Lung Infection Caused by Mycobacterium Fortuitum

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Key words: Mycobacterium fortuitum; lung infection: antibiotics: NTM-PD (non-tuberculous mycobacterial pulmonary disesase)

INTRODUCTION

Mycobacterium fortuitum is a rare cause of pulmonary infection. It is a non-tuberculous mycobacterium (acid fast bacillus) that mainly affects mainly the joints, lymphatic system, eyes, and skin. Mycobacterium fortuitum is a rapidly replicating non-tuberculous mycobacterium with the ability to form colonies in one week. It is resistant to first line anti-tuberculous drugs [1]. The incidence of mycobacterium fortuitum infections has been reported to be on the rise worldwide [1]. It mainly affects the joints, lymphatic system, eyes and skin [2].

The detection of mycobacterium tuberculosis in respiratory sputum or bronchoscopy samples does not always indicate the presence of active lung infection [2]. Therefore, when investigating patients that test positive for mycobacterium fortuitum, many guidelines recommend usage of the same diagnostic triad used to diagnosis pulmonary tuberculosis (clinical, imaging and radiographic features).

CASE PRESENTATION

A previously well patient is a 48 years old man initially seen in the primary care clinic, in Kuala Lumpur, Malaysia, with tuberculosis like symptoms including intermittent fever, cough with phlegm, loss of weight and appetite, and night sweats for nearly one month. Physical examination revealed scattered crepitations over both lungs with no rhonchi. He was not in respiratory distress. Chest radiograph (Figure A) revealed the typical features of cavitation and nodular opacities scattered in both lungs, mainly at the midzone level. Initially he was started on oral amoxicillin and clavulanic acid 625mg three times a day. After one week, he was seen again with his sputum acid fast bacilli (AFB) results which showed the presence of Mycobacterium fortuitum. Based on these findings, the patient was started on the first line of anti-tuberculous medication consisting of isoniazid, rifampicin, pyrazinamide and ethambutol. The patient was also given the neuroprotector pyridoxine.

He was seen two weeks later by the author with some improvement in his symptoms and signs. Test results included normal values for random blood sugar, renal profile, liver enzymes, and screening for human immunodeficiency virus (HIV) infection was negative. Based on these findings, his medications were continued.

Two months later, he reported minimal symptoms but chest radiograph findings remained unchanged and sputum AFB was still heavily positive. At this point also, mycobacterium culture and sensitivity result came back and grew Mycobacterium fortuitum. Therefore it was concluded that more intensive treatment were necessary. After a literature search and consultation with the respiratory clinic, a combination of oral and intravenous antibiotics was started which included oral clarithromycin 500mg twice a day, ciprofloxacin 500mg once daily and intramuscular amikacin 750mg for 12 months based on the mycobacterium culture and sensitivity result. The new regimen which has been in use in this centre for many years led to improvement of his clinical features and imaging studies during the months the revised regimen was taken.

DISCUSSION

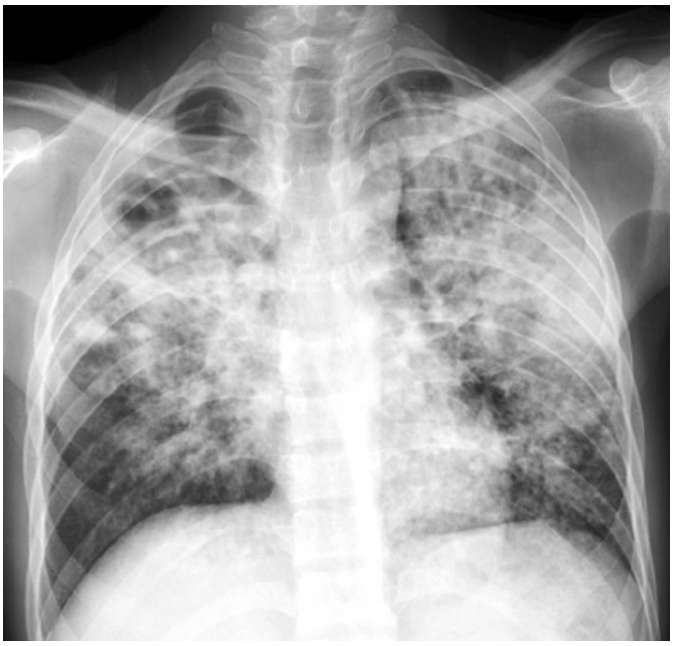
British Thoracic Society (BTS) guidelines [3] for the diagnosis and management of non-tuberculous mycobacterial pulmonary disesase (NTM-PD) recommend the use of the triple tenets of clinical, imaging, and microbiological evidence in diagnosing this group of infections. It is also important to exclude the presence of pre-existing lung disease such as bronchiectasis or previous tuberculosis infection. Increased detection of NTM-PD has been reported to be primarily due to increased physician awareness and better detection methods [4].

Treatment is initiated with at least two antibiotic with demonstrated in vitro susceptibility. This would include oral agents encompassing macrolides such as clarithomycin, quinolones such as ciprofloxacin and tetracyclines such doxycyline or minocyline. Alternatively, parenteral agents such as amikacin or imipenem may be given. These medications must be given for at least 12 months. Susceptibilty of Mycobacterium fortuitum ranged from 100% for amikacin, imipenem or ciproflaxacillin to 80%

for clarithromycin and 50% for doxycyline [5]. Choice of antimicrobial agents will depend on culture and sensitivity testing and local centre preference.

Treatment of NTM-PD remains a challenge. Physicians should familiarise themselves with latest guidelines on these uncommon infections to enable prompt diagnosis and treatment.

Figure A: Radiograph of patient



Acknowledgement: *The author like to thank the patient for his permision to publish this case report.*
Correspondence. *knavin@upm.edu.my*
Potential Conflicts of Interest (CoI). *All authors: no potential conflicts of interest disclosed.*
Funding. All authors: *no funding was disclosed.*
Academic Integrity. *All authors: confirm that they have made substantial academic contributions to this manuscript as defined by the ICMJE.*
Ethics of human subject participation: *The study was approved by the local Institutional Review Board. Informed consent was sought and gained where applicable.*
Originality: *All authors: this manuscript is original has not been published elsewhere*
Type-editor: *Matthew Cardillo (USA)*
Review: *This manuscript was peer-reviewed by 3 reviewers in a double-blind review process.*

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