

## Imaging Sciences Interesting Cases

### CASE 589

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**CLINICAL PRESENTATION:** Patient is a 76-year-old female seen for preoperative exam before hernia repair.

**IMAGING FINDINGS:** A 3.5 x 2.8-cm nodular cystic lesion was found in the right lower lobe of the lung on abdominal CT.



**Figure 1:** PA view of the chest demonstrates a nodular cystic lesion in the right lower lobe.



**Figure 2:** An axial CT image of the chest demonstrates a peripheral 3.6 x 2.8 cm nodular cystic lesion in the right lower lobe of the lung, posteriorly.

**DIAGNOSIS: Cavitating adenocarcinoma of the right lower lobe**

**DISCUSSION:** Adenocarcinoma is one of the most common histologic types of primary bronchogenic carcinoma; which seldom cavitates. This case shows an example of this rare entity.

Primary lung cancer generally presents in the 6th-7th decade, although the range of presentation is quite broad. There are 170,000 cases diagnosed annually and it is number one cause of cancer death in U.S. Although, to some degree, all of the lung cancers are associated with tobacco smoking, adenocarcinoma has the weakest association.

Most common signs and symptoms at presentation are cough, hemoptysis, dyspnea and fever, however 10% of patients are asymptomatic. Other sign and symptoms include chest pain, pleuritis, recurrent pneumonia, neuropathic pain and paraneoplastic syndromes. The best diagnostic clue on imaging is the presence of solitary pulmonary nodule or mass, often spiculated with or without mediastinal and hilar adenopathy. Cavitation is more often associated with squamous cell carcinoma, however adenocarcinoma is the second most likely cell type to cavitate. The ground glass component is associated with adenocarcinoma and bronchioloalveolar carcinoma. The most common location for adenocarcinoma is the periphery of the lung or juxtapleural in the upper lobes, however up to one-third of primary adenocarcinomas of the lung may occur in a more central location. The average size at detection is approximately 2.5 cm by chest radiography and 8-15 mm by CT. PET-CT has high sensitivity and negative predictive value in lesions > 1.0 cm diameter.

Various lung infections and lung abscesses including tuberculosis can also be characterized by cavitation. A helpful radiologic finding that can be used to steer the differential diagnosis is the wall thickness of the lung cavity. Additional morphologic findings suggestive of neoplasia include: eccentric or irregular intramural nodularity or thickening; nodular inner margins, notched outer margin, associated soft tissue mass, and lymphadenopathy. Whereas irregular spiculated lesion borders are suggestive of neoplasia; they may also be seen in benign lesions. As a general "rule of thumb" the more irregular and the more thickened the wall of the cavity, the more likely the lesion is neoplastic.

**REFERENCES:**

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