

Pulmonary Infection with *Mycobacterium Gordonae* in an Immunocompetent Patient: A Case Report

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Abstract *Mycobacterium gordonae* is a least pathogenic mycobacterium and a rare cause of infection in human beings [1]. We report a case of 59 year old male with fever, cough, SOB and radiographic features of persistent left upper lobe consolidation/atelectasis with left hilar and mediastinal lymphadenopathy. *Mycobacterium gordonae* was isolated by DNA probe on bronchoalveolar lavage. He was observed without any active treatment for mycobacteria. He healed with minimal scarring of the lung. *Mycobacterium gordonae* can cause clinically significant pulmonary infection but the chances of it being just a contaminant should also be considered [1,2,6].

Keywords: *Mycobacterium gordonae*

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1. Introduction

Though *Mycobacterium gordonae* (*M. gordonae*) is a least pathogenic bacteria and its isolation from respiratory tract is typically considered a contamination, there has been cases of active infection in immunocompetent hosts. [1,2] Infection with this organism is more likely in an abnormal lung than in a normal lung. The organism is ubiquitous and is most commonly isolated from soil and water. Nosocomial transmission has also been reported through tap water used for rinsing of medical instruments and through dye added to topical anesthetic used in bronchoscopy. [3,4,5] We report a case where *M. gordonae* was identified in an adult immunocompetent male.

2. Case Report

A 59 year old male presented to the ER with two months history of fever that was on and off, up to 102 degree Fahrenheit, night sweats, cough, sputum (thick yellow with occasional blood streaks) and shortness of breath. He also had occasional chest pain over the left upper chest especially with coughing and sometimes reported to be pleuritic. His chest pain was not suggestive of angina. All of his symptoms had worsened in the last two weeks before presentation. He had received three courses of antibiotics. His appetite had decreased without weight loss. His other medical history included mild obstructive pulmonary disease, multiple surgeries of his foot, knee, left arm and back for degenerative joint disease. He had also undergone bariatric surgery in the past. He

had 60 pack-year smoking history and had quit smoking 8 years ago. He had negative purified protein derivative (PPD) skin test 6 months ago. He was incarcerated for six months in the past.

On examination, his vital signs were stable with O₂ saturation 93% on room air but desaturated to low 80s on minimal exertion. His body mass index (BMI) was 35.7. He had no cervical adenopathy and had few freely mobile axillary lymphadenopathy bilaterally. Chest examination revealed dull percussion over left clavicle. Otherwise his examination was unremarkable. Chest X-ray showed left upper lobe haziness and right lower lobe plate-like atelectasis. Computed tomography (CT) scan of the chest showed dense hypoaerated alveolar opacity in the left upper lobe apicoposterior segment, left hilar and mediastinal adenopathy (Figure 1). It also showed thickening of surrounding interlobular septa in the left upper lobe (Figure 2). PPD skin test was negative. Sputum analysis and blood culture was unyielding. He had elevated white blood cell count with toxic granulations. He was treated for nonresolving pneumonia with ertapenem. Bronchoscopy was performed which revealed thick secretions in the left mainstem bronchus and flaky and edematous mucosa of left upper lobe. Bronchoalveolar lavage (BAL) and brush and forceps biopsy of left upper lobe was performed. His BAL fluid revealed infection with *M. gordonae* by using 16s rDNA sequencing. No sensitivities were performed according to state lab policy. He improved after treatment with ertapenem and he was discharged on 7 day course of clindamycin and ambulatory oxygen supplementation.

Since his clinical manifestation was improved with no specific therapy for *M. gordonae*, decision was made to monitor the left upper lobe abnormality. After five months,

his lungs had healed with minimal scarring ([Figure 3](#)). He continues to do well till present.



Figure 1. CT at presentation showing dense consolidative opacity involving left upper lobe

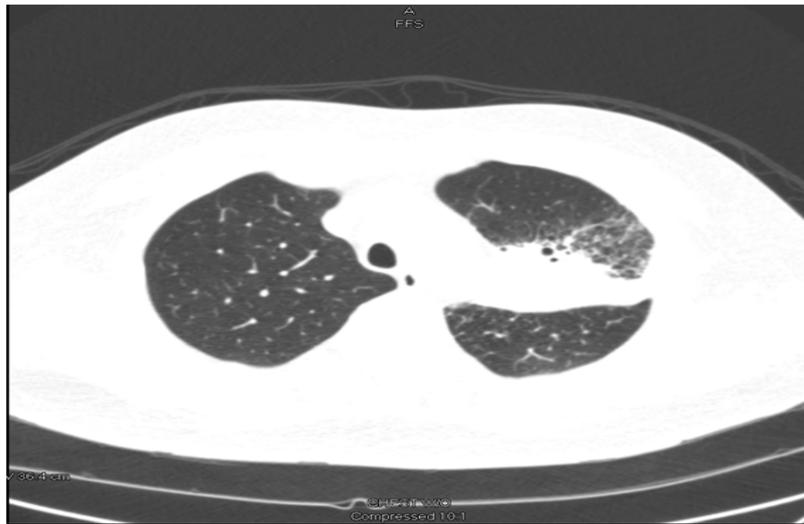


Figure 2. CT at presentation showing dense consolidative opacity of left upper lobe shown at the level of left major fissure



Figure 3. CT after 5 months of follow up showing resolution of the left upper lobe consolidation with minimal residual thickening of left major fissure. No parenchymal damage of left upper lobe is demonstrated

3. Discussion

M. gordonae is slow growing mycobacteria. This organism grows well at a temperature range of 35-37 degree Celsius and can be recovered from pipelines, fresh water and laboratory faucets. *M. gordonae* is typically thought to be a contamination; however there are numerous reports of the organism causing disease particularly in immunosuppressed individuals. [6,7,8] There are only few case reports of immunocompetent individuals, like our patient, to develop symptomatic disease caused by this organism. Positive history of smoking and previous lung abnormalities is strongly associated with infection caused by this organism [1,2].

Infection involving the peritoneum, soft tissue, cornea, genitourinary system and disseminated disease has also been described but pulmonary infection is the most common site of symptomatic disease. Common symptoms include cough, weight loss, dyspnea, hemoptysis and fever [4]. A variety of radiographic findings are possible including pulmonary nodules, cavities, infiltrates, bronchiectasis and consolidation [9]. In addition to clinical symptoms and radiographic abnormalities, positive cultures from sputum, bronchial washings or transbronchial lung biopsy is necessary to make a definite diagnosis. Positive cultures should be interpreted with caution since these cultures are more likely to demonstrate contamination in the absence of clinical and radiographic evidences of disease [7,8]. Commercial DNA probes for rapid identification of *M. gordonae* are available.

4. Conclusions

M. gordonae is capable of causing significant infections in both immunocompromised and immunocompetent hosts. Although the likelihood of this being a contamination is significant, its isolation should prompt further evaluation.

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