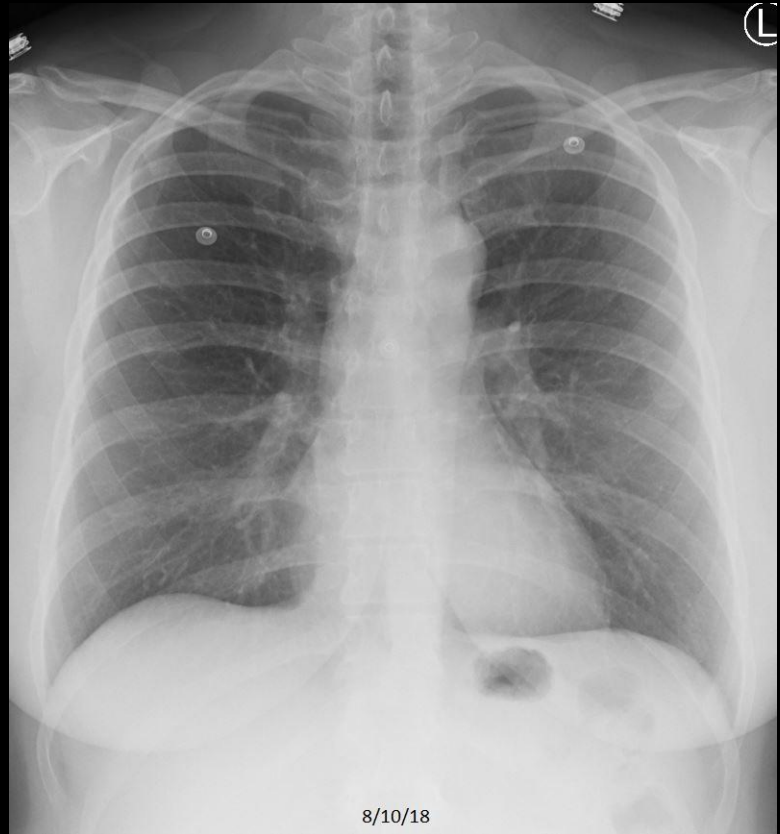
## NORMAL VERSUS METASTATIC DISEASE

**Select which CXR shows Metastatic Disease  
(a or b)  
for the following 5 pairs of cases**

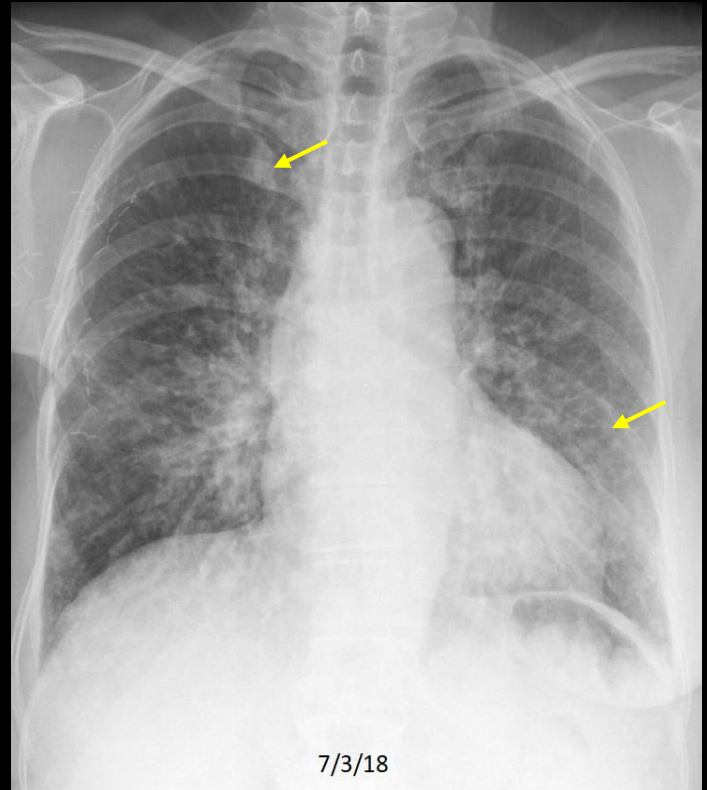
## Quiz Case 1 of 5 - A



## Quiz Case 1 of 5 - B

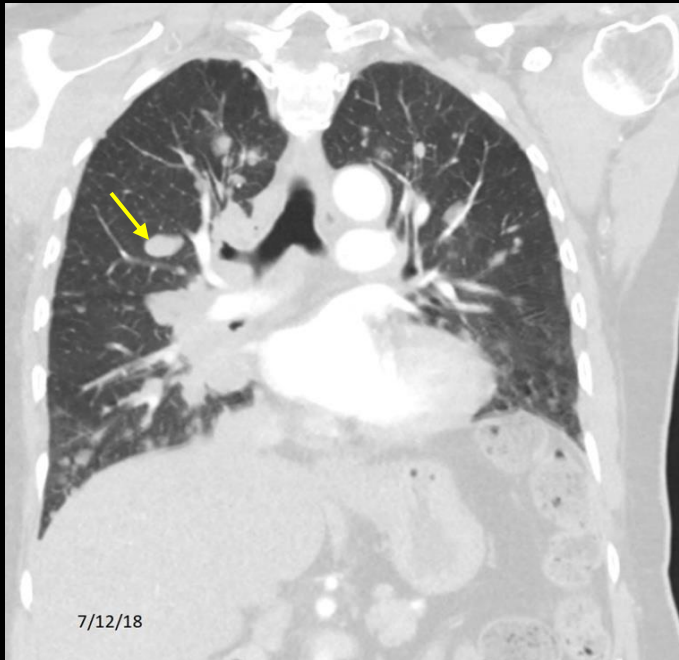


## Quiz Case 1 of 5 – A shows Metastatic Disease



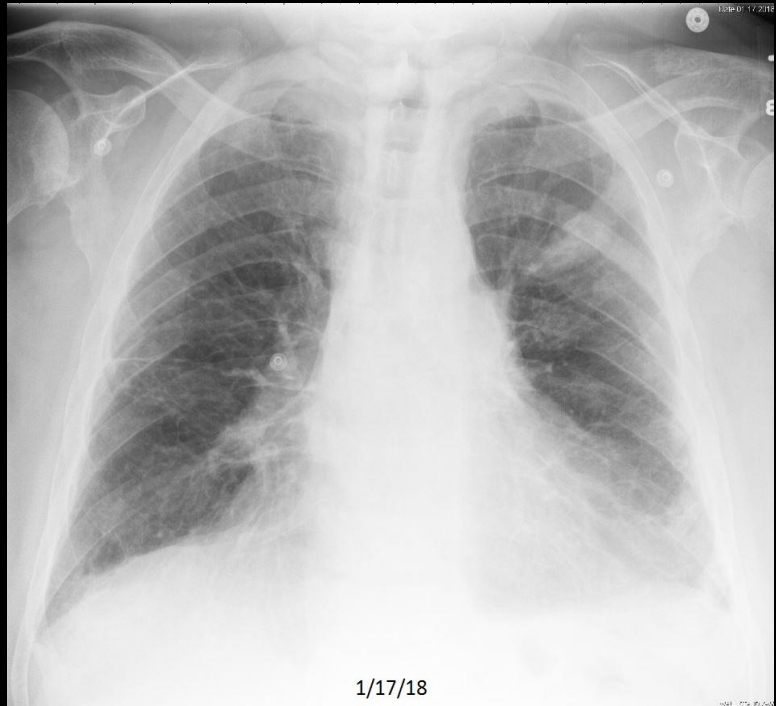


## Quiz Case 1 of 5 – A shows Metastatic Disease



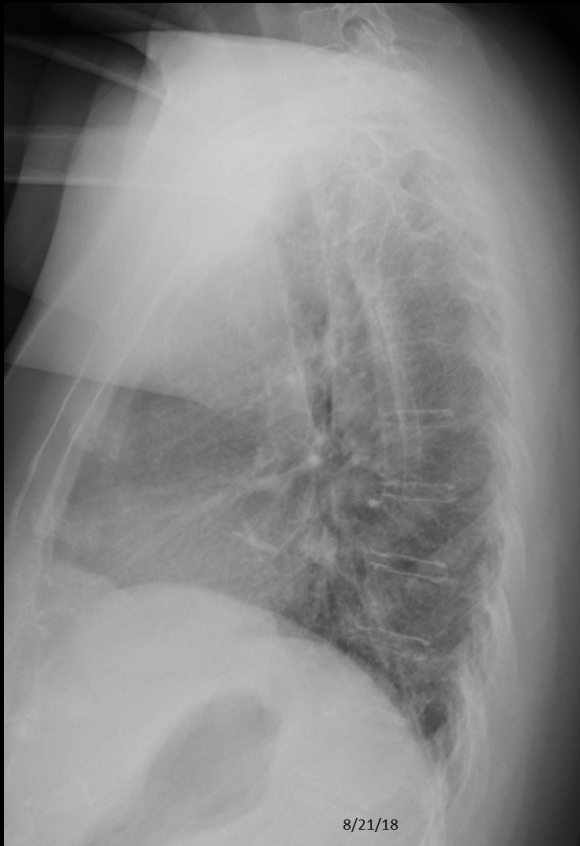


## Quiz Case 2 of 5 - A

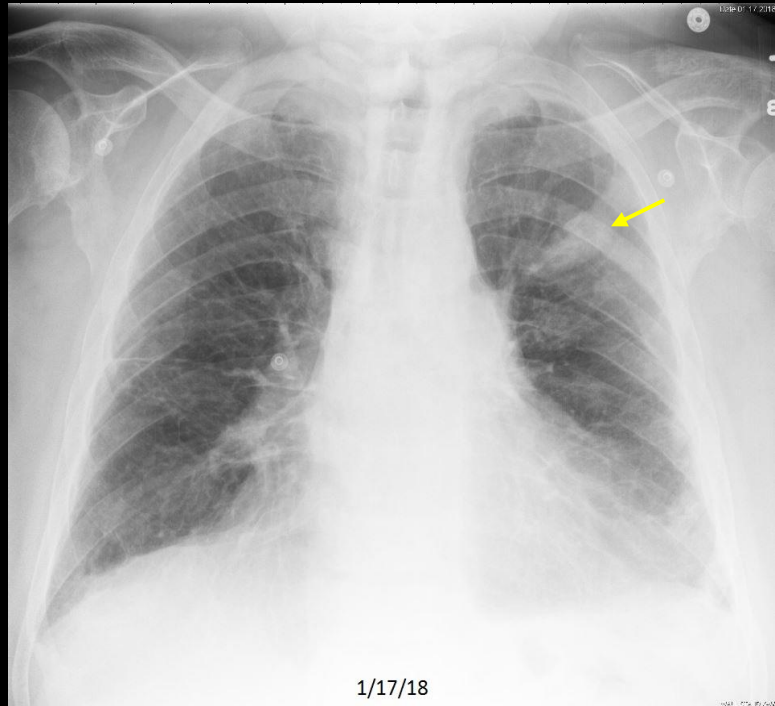
