

РАК ЛЕГКИХ: ОГРАНИЧЕННЫЕ ВОЗМОЖНОСТИ РЕТГЕНОГРАФИИ

Эрик Дж. Стерн
Университет Дж. Вашингтона, США

LUNG CANCER: HIDING IN PLAIN SIGHT

Eric J. Stern
University of Washington, USA

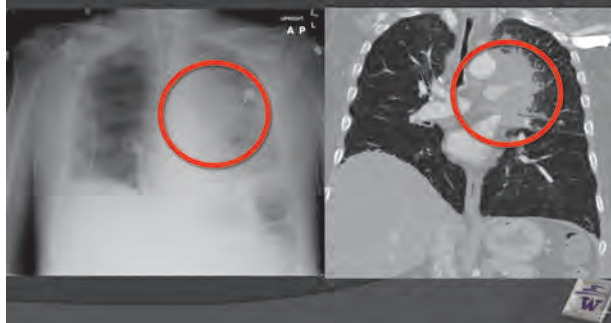
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How many of you have missed a lung cancer on CXR?

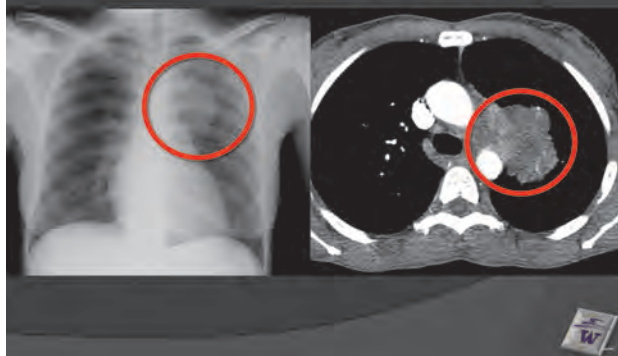
- Undetected lesion evident retrospectively in about 20% of cases
January '11 July '11



70 yo man with new hoarseness: Unfortunate, but "easy" case



44 yo woman with cough



This lecture: Focus on smaller cancers

- Opportunities for earlier detection
- Potentially better survival?
- Characteristics of missed lung cancers
- Visual searching pitfalls

Missed lung cancers

- Most common location:
 - upper lobes (R 45%; L 28%)
- 85% of missed cancers *peripheral*
- Clavicle obscured 22%
- Median diameter of *1.9 cm*

Missed Non-Small Cell Lung Cancer: Radiographic Findings of Potentially Resectable Lesions Evident Only in Retrospect
doi: 10.1148/radiol.2261011924 January 2003 Radiology, 226, 235-241.

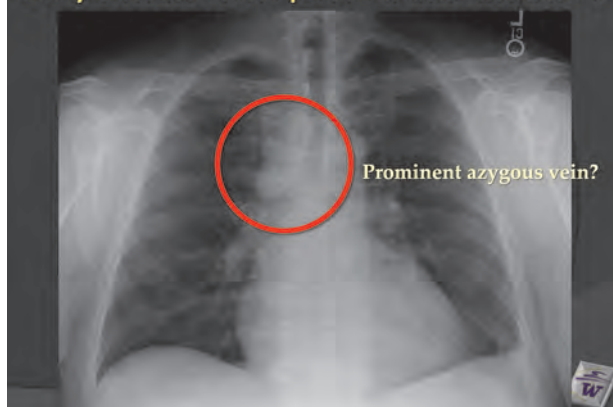
Did you see the lung cancer?

- In this acute setting, not thinking about cancer
- Looking for signs of injury
- Distractors and artifacts
 - ECG lead
 - Backboard

82 yo presents to ER after a fall



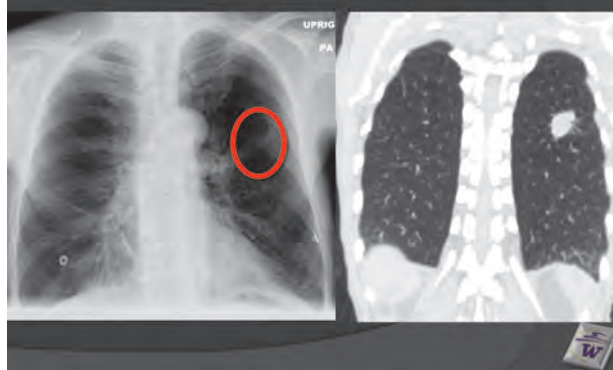
50 yo man with pericardial effusion



50 yo man with pericardial effusion



Where is the cancer?



