

The Clinical Picture

A lung-transplant recipient with infiltrates

Q: A 56-YEAR-OLD MAN was admitted with fever, hypotension, bilateral infiltrates, and hypoxemia requiring mechanical ventilation. Six years previously he received a left single lung transplant for end-stage chronic obstructive pulmonary disease, and he was receiving immunosuppression with FK 506, methotrexate, and prednisone. He also had a history of chronic renal insufficiency, bronchiolitis obliterans, and candidal esophagitis (for which he was taking fluconazole).

The patient initially improved with treatment with broad-spectrum antibiotics and amphotericin B, given empirically. However, his condition subsequently worsened and he died. An autopsy revealed multiple, angio-centric, well-circumscribed, irregular, firm, 4-to-5-cm lesions with central necrosis in the upper lobe of the left lung, and the tracheal lesions shown in **FIGURE 1**.

What is the most likely causative organism?

- Candida albicans*
- Pneumocystis carinii*
- Aspergillus fumigatus*
- Mycobacterium tuberculosis*
- Haemophilus influenzae*

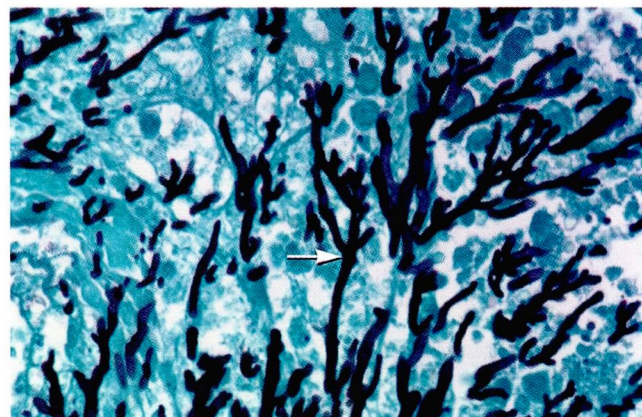
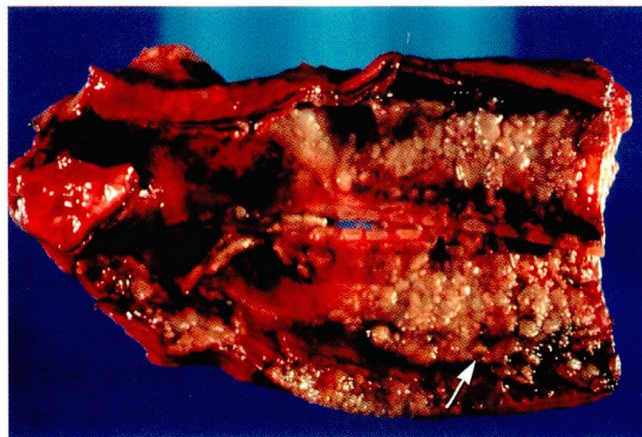


FIGURE 1. Top, gross specimen of the trachea, split in midline anteriorly. Middle, cross-section of the tracheal mucosa, hematoxylin and eosin stain. Bottom, Grocott-Gomori methenamine-silver nitrate stain.

A: Immunosuppressed patients are vulnerable to a variety of opportunistic infections. Infection with *Aspergillus fumigatus* is particularly lethal, although the mortality rate may be less if the infection is diagnosed earlier.

In the gross specimen (FIGURE 1), note the multiple whitish-tan, confluent, flat plaques (arrow) coating the tracheal mucosa. In the hematoxylin and eosin stain, a thick coat of blue-gray fungal hyphae can be seen (arrow) lying atop the tracheal cartilage. The Grocott-Gomori methenamine-silver nitrate (GMS) stain demonstrates septated hyphae (arrow) branching at an acute angle, with tissue invasion.

Cultures of lung tissue grew out *Aspergillus fumigatus*, consistent with invasive bronchopulmonary aspergillosis.

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