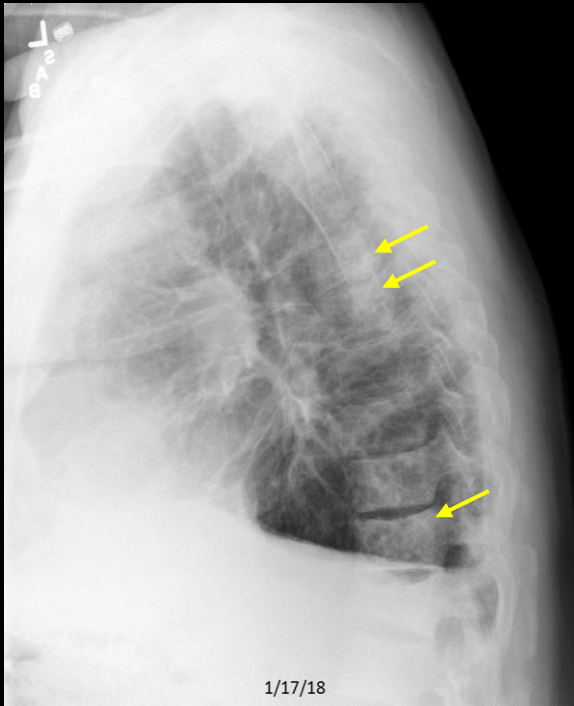


C368. 70 year old with chest pain and a history of prostate cancer.

## Quiz Case 2 of 5 - B

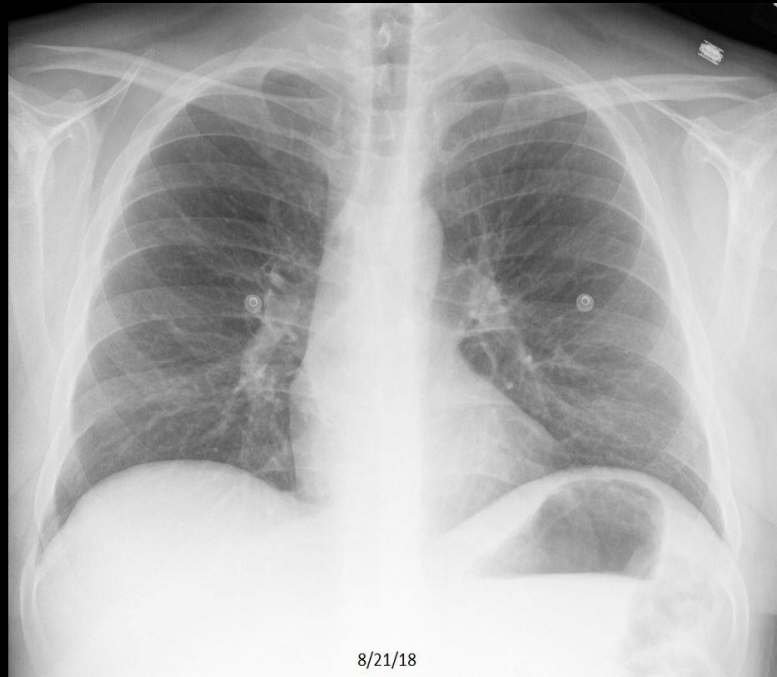
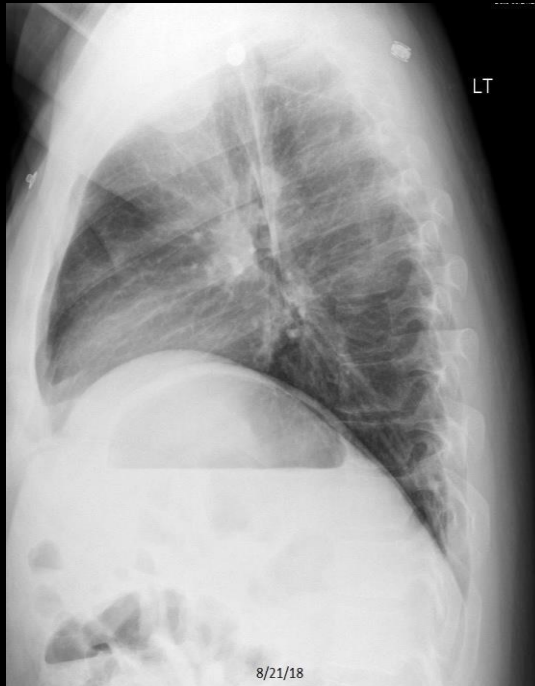


## Quiz Case 2 of 5 – A shows Metastatic Disease

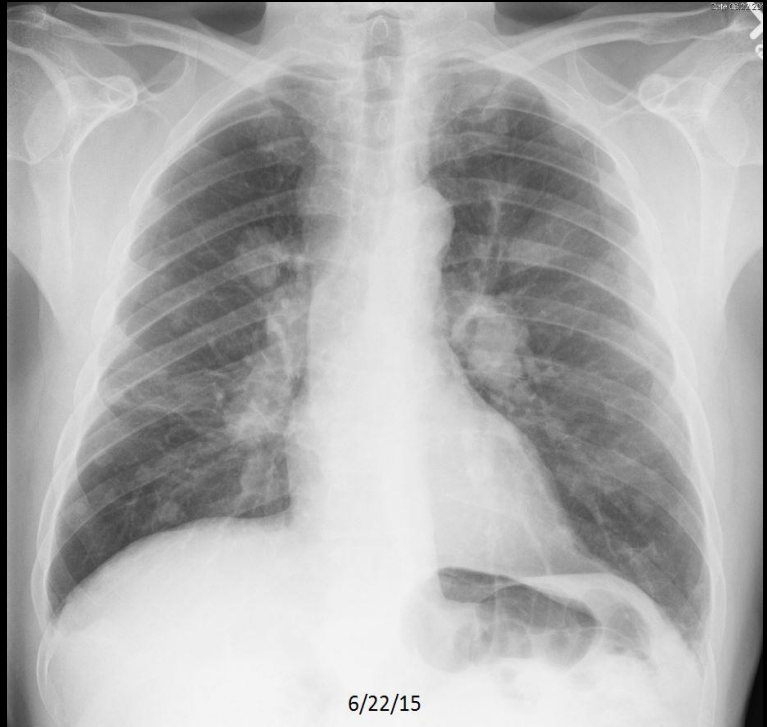
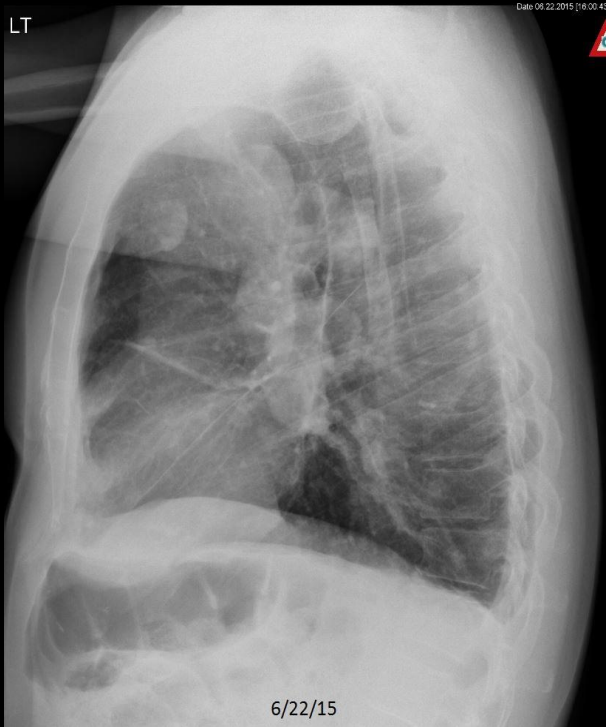


C368. 70 year old with chest pain and a history of prostate cancer. Multiple sclerotic bone lesions. Metastatic prostate cancer.

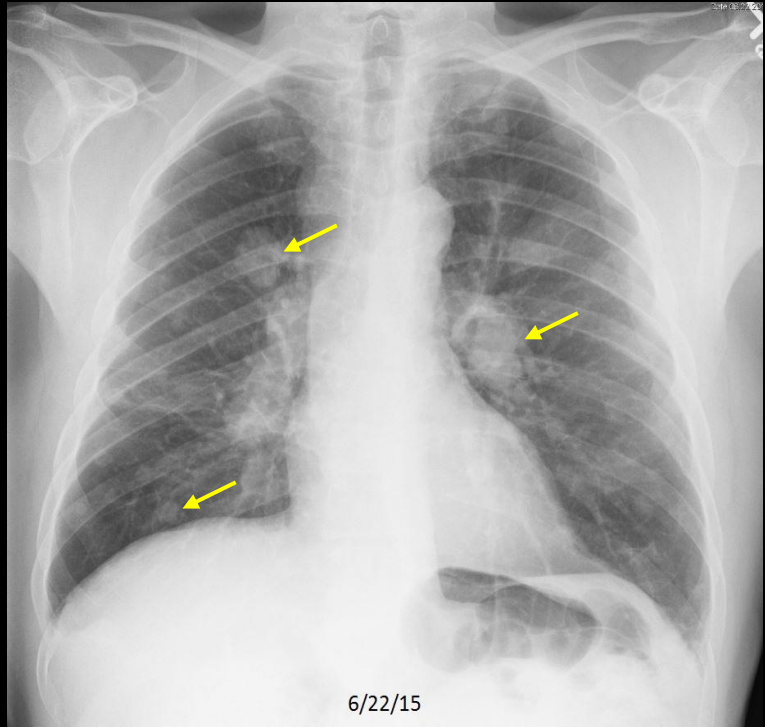
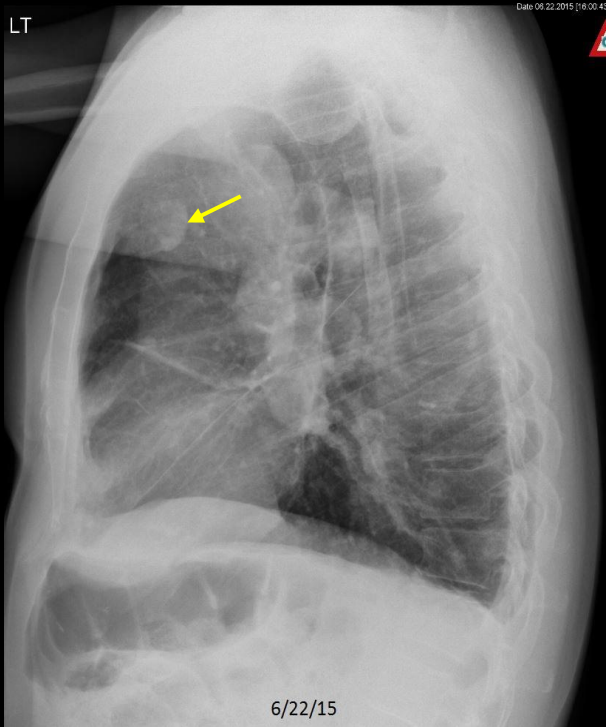
## Quiz Case 3 of 5 - A



