

'HEAD TO TOE'

A MESSAGE FROM THE DESK OF RADIOLOGY ASSOCIATES

Screening CT Chest for Bronchogenic Carcinoma

New Low-Dose CT Scan Aids in Earlier, Better Cancer Detection by David D. Wilson, M.D.

It should be no surprise that CT chest is a more sensitive screening method for detection of early bronchogenic carcinoma than chest radiography. Several multicenter studies performed in the 1970's showed that chest radiography is unreliable in detecting early lung cancer (i.e. when the nodule is <1 cm and when resection is associated with a high rate of survival). By many researchers, this makes chest radiography unsuitable for cancer screening in high-risk patients. The problem in the adoption of CT for screening - up to now - has been:

- cost of exam
- appropriate patient selection
- proper management of nodules that are too small to biopsy
- radiation exposure

The cost of a CT chest exam has decreased significantly over the past decade.

Screening exams are more frequently covered by health insurance in patients who are considered at risk for developing lung cancer. The definition of what constitutes high risk is still debated. It is generally thought that for patients >35 year of age, a history of greater than 20 pack per year smoking history, diagnosis of lung cancer in first degree relative or work related history of exposure to asbestos for patient or spouse constitutes high risk. I, personally, would add chronic lung disease that renders a chest radiograph insensitive for detection of early lung cancer or a cancer-phobic patient to the list.

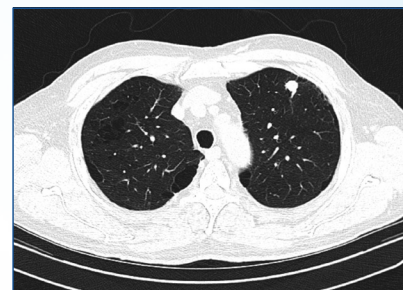
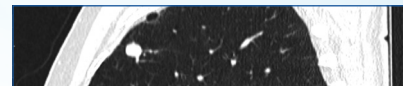
Proper management of lung nodules found on a CT scan is very important and has been made simpler by using the Fleischner Society guidelines for small non-calcified nodules (published in 2005 and the more recent management recommendations for nonsolid lung nodules published in 2013). The guidelines define the appropriate period of time to follow small nodules found on an initial CT screen, which was a problem during the first experience of using chest screening CTs a decade ago.

Also, recent advances in CT have allowed a significant reduction in patient radiation dose. CT outside of the head and neck region can now be done at a 30 - 50% reduced dose over older CT scanners. This is particularly true for CT chest. Previous dose range was 8-10 mGy for a diagnostic CT exam and is now 4-5 mGy, and 1.0 mGy for a screening CT exam and only about 6-10x the dose of a two-view chest radiograph.

In conclusion, low-dose CT lung scans can be of tremendous benefit to patients in your practice.



David D. Wilson, M.D.



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