

**Solitary Pulmonary Nodules**  
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Answer All Statements as True or False

1.
  - a. A solitary pulmonary nodule is a lesion of the parenchyma of the lung that is 6cm or less in diameter, is not associated with other lesions, and does not invade other structures.
  - b. More than 130,000 new pulmonary nodules occur each year in the United States.
  - c. Approximately 60% of these nodules are bronchogenic carcinoma.
  - d. The patient is usually asymptomatic and undergoing chest radiography for either an unrelated issue or screening.
  - e. Pulmonary malignancies with the greatest potential for cure present as solitary nodules.
  - f. Granulomas and hematomas account for the minority.
  
2.
  - a. Solitary pulmonary nodules characteristically appear in the upper lung fields.
  - b. Nodules do not cause symptoms unless airway obstruction, pleural invasion, or involvement of blood vessels or nerves occurs.
  - c. A solitary lesion that does not change in size for 2 years is benign.
  - d. Malignancies usually double in volume in less than 5 weeks.
  - e. The older a patient, the greater the chances are that the nodule is malignant.
  - f. Smoking increases the probability that the nodule is malignant.
  
3. Patterns of calcification associated with benign lesions:
  - a. Central
  - b. Peripheral
  - c. Stippled
  - d. "Popcorn"
  - e. Diffuse
  - f. Laminated
  - g. Eccentric
  
4.
  - a. Small cell lung cancer is the most common cancer diagnosed from solitary lung nodules.
  - b. Most pulmonary nodules that are malignant are primary lung cancers.
  - c. The most likely cancers to metastasize to the lung are cancers of the breast, colon and testicles.
  - d. Most solitary pulmonary nodules that are benign are hematomas.
  - e. Histoplasmosis is the most common granulomatous nodule.
  - f. *Dirofilaria immitis* is a cause of pulmonary nodules.
  - g. The larger the size of the lesion, the more likely it is to be malignant.

5.
  - a. The best noninvasive test to evaluate a solitary lung nodule is with a CT Scan.
  - b. MRI is superior to CT for imaging.
  - c. Bronchoscopy and transthoracic needle aspiration are high yield diagnostic measures.
  - d. Thoracoscopy is the most high yield procedure that can be performed.
  - e. Thoracotomy with resection is associated with a perioperative mortality risk of 1% to 10%.
  - f. The major disadvantage of Thoracoscopy compared to transthoracic needle biopsy is that it requires general anesthesia.
  - g. All solitary pulmonary nodules should be considered cancer until proven otherwise.

## Solitary Pulmonary Nodules

### Answers

1.
  - a. False. According to whatever source is referenced the lesion must be 3cm or 4cm or less in diameter.
  - b. True
  - c. False. Approximately 35%
  - d. True
  - e. True
  - f. False. They account for the majority.
  
2.
  - a. False. They usually appear in the middle or lateral lung fields, surrounded by normal lung.
  - b. True
  - c. True
  - d. False. Inflammatory lesions double in volume in less than 5 weeks, malignancies take between 1 and 18 months to double.
  - e. True
  - f. True
  
3.
  - a. True
  - b. True
  - c. False (Malignant)
  - d. True
  - e. True
  - f. True
  - g. False (Malignant)
  
4.
  - a. False. Adenocarcinomas most common.
  - b. True. Approximately 75%.
  - c. True
  - d. False. 85% to 90% are granulomas. Hemartomas account for about 5%.
  - e. False. The most common nodule is caused by tuberculosis, but in endemic areas histoplasmosis (Southeastern United States, Mississippi River Valley) and coccidiomycosis (Southwestern United States) may be more common.
  - f. True. The dog heartworm, transmitted to humans by mosquitoes.
  - g. True
  
5.
  - a. True. Unless there is an x-ray 2 years or older that shows the lesion is the same size or decreased in size, then no further work up is necessary.
  - b. False. It does not detect calcifications well.
  - c. False. If a diagnosis of cancer is made by the specimens obtained, then it was successful. But if no diagnosis is made from these procedures a more invasive procedure will be needed. They are good for ruling things in, but not good at ruling out cancer.
  - d. True. Most definitive procedure because not only is the entire lesion removed, but a certain diagnosis of the lesion can be made. Safer than thoracotomy
  - e. True
  - f. True
  - g. True