Chest X-Ray Interpretation in the Era of CT Correlation

Matthew J Fleishman MD, FACR
Disclosures

• None
The Chest X-Ray

- Most common radiographic study
- 100’s million exams annually
- Many interpreted by non-radiologists
- Broad indications for pulmonary symptoms, chest pain, trauma, assessing support devices
- *Not indicated* as a screening study for lung cancer\(^1\)
- High inter-observer and intra-observer variation\(^2\)
- Clinical correlation: the patient in front of you
- CT correlation: the anatomic truth

\(^1\)Oken *et al*, *JAMA* 306:17, 2011
\(^2\)Potchen, *JACR* 3:6, 2006
Classical Approach to the CXR

Be Systematic!

- FILM QUALITY/EXPOSURE
- POSITION: AP VS PA ROTATION
- ‘FOUR CORNERS’
- LOOK BELOW THE DIAPHRAGM!
- BONES
- HEART & VESSELS
- LUNGS & AIRWAYS
- PLEURA & SULCI

CXR Interpretation with CT Correlation
Comparative Search Patterns

○ Point of fixation
  Saccade

Early Trainees, Non-Rads

↑ Accuracy & Efficiency

Kelly et al, Radiol 280:1, 2016

Attending Chest Radiologist
Thoracic Radiologist Approach

- Classical approach, **PLUS**
- Image review *before* history: ↑ specificity
- Lung volumes: essential for calibration
- Prior CXRs
- Prior CT & MR of Chest also *Abdomen, Neck, T spine*
- Perception
- Interpretation: *Aunt Minnie v Differential Dx*
- Action: Rx/Intervention, follow-up, advanced imaging
RIGHT lobes and fissures on the lateral
LEFT lobes and fissures on the lateral
CXR Interpretation with CT Correlation
Case Presentations

- Lobar atelectasis
- Pneumonias
- Interstitial lung disease
- Pleural disease
- Thoracic malignancies
- Cardiac abnormalities
- Trauma
- Support catheters: normal and mal-positioned
- Artifacts
- Disease below the diaphragm