## Quiz Case 3 of 5 - B

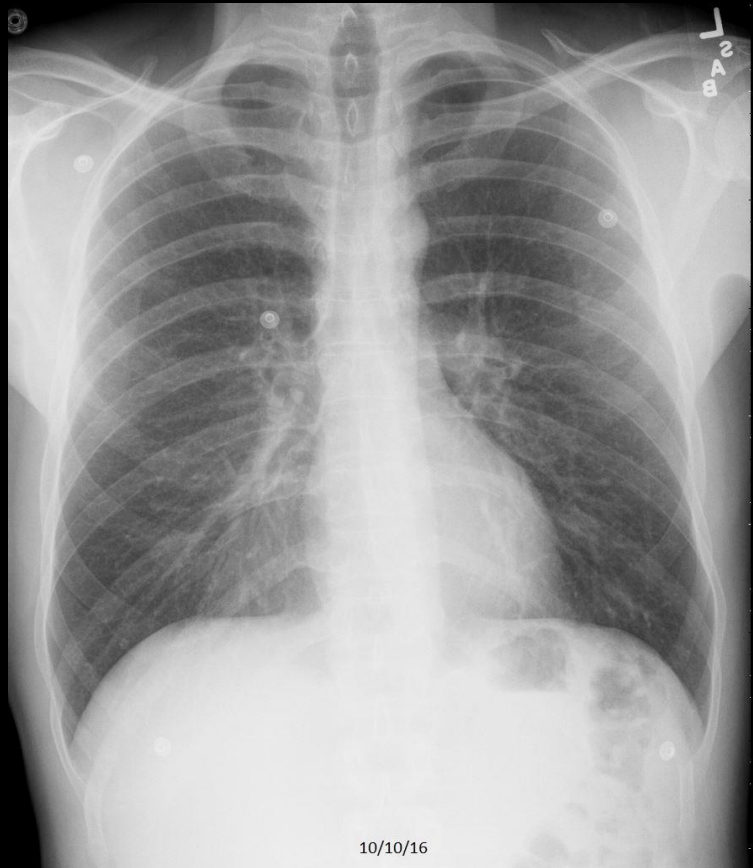


## Quiz Case 3 of 5 - B

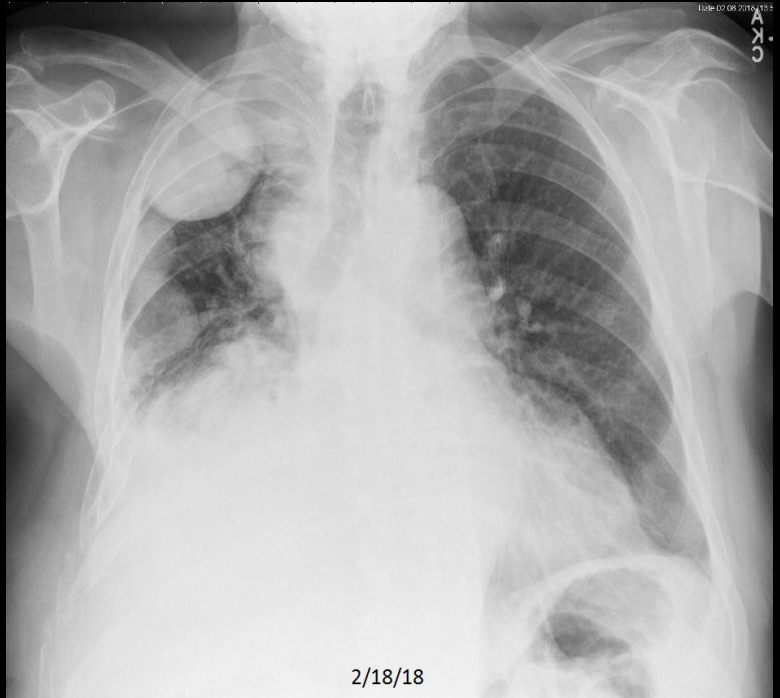




## Quiz Case 4 of 5 - A



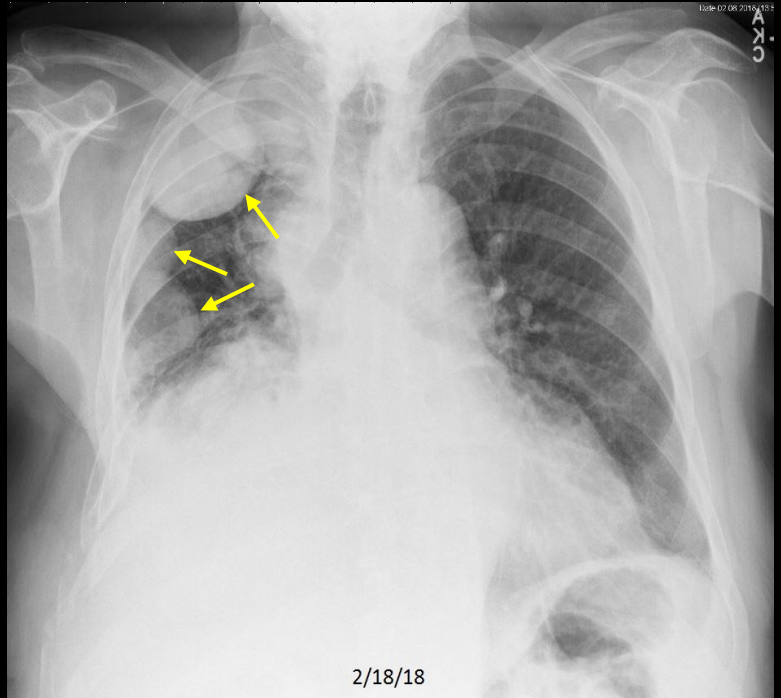
## Quiz Case 4 of 5 - B



C528. 78 year old man with dyspnea. Multiple right pleural masses. Mesothelioma.



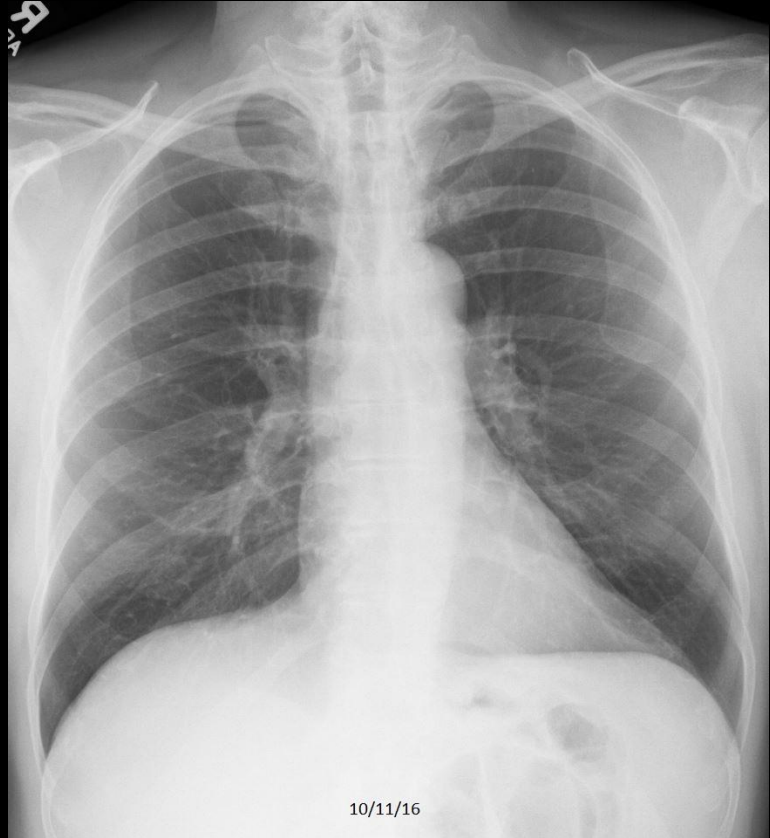
## Quiz Case 4 of 5 – B shows Metastatic Disease



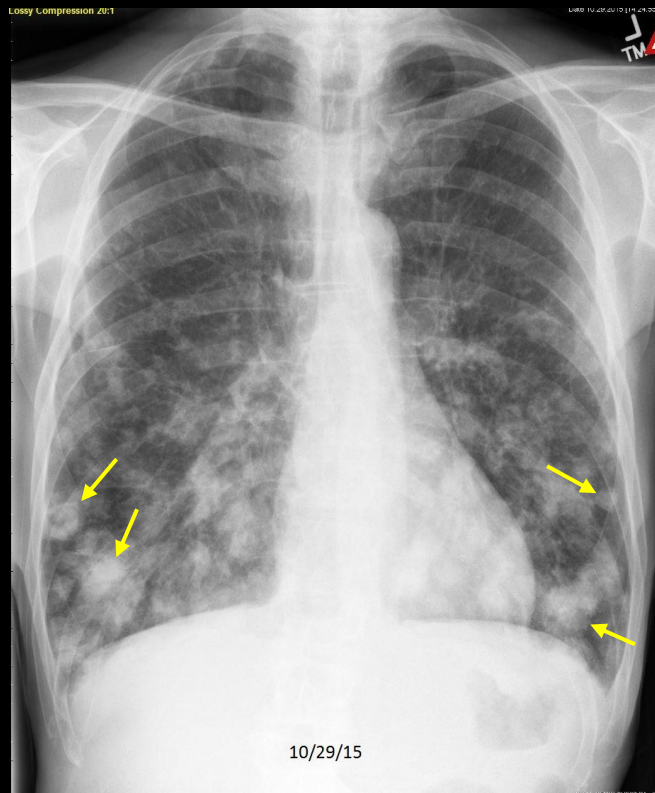
## Quiz Case 5 of 5 - A



## Quiz Case 5 of 5 - B



# Quiz Case 5 of 5 – A shows Metastatic Disease



C598. 63 year old with back pain and abnormal lumbar spine plain films. **Multiple pulmonary metastases.** Urothelial cancer.

