

# Teaching Files and Training

## The Radiologist's perspective

*Dr Nicola H Strickland*

*Consultant Radiologist*

*Imperial College Healthcare NHS Trust*

# Pre-requisites

- part of PACS: fully integrated
- sold by PACS vendor

# Radiologists' requirements for a digital library

add to library from diagnostic PACS  
workstation (3 megapixel)

- whilst reporting
  - workflow efficiency
  - motivation
- same log-in (SSO)
- no need to change location to a PC
- no need to make list of cases to add
- ideally with same speech rec integrated

# Radiologists' requirements for a digital library

display library on 3 megapixel monitors

- not just adding cases whilst reporting
- need to see cases added, to complete library entry
- simultaneously launch and run PACS and digital library on same workstation
  - 3<sup>rd</sup> colour monitor solution
  - sufficient computing power

# Radiologists' requirements for a digital library

- export PACS overlay files
- otherwise images transferred appear
  - upside-down, wrongly windowed
- manipulate image within library
- save changes made!

# Radiologists' requirements for a digital library

## speech recognition integration

- same speech rec as used with the PACS
- quicker library entries
- copy and paste from PACS report
- unpopular with library vendors
  - ↑work for them !
  - numerous speech rec companies

# Radiologists' requirements for a digital library

classify by sign (as well as by diagnosis)

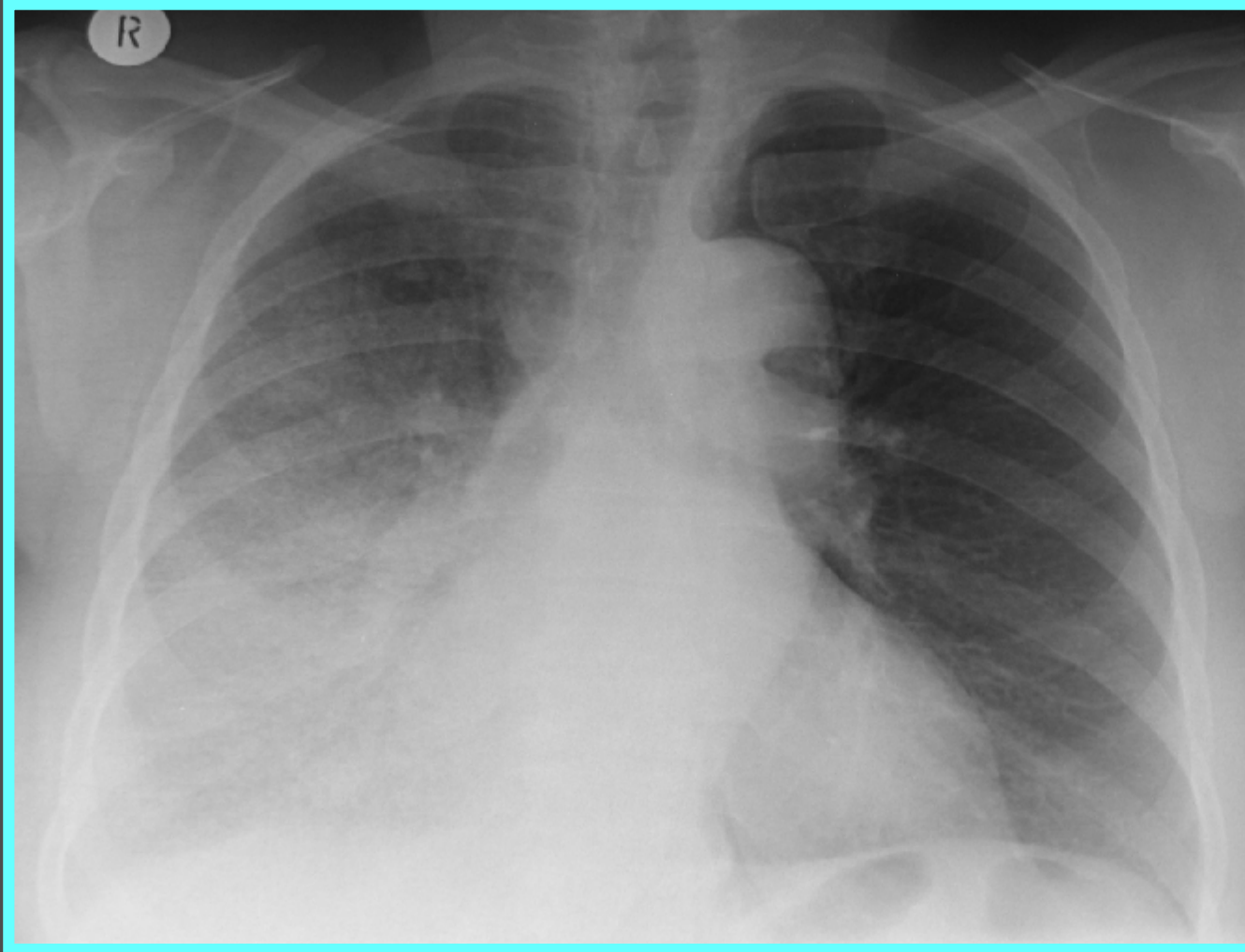
e.g. lung nodule, pathological fracture

sun-ray spiculation

- search by key words

example:

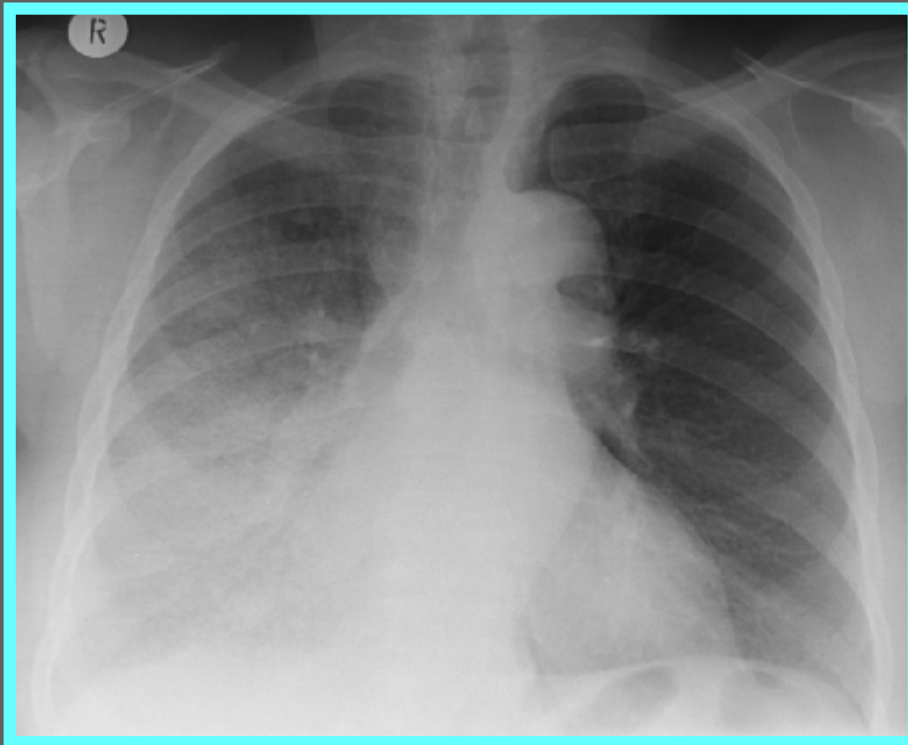
sign: right LL and ML consolidation



Final diagnosis: bronchoalveolar cell carcinoma

example:

added key words:



- lung cancer
- air bronchograms
- lobar consolidation

# Radiologists' requirements for a digital library

**anonymize** but keep audit trail

- patient demographics
  - add to case later
  - when full diagnosis available
  - if diagnosis changes
- person who added case
  - own collection within library
  - search on this criterion

# Radiologists' requirements for a digital library

## make own quiz

- random test yourself
- by topic and/or modality
- see answers immediately or at end
- score if desired
- bookmark if interrupted
- accrue CMEs

# Radiologists' requirements for a digital library

## make and classify personal folders

- mark cases
- collect them into folders
  - e.g. sarcoidosis
- lectures, teaching etc.
  - FRCR, medical students....
- under personal control  
(not system administrator)

# Radiologists' requirements for a digital library

## internet access

- literature search
- references

## deletion from library

- rules for this
- assigned privilege

# What makes this library different?

- a “workhorse” “jobbing” library
  - tailored to daily use
  - directly at PACS monitors
  - simple
  - unvalidated the “UCA”
- dynamic
  - a living entity
  - add to it all the time
- flexible use
  - study
  - quiz
  - teaching, lectures

# The vision!

- a UK-wide library
  - more cases+++
  - only ~4 major PACS/RIS/SR vendors
  - a universal need
- single archive
  - archive management
  - maintenance
- potential use
  - re-validation
  - re-training
  - cases for digital FRCR and for VCA(!)

# The plan

- **6 months free trial at Imperial**
  - McKesson Horizon Study Share
  - testing and assessment
  - report back to this forum
  - visits and demos
- **buy-in from other sites**
  - per-Trust basis
  - not per license basis
  - shared and individual site archives
- **vendor-user partnership**
  - better product/improved sales!

# Conclusion

Digital image libraries crucial to modern radiological education

- fully integrated with PACS and speech rec
- PACS vendors need to realise potential
  - value-added PACS
- radiologists must specify their design
  - software requirements discussed
- UK-wide project
  - multiple advantages, less work!
  - help ourselves: revalidation, retraining