Journal of the Postgraduate Institute of Medicine 2021; 8(2): E149 1-4

http://doi.org/10.4038/jpgim.8318

Case Report

A farmer with successful recovery from pulmonary melioidosis

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Key words: Pulmonary melioidosis, lung abscess, Burkholderia pseudomallei

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Received: 24 Jan 2021, Accepted revised version: 05 Sep 2021, Published: 15 Sep 2021
Competing Interests: Authors have declared that no competing interests exist

Introduction

Melioidosis is an infection caused by the Gram negative, saprophytic bacterium called *Burkholderia pseudomallei*. It is considered as a potentially fatal, emerging infection and a cause of sepsis and abscess formation. The first local case of melioidosis was diagnosed in 1927 in a European tea broker [1]. Though Sri Lanka is situated in the endemic belt of melioidosis, the disease had been considered uncommon until recent years as a result of misinterpretation of the clinical picture of melioidosis as tuberculosis or *Pseudomonas* infection etc. and lack of awareness about the disease. However, in the last few years there has been an increase in the number of melioidosis cases reported from Sri Lanka due to raised awareness among health professionals and the availability of relevant diagnostic investigations [2]. A total of 250 culture-positive cases were recorded between 2006 and May 2017 [3].

This is another case report of a farmer presenting with a pulmonary infection who showed poor response to conventional treatment for community acquired pneumonia but completely recovered following treatment for melioidosis.

Case report

A 63-year-old, previously healthy farmer who had been cultivating rice for 20 years was admitted to a local hospital with a 5-day history of intermittent low grade fever with chills and rigors, productive cough and constitutional symptoms followed by 2 days of left pleuritic type chest pain. There was no haemoptysis or contact history of tuberculosis. He was a nonsmoker and teetotaler. Clinical examination and initial investigations revealed a febrile patient with a mild to moderate pleural effusion on the left side with adjacent consolidation. Hence, he was diagnosed as having a left lower lobe pneumonia with a para-pneumonic effusion and treated with intravenous (IV) ceftriaxone 2grams daily for 2 weeks followed by oral coamoxyclav 625mg 8 hourly for a week. But his symptoms did

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not improve and a follow up chest radiograph revealed a left sided lung abscess (Figure 1). He was transferred to a tertiary hospital for further management.

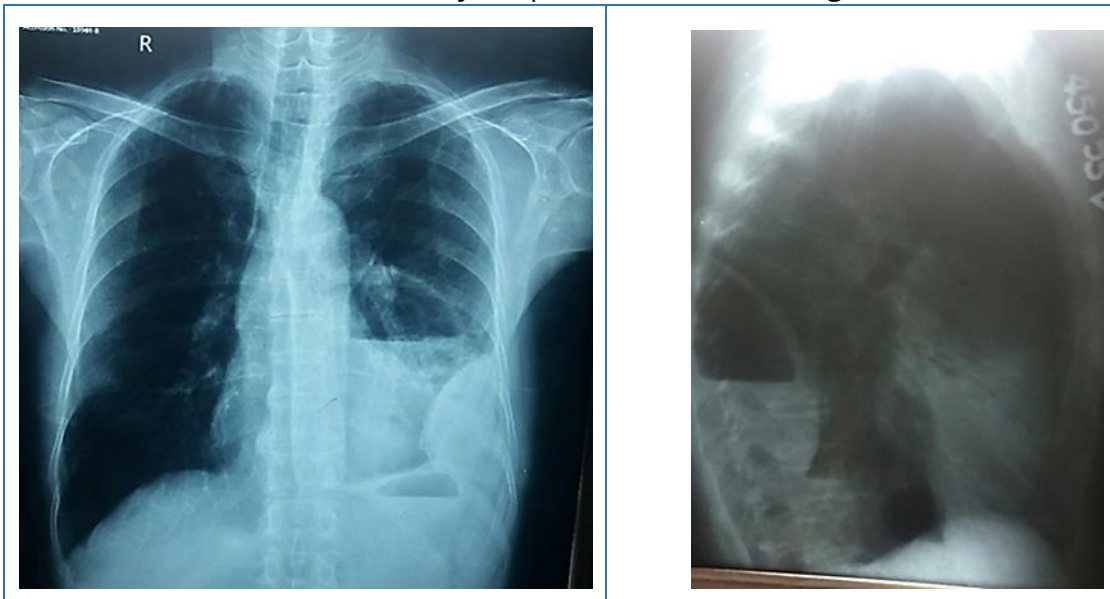

Figure 1: Chest radiograph PA and lateral views showing a left lower lobe lung abscess

His full blood count showed a neutrophil leukocytosis (WBC 19.68×10^9/L, N 73.2%) with hypochromic, microcytic anaemia and there was a persistently high ESR (141mm/hr) and CRP (110mg/dl). Blood cultures were repeatedly negative, and an echocardiogram did not show evidence of infective endocarditis. Sputum culture was positive for a coliform with an antibiotic sensitivity compatible with an extended spectrum beta lactamase (ESBL) producer. Tuberculosis screening by sputum for acid fast bacilli and Gene Xpert were negative. Pleural fluid analysis revealed an exudative effusion, but culture was negative. Retroviral studies were negative. Antibodies to *B. pseudomallei* by the indirect haemagglutination test was positive at a titre of 1: 320 on two occasions one week apart. Contrast computer tomography (CT) of the chest showed a left sided moderate pleural effusion with active infection without evidence of malignancy or deep-seated abscesses. Bronchoscopy and bronchoalveolar lavage results were inconclusive. His fasting blood sugar, liver and renal profiles were normal.