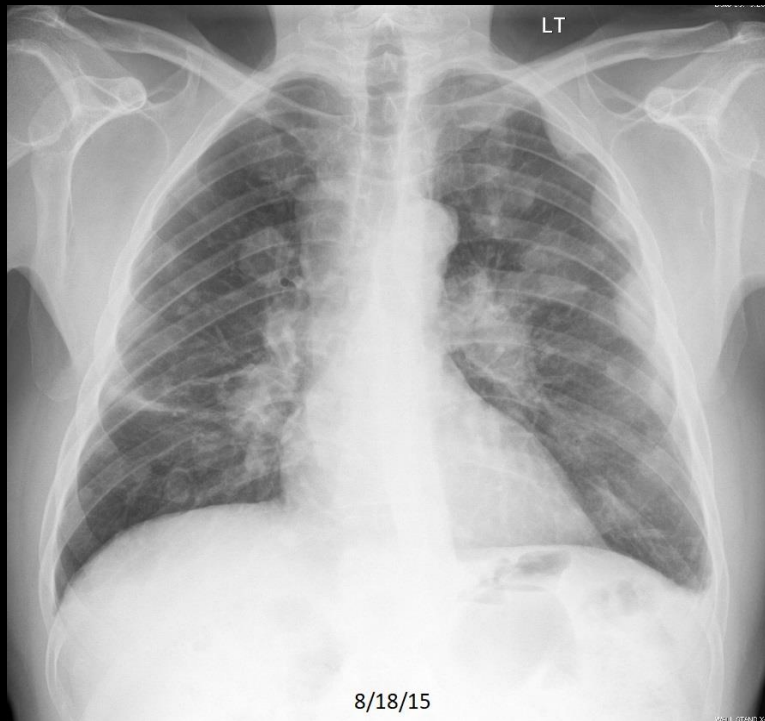
# **Review Quiz**

**Identify Each CXR as:**

**Normal, CHF, Pneumonia, Emphysema,  
Cardiomegaly without CHF, Atelectasis/Scar,  
Focal Chest Density, Pleural Effusion, Hiatal  
Hernia, Fracture, Diffuse Lung Density,  
Calcified Pleural Plaque, Free Air, Calcified  
Granuloma, or Metastatic Disease**

## Review Quiz Case 1 of 10

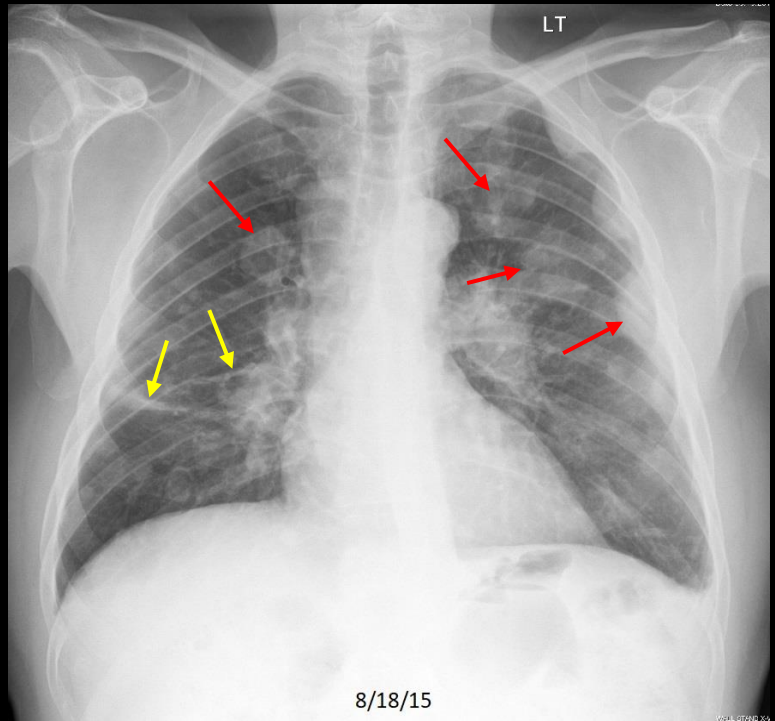
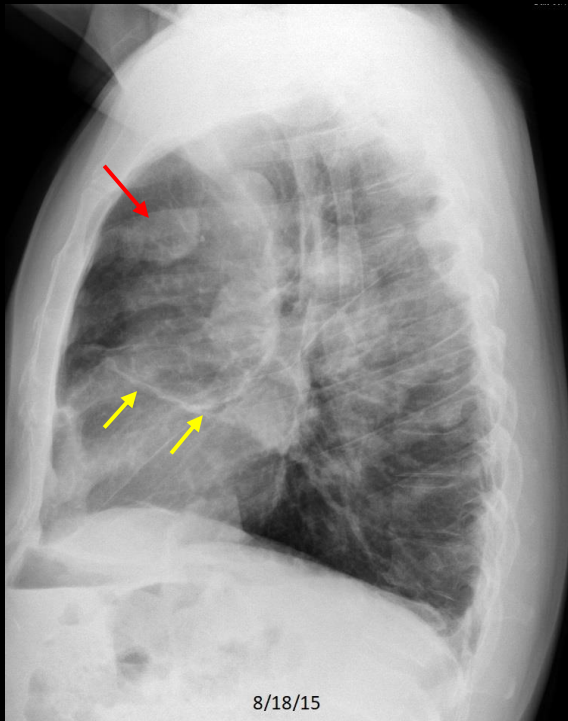
Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease



C664. 62 year old man with cough. Multiple variably sized nodules and masses of the chest. Eventual diagnosis was metastatic breast cancer (in a man).



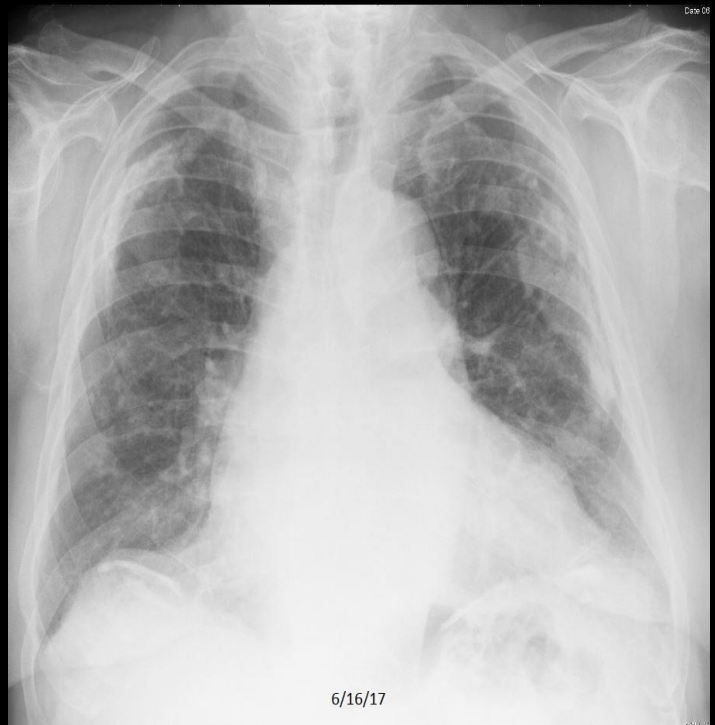
Review Quiz Case 1 of 10  
Atelectasis/Scar and Metastatic Disease



C664. 62 year old man with cough. **Atelectasis/scar.** **Multiple variably sized nodules and masses of the chest** (both lung parenchymal and pleural). Eventual diagnosis was metastatic breast cancer (in a man).

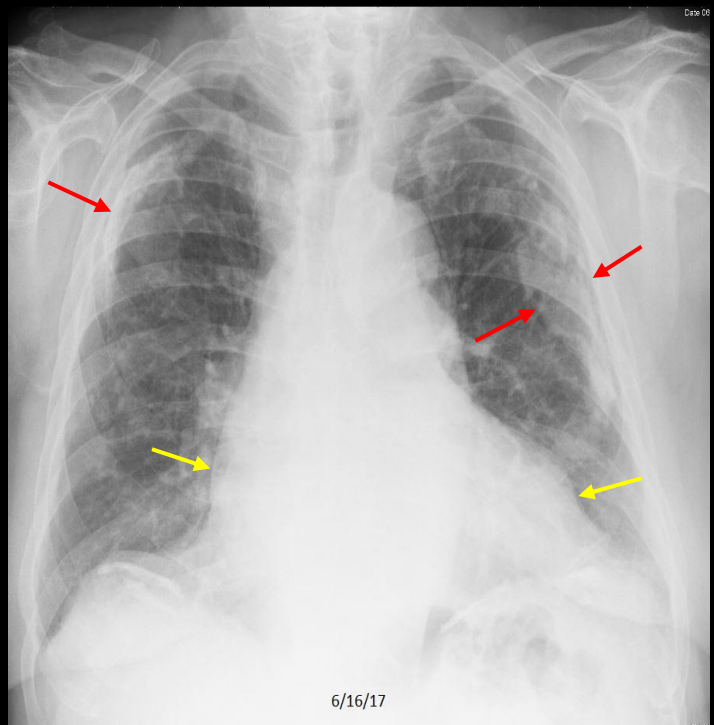
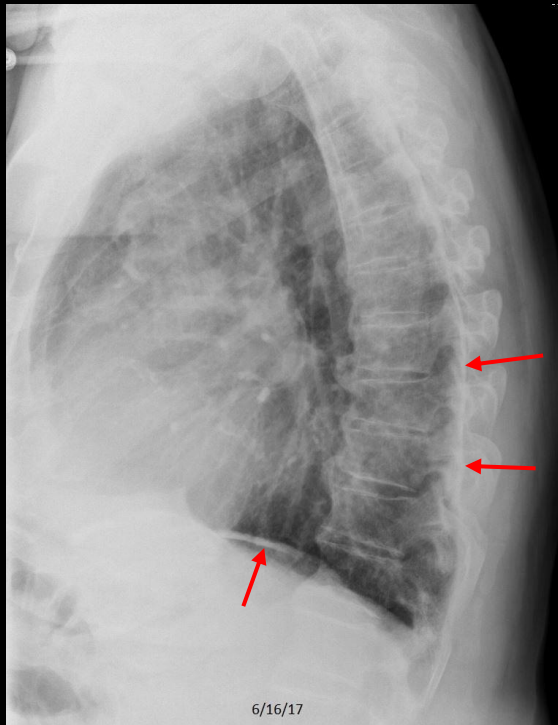
## Review Quiz Case 2 of 10

Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease





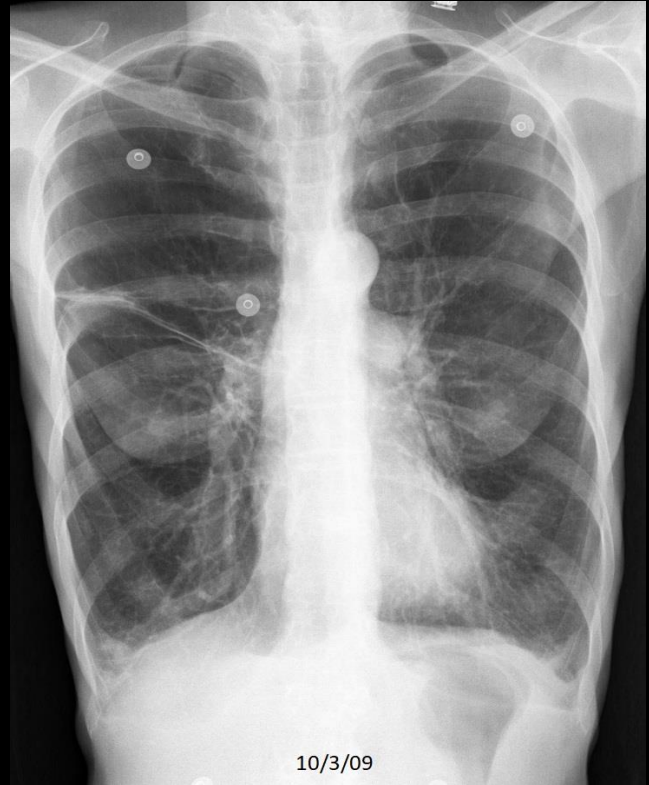
Review Quiz Case 2 of 10  
Cardiomegaly without Failure and Calcified Pleural Plaque



C 372. 82 year old man with cough. **Cardiomegaly**, tortuous aorta, and **calcified pleural plaque**.