Where is the cancer?



Leading Types of Observer Errors

- 1) Scanning error
(failing to look at the abnormality)
- 2) Recognition error
(looking at the abnormality but not identifying it)
- 3) Attention error
(distractions)

Leading Types of Observer Errors

- 4) Decision making:
identifying abnormality but
deciding to ignore it
- 5) Satisfaction of search
- 6) Alliterative errors
-repeating the prior error

Contributing Factors

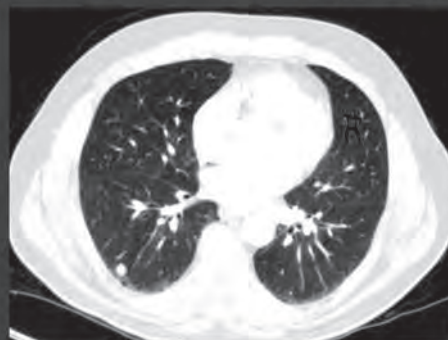
- Lesion Characteristics
 - Density, margins, etc
- Other distractors
 - Eg. Superimposed diseases, artifacts, etc.
- History
- Technical considerations

65 yo man with nodule on CXR



http://search.bwh.harvard.edu/new/presentations/Psychonomics2012_Drew_Vo.pdf

Error is attentional, not perceptual

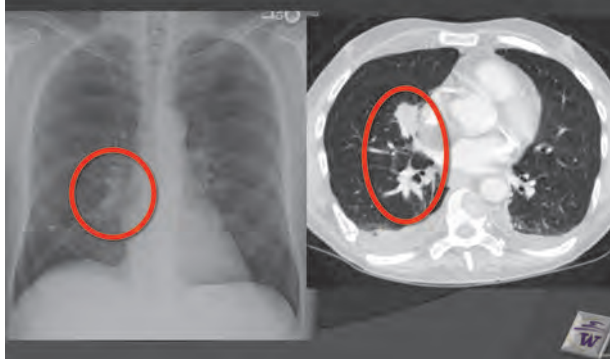
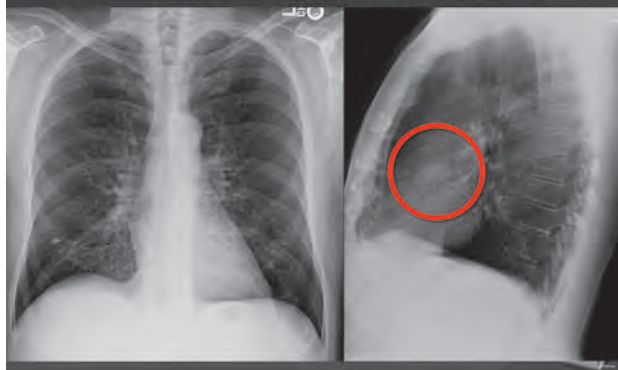


http://search.bwh.harvard.edu/new/presentations/Psychonomics2012_Drew_Vo.pdf

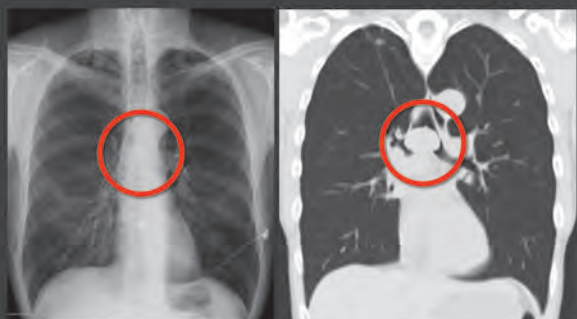
Common trouble spots: Lung Cancer?

