A Radiologic Quiz

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by

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There are some diagnostic findings in medicine which are highly specific. Presented here is a radiologic finding that falls into this category. See if you can make the diagnosis by reviewing the history and inspecting the radiographs before turning the page.

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A 41-year-old Negro female** had been well up until the preceding three months. Now she had a febrile illness with cough and hemoptysis. After treatment with penicillin, she improved but continued to have a productive morning cough with occasional blood streaking of the sputum. There was no dyspnea, chest pain or weight loss. The patient denied smoking. Physical examination was not rewarding. A complete blood count, urinalysis and double-strength intermediate PPD were negative. The sputum smears showed no evidence of acid fast bacilli or fungi. The patient had a temperature at times as high as 100°.

**Radiologic Studies:**

A chest film of 7-18-60 (A) shows a bilateral apical process with some nodular densities in each apex and a patchy density in the left apex accentuated by the overlying soft tissue shadows.

On 3-6-65 (B), the nodules in the right apex are again seen and a 6 cm. opacity in the left apex has developed.

The chest examination done on 5-10-67 (C) shows further increase in size of the lesion of the posterior subsegment of the left upper lobe. In addition, there is a fine radiolucent zone surrounding the entire “mass”. The laminograms (D) confirm the presence of the air containing cleft around the oval, slightly lobulated mass.

The films of 5-31-67 (E & F) were made during the transnasal catheterization of the apical posterior bronchus and the insertion of a brush to the edge of the lesion. The brush is shown in place.

Now turn the page for answer to quiz.

**On service of E. O. Coates, M.D.
Both smear and culture of the material obtained at the bronchial brushing disclosed aspergillus. The subsequent growth from routine sputum cultures did not produce any aspergillus.

The chest film of 5-10-67 (C) and the laminogram of 5-27-67 (D) provide a classic demonstration of a "fungus ball". This appearance results from the secondary invasion of a pre-existing cavity in the lung by aspergillus or other fungi. The mass is composed of growing fungi.

The lobe was resected by Dr. Rodman E. Taber. Cultures of the lobe also produced a growth of aspergillus.

*Diagnosis: FUNGUS BALL (ASPERGILUS).*