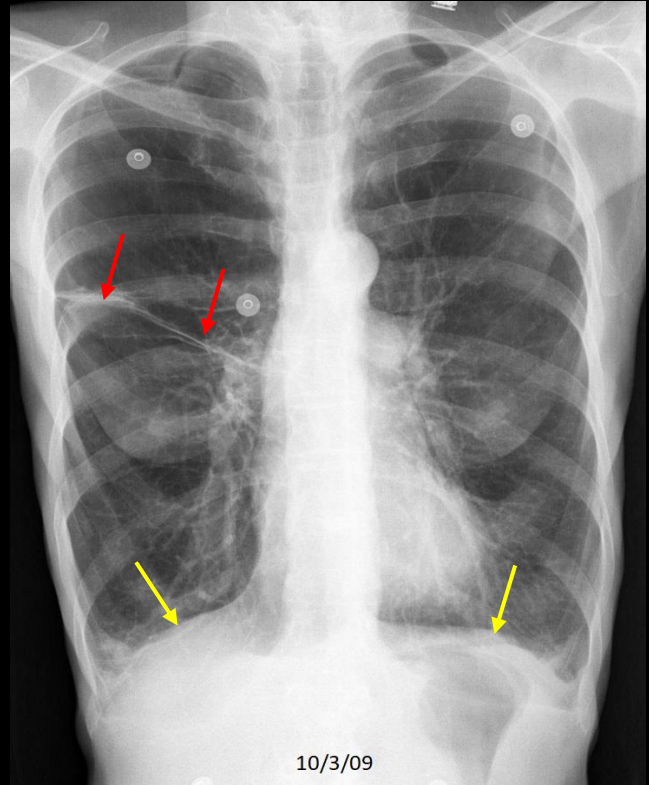
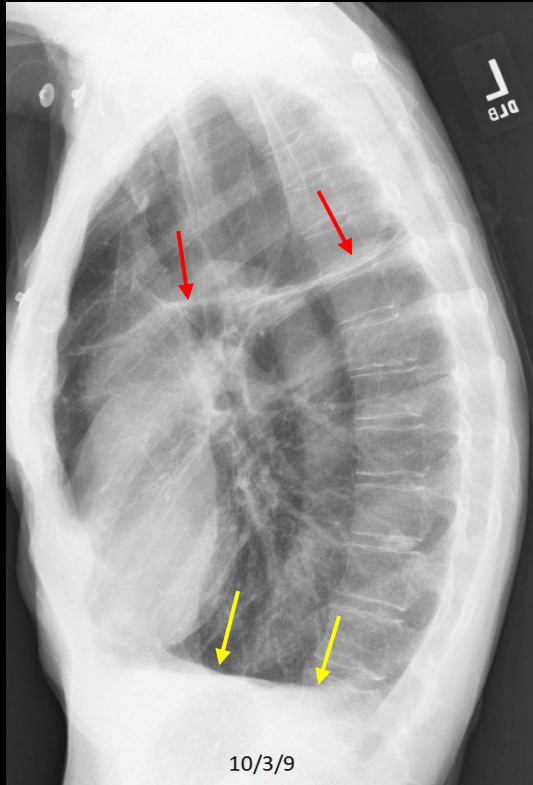
### Review Quiz Case 3 of 10

Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease



C179. 59 year old woman with chronic shortness of breath.

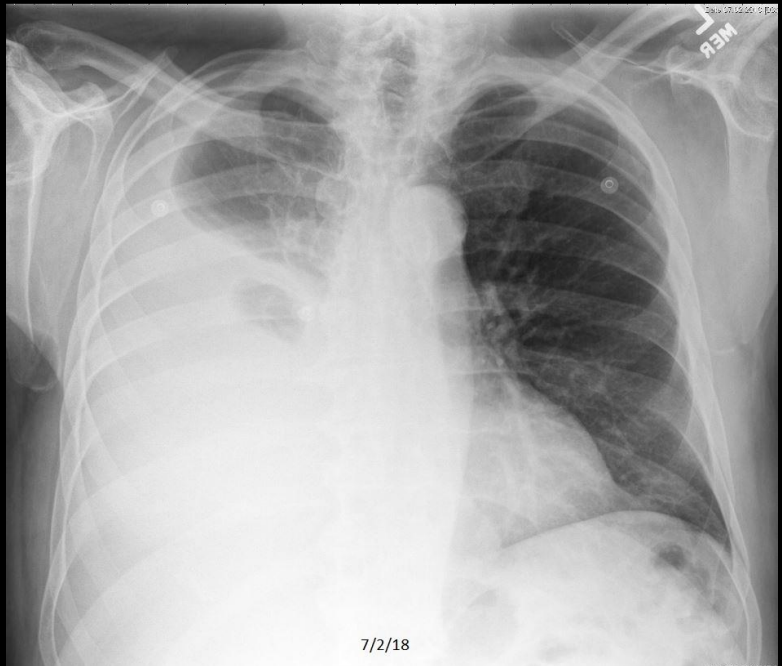
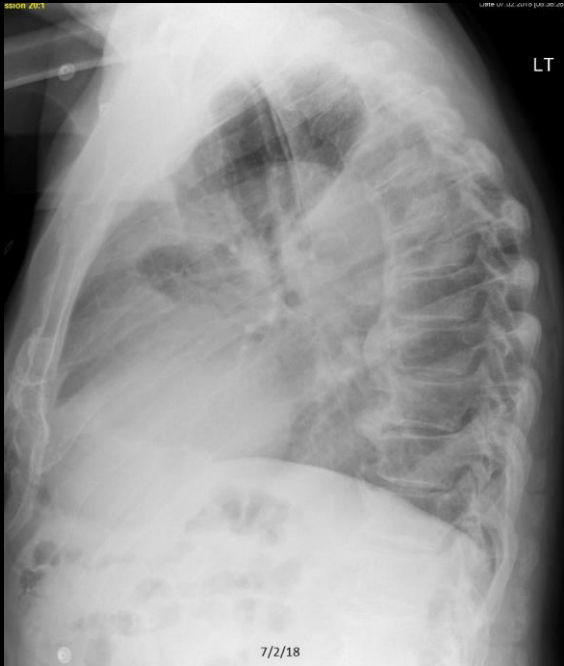
Review Quiz Case 3 of 10  
Emphysema and Atelectasis/Scar



C179. 59 year old woman with chronic shortness of breath. Hyperinflated lungs with **flattening of the diaphragm**. **Atelectasis/scar of the right lung** (although some of this density may represent thickening of the minor and/or oblique fissure of the right lung).

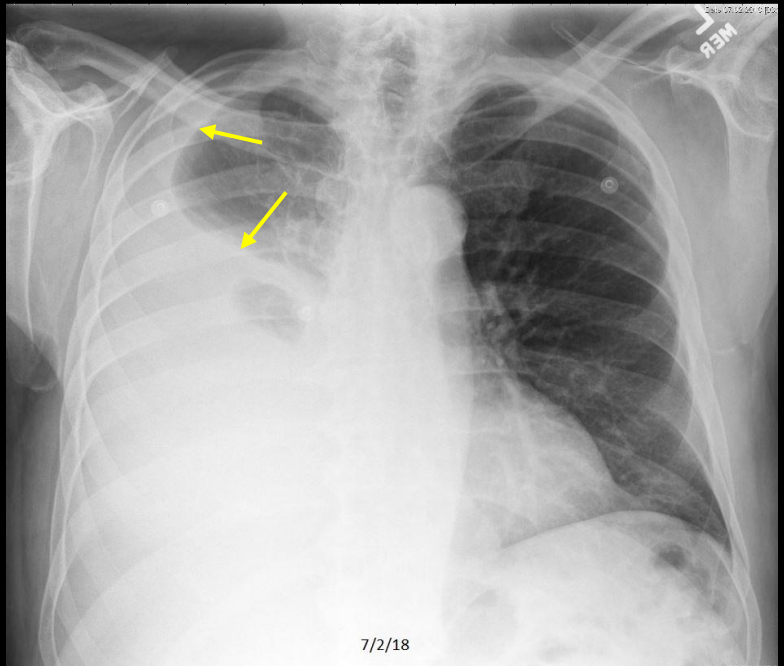
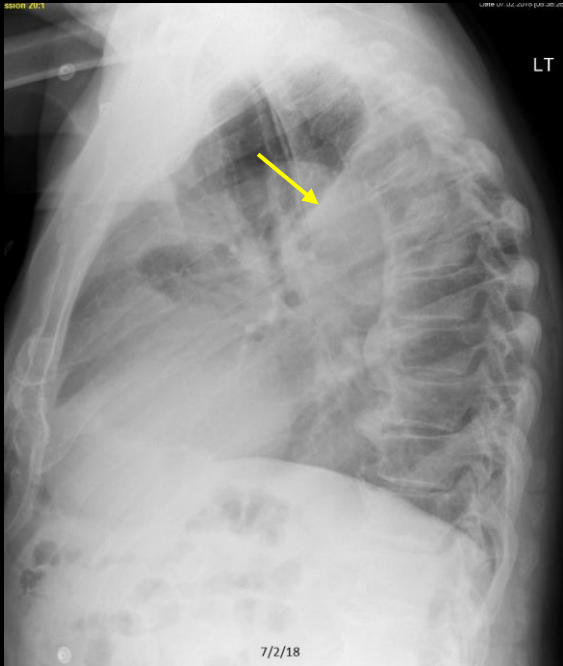
## Review Quiz Case 4 of 10

Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease



C550. 81 year old man with dyspnea.