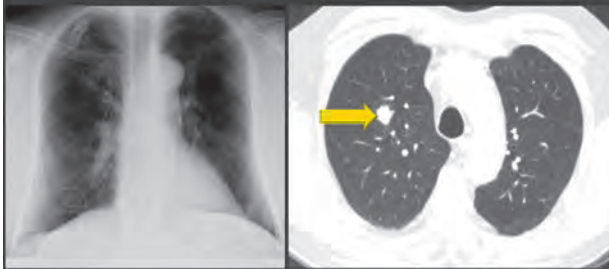
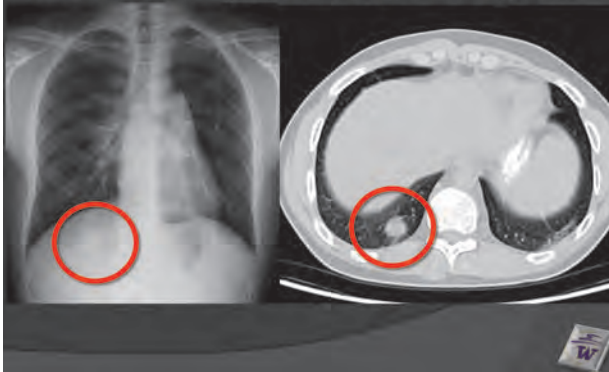
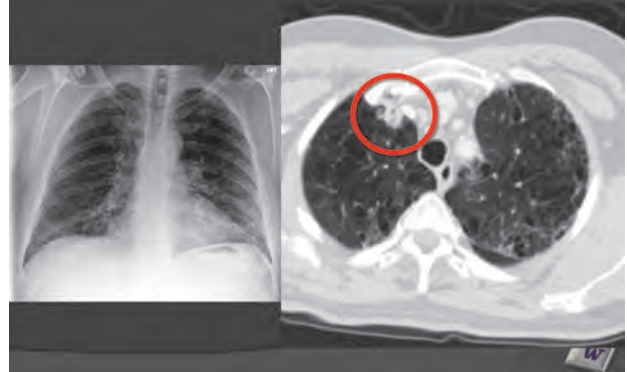
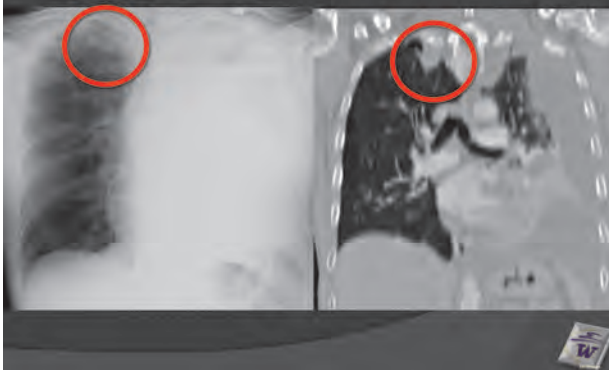
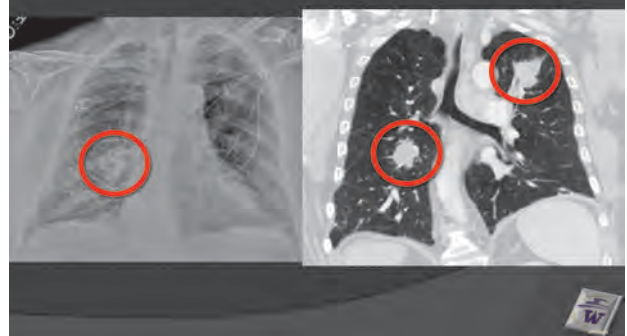


60 yo man with cough

60 yo man with cough:
with lateral view55 yo man with chronic cough
and "pneumonia"

Where is the lung cancer?



Where is the lung cancer?**Hodgkins Lymphoma****RLL mass in patient with Hodgkins****RUL Cancer behind 1st rib****Decision-making, Satisfaction of Search, Distraction****Bilateral Synchronous Cancers****Conclusions: You should...**

- Understand characteristics of missed lung cancers on CXR
- Understand how we visually search
- Be aware of common observer errors
- Know CXR hiding spots