Antibiotics were changed from ceftriaxone to IV meropenem 2g, 8 hourly due to the positive melioidosis serology. IV meropenem was given for 6 weeks and his constitutional symptoms, lung signs, size of the abscess, WBC count and ESR improved with treatment. On discharge, he was fever free for 5 weeks and his ESR had dropped to 78mm/hr. Oral cotrimoxazole and doxycycline was started after 6 weeks of IV antibiotics and continued for 3 months. ESR became normal and the radiographic findings had improved at the end of the treatment regimen and the patient began his routine day to day activities.

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Discussion

Melioidosis is considered a highly neglected tropical disease with a high mortality and morbidity in endemic communities in the developing world. It is considered an emerging infection in Sri Lanka and the number of cases reported has increased with time [3]. Melioidosis is a disease of rural agricultural communities and risk factors include rice farming, military work, construction and the use of untreated water sources. Our patient had a high risk of developing the disease due to his frequent contact with soil and stagnant water. Severe infection is seen in patients with diabetes mellitus, renal disease, liver disease and alcoholism [4] which were negative in this patient.

Melioidosis can be classified as acute (<2 months) or chronic (>2 months) according to the duration of symptoms prior to establishment of the diagnosis. The lung is the main organ involved and lung infection may manifest as acute lobar or broncho pneumonia, empyema or lung abscess or even mimic caseating tuberculosis [5]. Definitive diagnosis of melioidosis depends on isolation of *B. pseudomallei* from patient's blood, pus, sputum or urine. However, the indirect haemagglutination assay (IHA) is a widely used serological test to identify antibodies to the pathogen. A fourfold rise in titre is helpful to diagnose the disease but an antibody titre of >1:160 is also highly suggestive [6].

The main therapeutic options for melioidosis include beta-lactams (e.g. ceftazidime), carbapenems, trimethoprim-sulfamethoxazole (TMP-SMX), and doxycycline, depending on the phase of treatment. The goal of initiation therapy is to minimize mortality from acute infection and the goal of eradication therapy is to prevent relapses. All cases of melioidosis should treat with at least two weeks of intravenous antibiotic therapy followed by oral antibiotic eradication therapy. Longer durations of at least four to eight weeks are needed in cases, such as prolonged critical illness, extensive pulmonary disease, deep-seated collections or organ abscesses, osteomyelitis, septic arthritis, or neurologic melioidosis [7]. Index patient was managed with six weeks of IV antibiotics due to the extensive pulmonary involvement. Surgical drainage of pus is recommended for abscesses. Guidelines suggest oral (PO) trimethoprim-sulfamethoxazole (TMP-SMX) alone for eradication therapy with doxycycline as alternative therapy. Minimum duration of eradication is three months. Relapses may occur if there is poor treatment compliance with eradication therapy.

Conclusion

Early diagnosis and adequate treatment of melioidosis is very important in tuberculosis endemic countries like Sri Lanka as both diseases share a similar clinical picture. This case describes pulmonary melioidosis which clinically and radiologically mimicked tuberculosis but was managed successfully by correct diagnosis and initiation of effective treatment.

References

1. Denny CR, Nicholls L. Melioidosis in a European. Ceylon J Sci. 1927; 2:37-40.

2. Sathkumara HD, Merritt AJ, Corea EM, Krishnananthasivam S, Natesan M, Inglis TJJ, De Silva AD. Clinical, Bacteriologic, and Geographic Stratification of Melioidosis Emerges from the Sri Lankan National Surveillance Program Am J Trop Med Hyg. 2018; 98(2):607-615. https://doi.org/10.4269/ajtmh.17-0441
3. Corea EM, de Silva AD, Thevanesam V. Melioidosis in Sri Lanka. Tropical Medicine and Infectious Disease. 2018; 3(1):22. https://doi.org/10.3390/tropicalmed3010022
4. Leelarasamee A, Bovornkitti S. Melioidosis: Review and update. Reviews of Infectious Diseases 1989; 2:413-425. https://doi.org/10.1093/clinids/11.3.413
5. Reechaipichitkul W.Clinical manifestation of pulmonary melioidosis in adults.South East Asian J Trop Med Public Health 2004: 35(3):664-9
6. Appassakij H, Silpapojakul KR, Wansit R, Pornpatkul M. Diagnostic value of the indirect hemagglutination test for melioidosis in an endemic area.Am J Trop Med Hyg. 1990; 42(3):248.[Pub med] https://doi.org/10.4269/ajtmh.1990.42.248
7. Sullivan RP, Marshall CS, Anstey NM, Ward L, Currie BJ. 2020 review and revision of the 2015 Darwin melioidosis treatment guideline; paradigm drift not shift. PLoS Neglected Tropical Diseases. 2020 Sep 28;14(9):e0008659. https://doi.org/10.1371/journal.pntd.0008659