Review Quiz Case 4 of 10  
Pleural Effusion



C550. 81 year old man with dyspnea. Right pleural effusion.

## Review Quiz Case 5 of 10

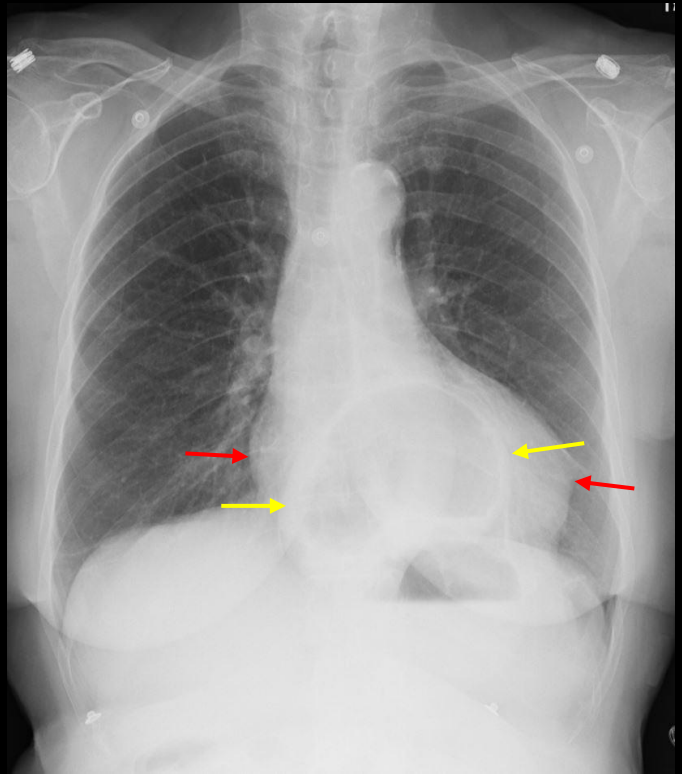
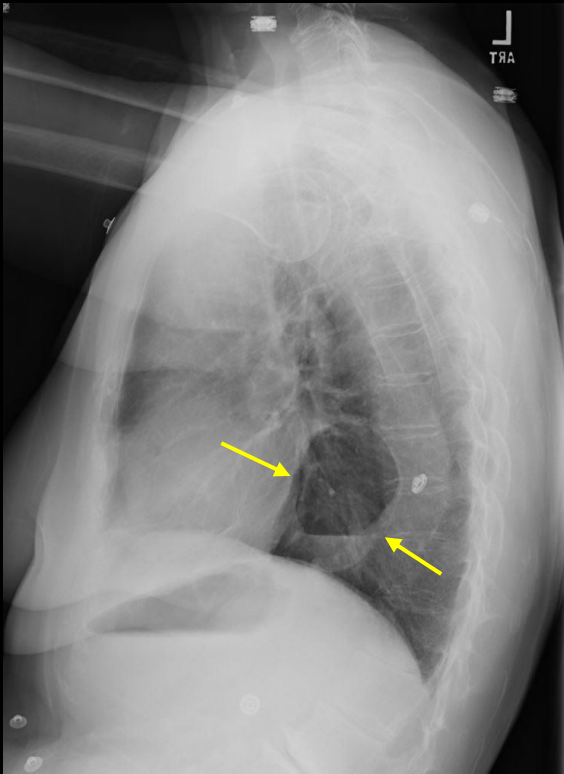
Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease



C646. 81 year old woman with chest pain.



Review Quiz Case 5 of 10  
Cardiomegaly without Failure and Hiatal Hernia

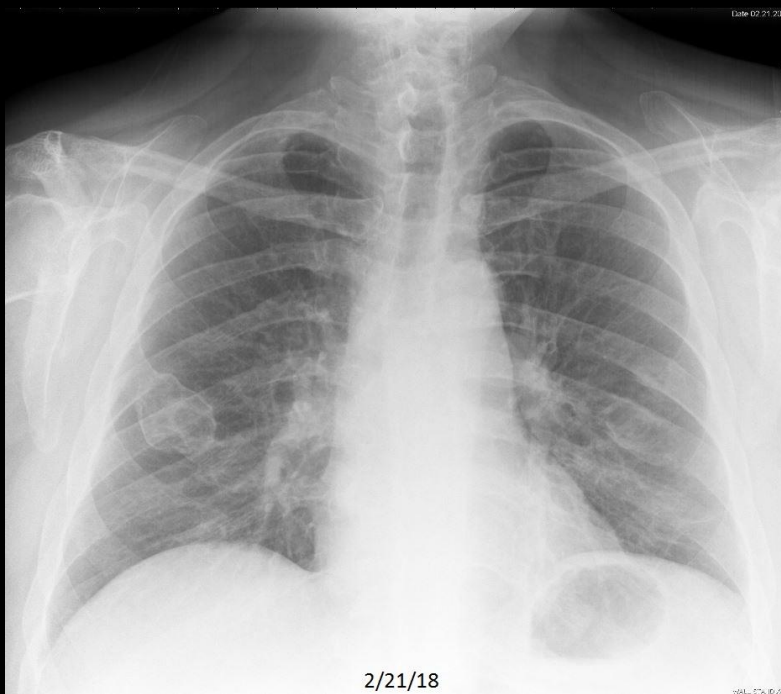


C646. 81 year old woman with chest pain. Hiatal hernia. Cardiomegaly.

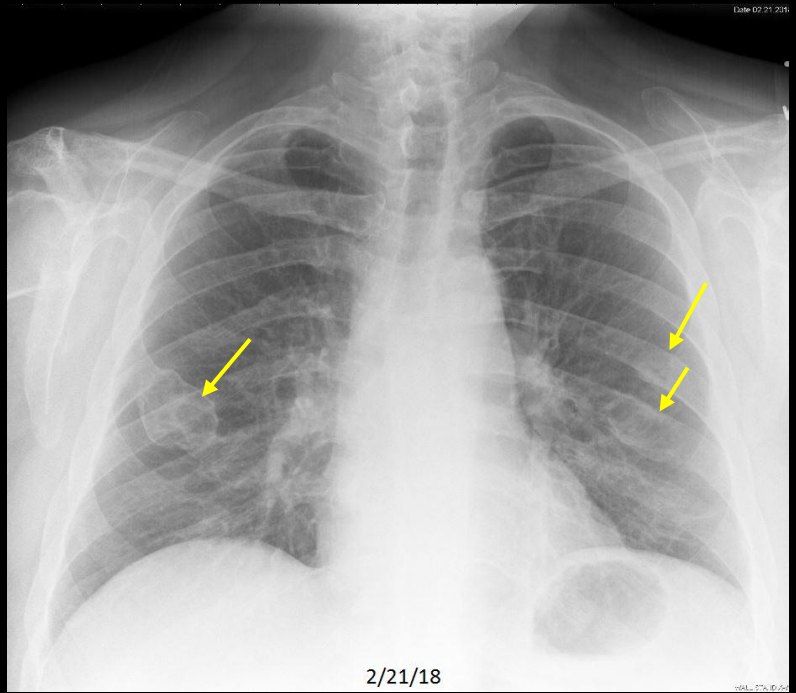


## Review Quiz Case 6 of 10

Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease



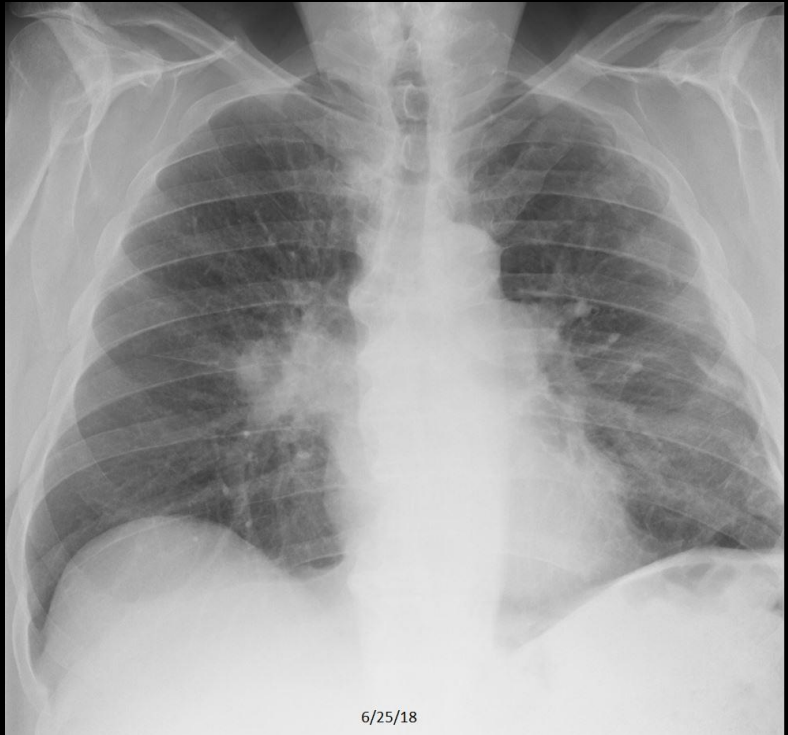
Review Quiz Case 6 of 10  
Metastatic Disease



