

Miliary Histoplasmosis Mimicking Miliary Tuberculosis in a Patient Treated with Tumor Necrosis Factor- α Inhibitor Therapy

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In patients receiving anti-tumor necrosis factor (TNF)- α agents, a miliary pattern on chest imaging is often attributed to tuberculosis. However, fungal infections (histoplasmosis, blastomycosis, and coccidioidomycosis) and metastatic pulmonary disease should also be considered^{1,2}.

A 40-year-old woman, diagnosed with ankylosing spondylitis, was in remission with adalimumab. She presented with a 3-week history of fever, night sweats, dyspnea, and dry cough. She reported exposure to demolition dust from a building adjacent to her workplace. On admission, she was normotensive and tachycardic, and oxygen saturation was 96% with supplemental oxygen (2 l/min). Breath sounds were decreased bilaterally. Chest radiograph and high-resolution computed tomography showed widespread miliary nodules throughout both lungs (Figure 1). Three sputum acid-fast bacillus (AFB) smears were negative. On the bronchoalveolar lavage sample, AFB stain, AFB culture, PCR

for *Mycobacterium tuberculosis* complex were all negative, while fungal culture was positive for *Histoplasma capsulatum*. Transbronchial biopsy identified non-caseating granulomas (Figure 2A) and small ovoid or pear-shaped yeast with narrow-based budding consistent with *H. capsulatum* (Figure 2B). Urine *Histoplasma galactomannan* antigen was positive. Amphotericin-B was administered for 2 weeks followed by 12 months of oral itraconazole, with marked clinical improvement after therapy.

Histoplasmosis is the most frequent invasive fungal infection complicating anti-TNF- α therapy³; however, miliary histoplasmosis is a rare clinical presentation that mimics miliary tuberculosis, and diagnostic delays may lead to increased mortality³. Anti-TNF- α therapy discontinuation is recommended and antifungal treatment must be given for at least 12 months. Resumption of anti-TNF- α appears safe if antifungal therapy is administered for 12 months⁴.

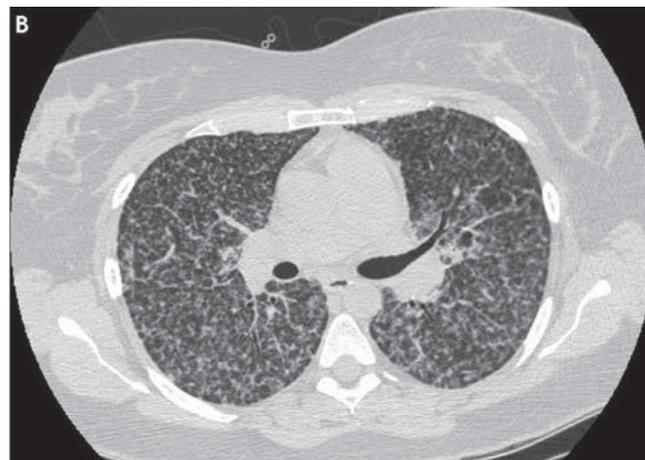
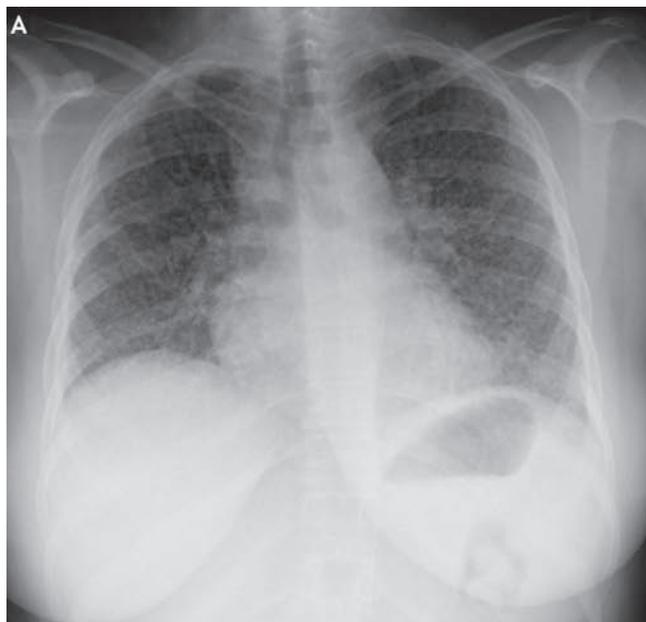


Figure 1. A. Chest radiograph demonstrates diffuse bilateral pulmonary micronodules in a miliary pattern. B. High-resolution computed tomography shows miliary nodules throughout both lung fields.

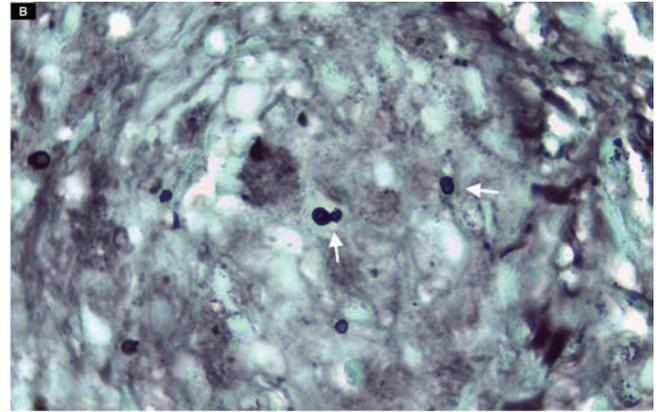
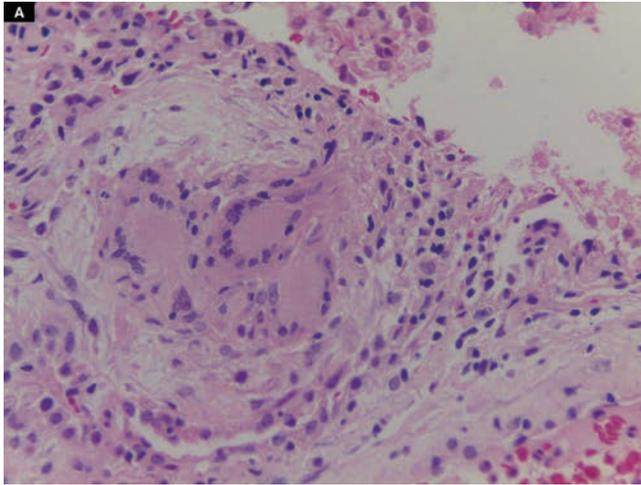


Figure 2. A. Pathology from transbronchial biopsy showing non-caseating granuloma with multinucleated giant cells (H&E, $\times 40$). B. Pathology from transbronchial biopsy showing small black ovoid and budding yeasts (white arrows) consistent with *Histoplasma capsulatum* (Gomori's methenamine silver, $\times 100$).

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