AlphaNet

Lung Nodules

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Lung nodules are common. Most are not cancerous.

What Are Lung Nodules?

- ✓ Lung nodules are abnormal spots seen on an X-ray or CT scan of the lungs.
- ✓ Most nodules are identified on routine imaging tests. This is referred to as an "incidental" finding.
- ✓ One-third to one-half of adults who get a CT scan have lung nodules identified.
- ✓ As CT scans have improved, the number of identified nodules has increased.
- ✓ Overall, 1 out of 100 (1%) lung nodules are cancerous. The others are called benign (non-cancerous).
- ✓ There's good evidence that early identification of a cancerous nodule leads to better outcomes.
- ✓ Sometimes a large lung nodule that is almost certainly cancer should just be surgically removed.
- ✓ If you have been told you have lung nodules, ask about the size and number of nodules when you see your healthcare provider.

Recommended Follow-Up For Incidental Lung Nodules

- ✓ In general, you should see a pulmonary specialist to determine if a nodule is likely cancer or likely benign. There are calculators that help in this determination. Calcified nodules and nodules less than 6 millimeters are almost always benign.
- ✓ Guidelines for follow-up of incidental nodules are developed by a group of medical experts called the Fleischner Society. The follow-up schedule is based on the likelihood that nodules may be cancerous.
- ✓ Guidelines are based on the size of nodules, number of nodules, and whether the nodules are solid. Nodules that are not solid are often described as having "ground glass opacity." This means that the area is hazy and structures can be seen underneath it.
- ✓ Guidelines also consider whether an individual is considered low-risk or high-risk.
  - ❑ Characteristics of high-risk individuals include older age and heavy smoking history.
  - ❑ There is controversy around whether alpha-1 antitrypsin deficiency puts individuals into the high-risk category.
  - ❑ Emphysema from any cause is a risk for lung cancer.
- ✓ Follow-up may involve:
  - ❑ Blood tests or sputum tests to look for infections or other causes of lung nodules.
  - ❑ Additional imaging, such as a PET scan or repeated CT scans to monitor growth of the nodule.
  - ❑ A biopsy to obtain a tissue sample for analysis.
  - ❑ Removing the nodule surgically.
- ✓ For lung nodules that are cancerous, treatment options include surgery, chemotherapy, radiation, immunotherapy, and targeted therapy.

What Causes Lung Nodules?

- ✓ Benign (non-cancerous) nodules can be due to:
  - ❑ Lung infections that often clear on their own.
  - ❑ Clusters of immune cells that can be caused by:
    - ▪ Lung infections from viruses, fungi, and mycobacteria such as tuberculosis and NTM.
    - ▪ Inflammatory diseases such as rheumatoid arthritis and sarcoidosis.
  - ❑ Scar tissue, which is called fibrosis. Lung scarring is often due to previous lung infection. It can also be due to smoking or breathing in lung irritants, dusts such as silica, or chemicals.
  - ❑ Benign lung tumors, including hamartomas, lipomas, and adenomas.
- ✓ Malignant (cancerous) nodules could be due to lung cancer, or to cancer that has spread from another place in the body to the lungs.

Are Lung Nodules More Common in Alphas?

- ✓ One study showed that patients with emphysema have at least one nodule 96% of the time.
- ✓ Alphas have an increased risk of developing lung disease, especially emphysema.
- ✓ Thus, lung nodules are expected to be more common among Alphas who have lung disease.
- ✓ For Alphas who do not have lung disease, it is unclear whether there is an increased risk.