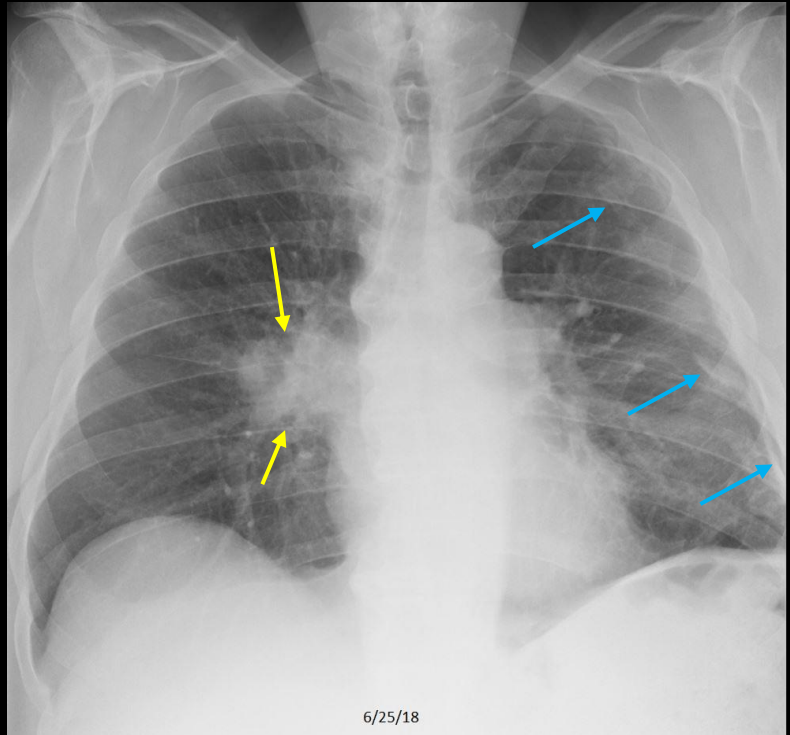
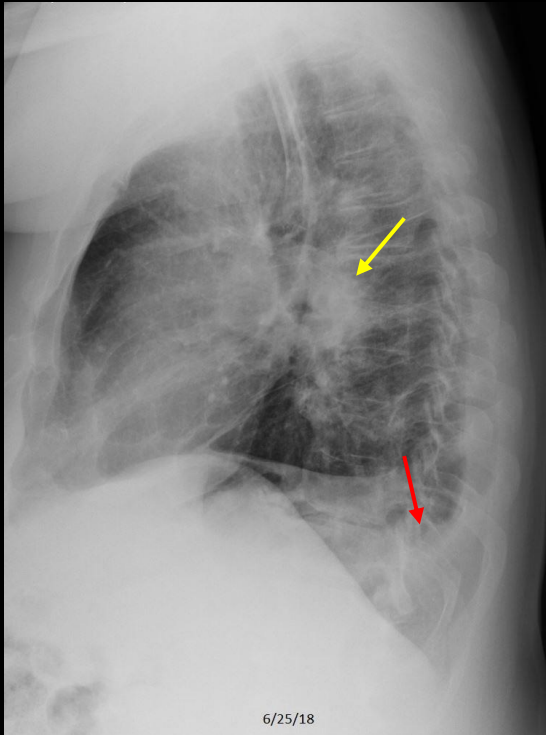
C533. 63 year old man with cough. Multiple bone lesions. Multiple myeloma.

## Review Quiz Case 6 of 10

Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease



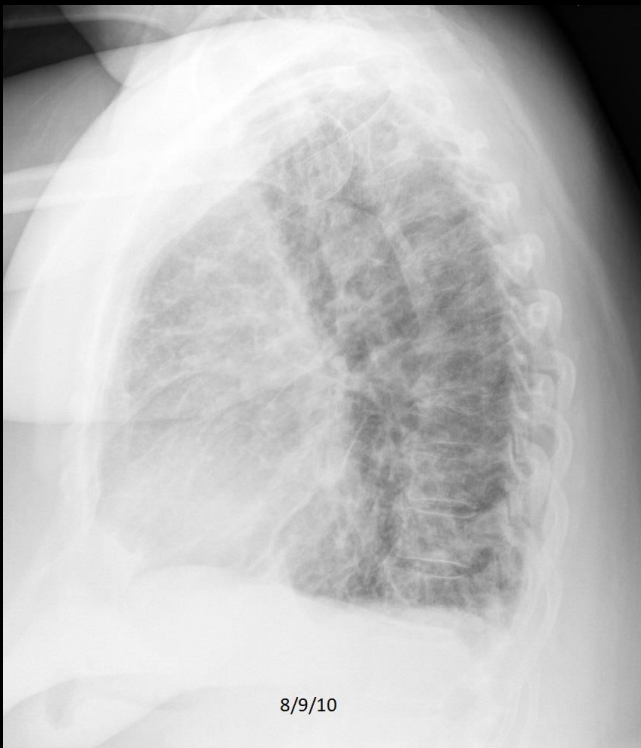
Review Quiz Case 6 of 10  
Focal Chest Density, Pleural Effusion, and Calcified Pleural Plaque



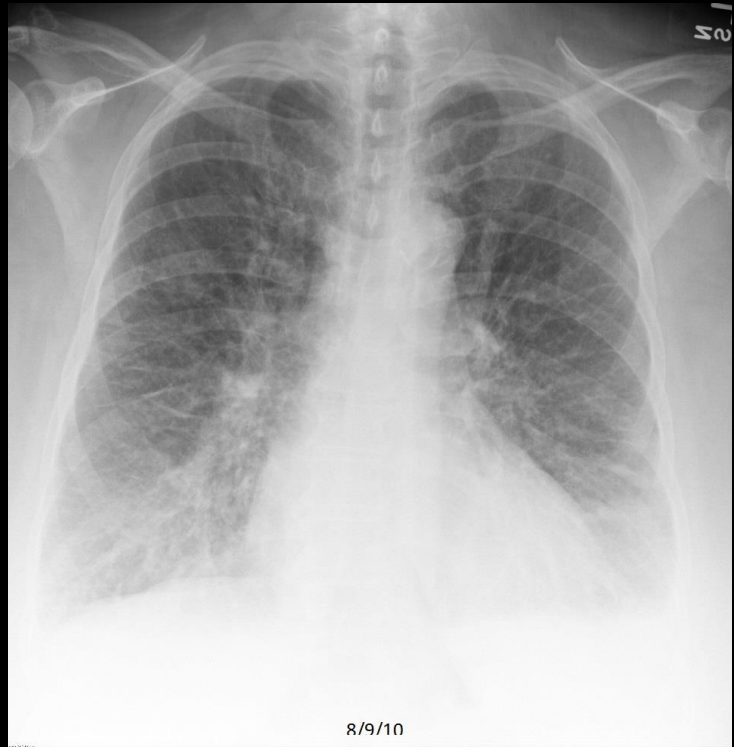
C538. 60 year old man with dyspnea. Right lung density and pleural effusion. Calcified pleural plaque. The mass represented lung cancer and there was an associated malignant effusion.

## Review Quiz Case 7 of 10

Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease



Review Quiz Case 7 of 10  
CHF

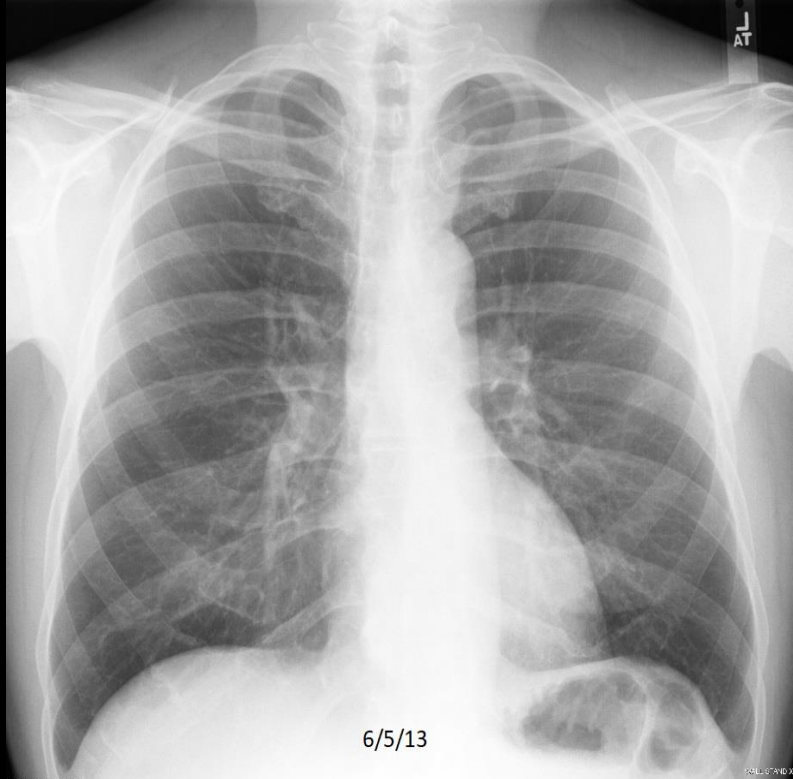


C329. 69 year old woman with dyspnea. Cardiomegaly, diffuse increased lung density, pulmonary vascular redistribution, septal lines, pleural effusions, and indistinct vascular margins.



## Review Quiz Case 8 of 10

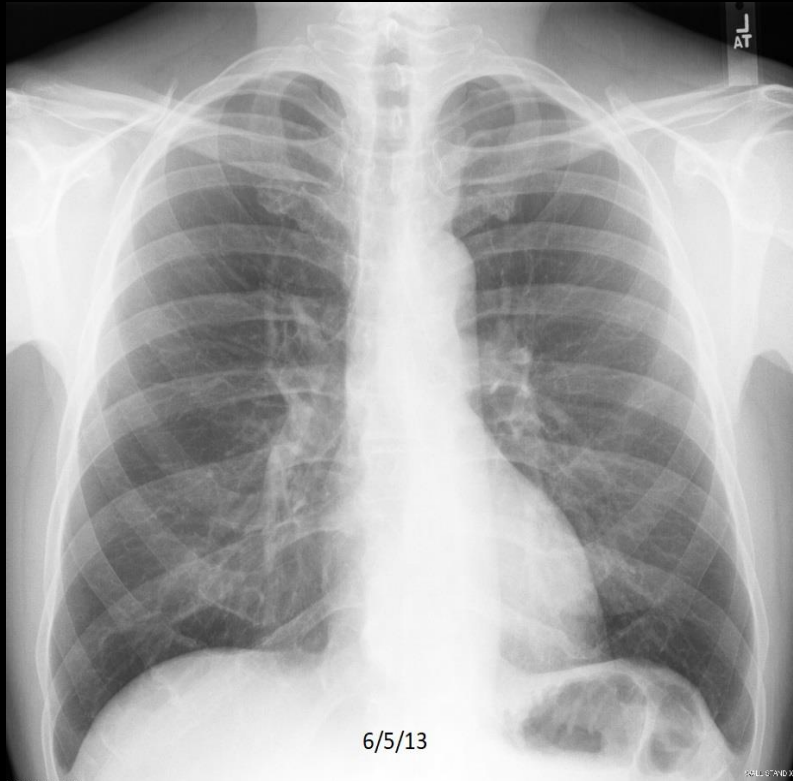
Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease





