

## Cold Case: Bedside Diagnosis of *Mycoplasma Pneumonia*

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A 35-year-old woman with no past medical history presented to the Emergency Department (ED) with 3 weeks of worsening cough and shortness of breath. Two weeks prior to her presentation she was seen by her primary care physician for flu-like symptoms, including myalgias, subjective fevers, nonproductive cough, and malaise. She was told that her symptoms were attributable to influenza, and she was treated supportively; however, her symptoms progressed, and she was referred to the ED for further care. Of note, she reported recent cross-continental air travel as well as an upper respiratory illness in her young child.

On physical exam she was afebrile with normal vital signs and normal room air oxygen saturation. Her oropharynx was clear, and she had no sinus tenderness, rashes, joint swelling, or palpable lymphadenopathy. She was in moderate respiratory distress and had inspiratory crackles at both lung bases.

Complete blood count, electrolytes, and electrocardiogram (ECG) were within normal limits. A D-dimer level was slightly elevated. Chest X-ray showed a mild hazy opacity at

the right lung base (Figure 1). Computed tomography (CT) angiography of the chest showed bilateral lower lobe infiltrates (Figure 2) but no pulmonary emboli.



FIGURE 2. CT angiogram demonstrating bilateral lower lobe infiltrates.

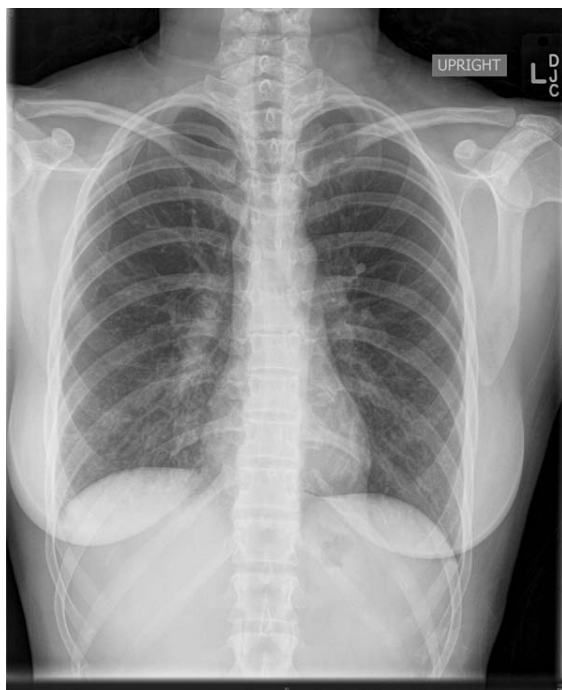


FIGURE 1. Chest X-ray with bilateral lower lobe infiltrates.

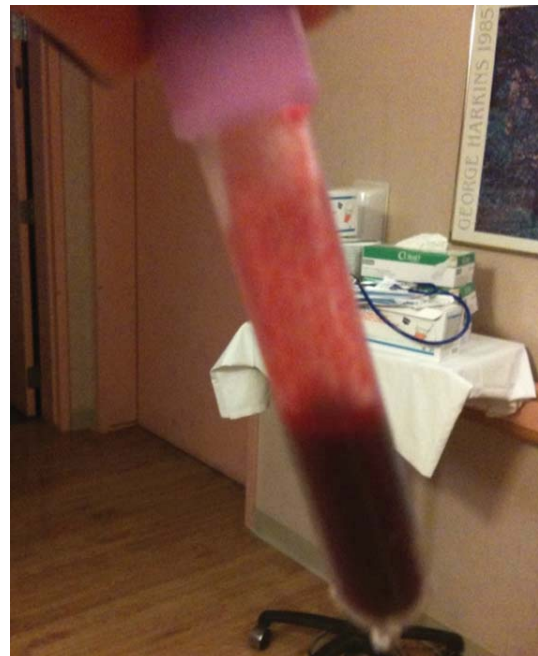


FIGURE 3. Whole blood from patient placed on ice. Speckled appearance on the test tube wall is indicative of cold agglutinins.

A bedside cold agglutinin test, in which the patients blood is drawn into an ethylene diamine tetraacetic acid (EDTA) tube and placed on ice for 30 seconds to 60 seconds, was positive for “grains of sand”, suggestive of high titers of *Mycoplasma pneumoniae* immunoglobulin M (IgM) (Figure 3). The patient was discharged with oral antibiotics and reported marked symptomatic relief within 2 days.

The utility of culture and serology for acute diagnosis of *M. pneumoniae* infection is limited. Cold agglutinins are antibodies—most commonly IgM—that cross-react with red blood cell antigens. They develop in 50% to 75% of patients 1 week to 2 weeks following initial exposure to *M. pneumo-*

*niae* and their incidence decreases with age. Within the clinical context of community-acquired pneumonia, a bedside cold agglutinin test is specific for *M. pneumoniae* and provides a rapid and inexpensive means for confirming a suspected diagnosis.

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