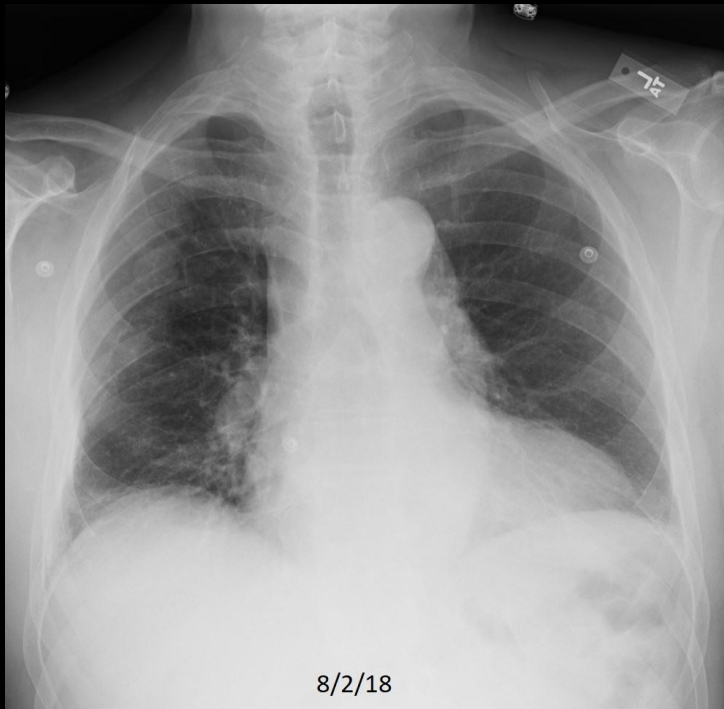
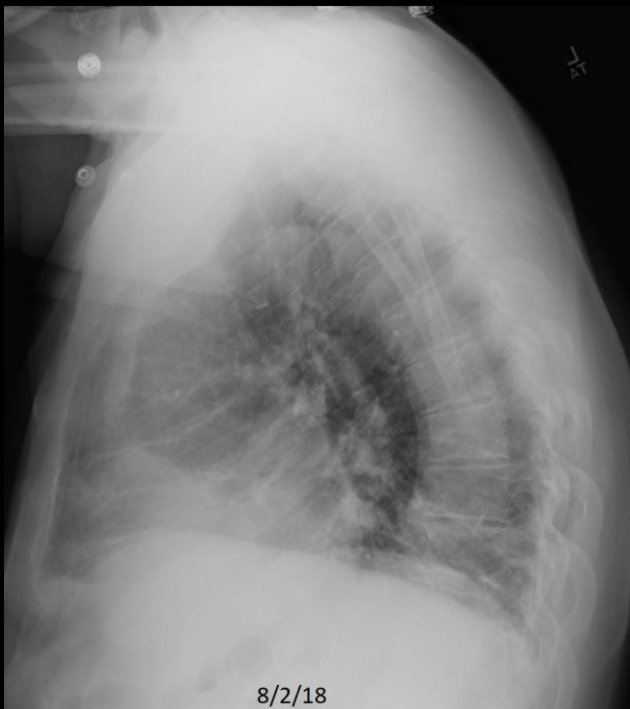
## Review Quiz Case 8 of 10

Normal

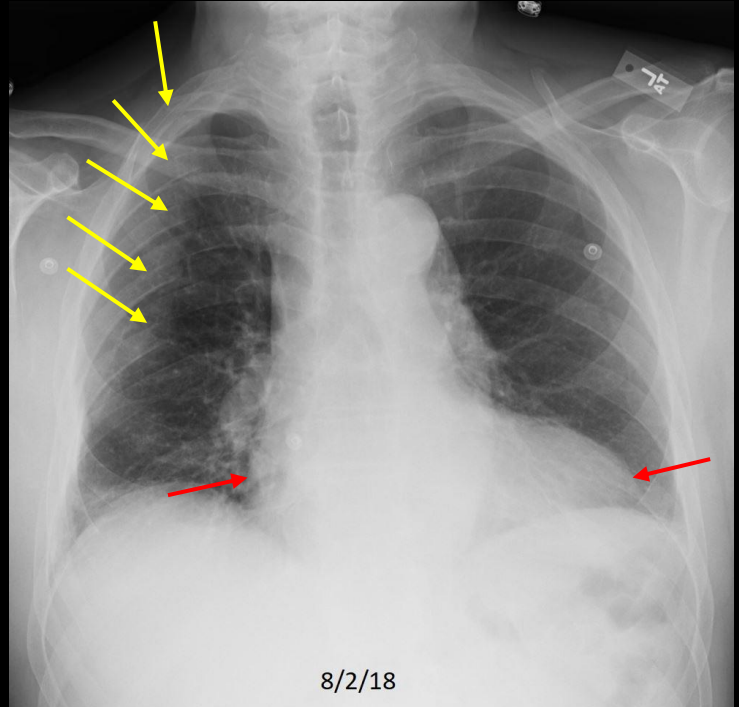
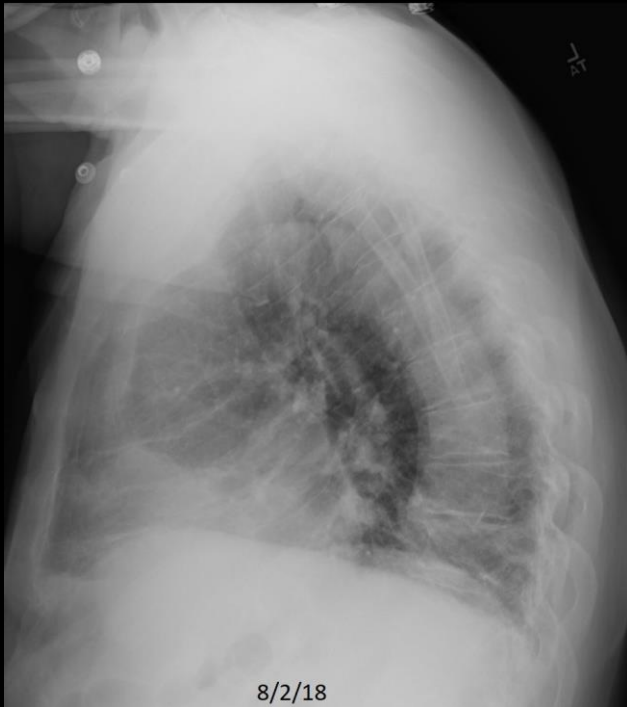


### Review Quiz Case 9 of 10

Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease



Review Quiz Case 9 of 10  
Cardiomegaly without Failure and Fracture



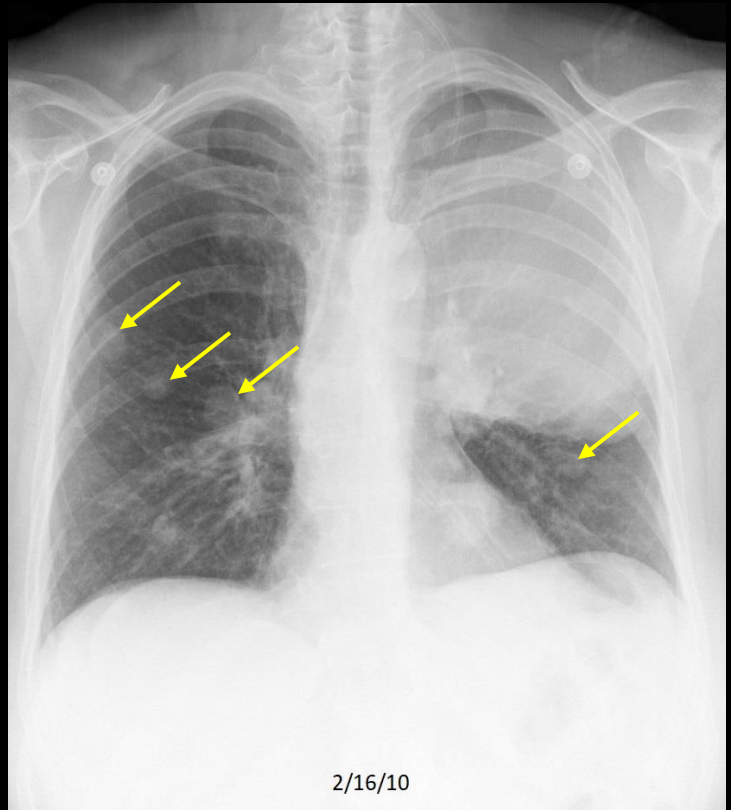
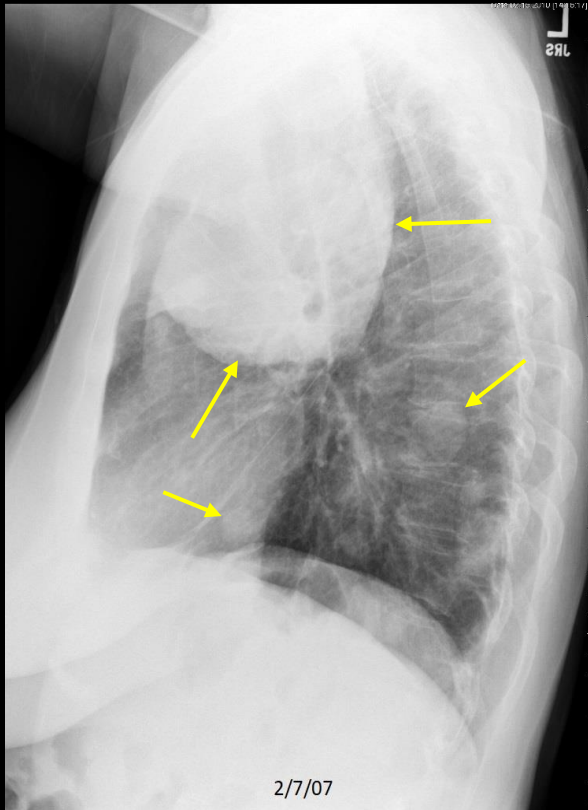
C616. 78 year old man with chest pain following injury. **Right rib fractures.** **Cardiomegaly.**

## Review Quiz Case 10 of 10

Normal, CHF, Pneumonia, Emphysema, Cardiomegaly without Failure, Atelectasis/Scar, Focal Chest Density, Pleural Effusion, Hiatal Hernia, Fracture, Diffuse Lung Density, Calcified Pleural Plaque, Free Air, Calcified Granuloma, or Metastatic Disease



Review Quiz Case 10 of 10  
Metastatic Disease



C567. 67 year old woman with cough and chest pain. **Multiple variably sized lung masses.** Non-small cell lung cancer.

# RECAPITULATION

## METASTATIC DISEASE

**INDICATIONS:** dyspnea, chest pain, cough, known primary tumor, malaise, weight loss.

**FINDINGS:** multiple variably sized pulmonary nodules and masses; post-obstructive consolidation; lymphangitic mets with interstitial density; multiple bone lesions.

**IMPRESSION:** Diagnose if there are multiple, variably sized pulmonary nodules and masses **WITHOUT** findings of sepsis. With sepsis, consider septic emboli (very rare). Diagnose if there are obvious metastatic bone lesions. These patients will nearly always have a CT done for further evaluation.

Chest Radiography  
End of Lecture 15  
Metastatic Disease

Go to Lecture 16  
Pectus Deformity