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THE MIMICKER OF MALADIES: A SUCCESS STORY

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Abstract
Melioidosis is being diagnosed more frequently from Indian subcontinent in the recent days. It is a serious multisystem infection caused by *Burkholderi pseudomallei*. [1-2] We discuss the case of a 55 year old Diabetic patient, who presented with complaints of fever, cough, breathlessness and loss of weight of one month duration. Due to poor response to conventional treatment, he was further investigated – Bronchoscopy and CT Thorax was done. Bronchial wash and sputum culture confirmed Pulmonary Melioidosis. The patient received treatment with Inj. Ceftazidime and was continued on oral Cotrimoxazole. Treatment was successful with good clinic radiological resolution. The patient is under follow up and is asymptomatic.
Keywords: burkholderia, diabetics, melioidosis, pneumonia

Introduction:

Melioidosis is a multi-system suppurative disease caused by *Burkholderia pseudomallei*, a soil saprophyte endemic in South East Asian countries. It has been recognized as a threat to public health because of the increasing number of case reports from Bangladesh and India. 3-4 Owing to the multi-system involvement and protean clinical manifestations, it leads to misdiagnosis and therapeutic delay unless the index of suspicion is high. We describe the successful treatment outcome in a Diabetic with melioidosis pneumonia in this context.

Case Report

A 45-year-old Diabetic male was admitted under the department of Pulmonary Medicine, JIPMER, with complaints of fever, cough with expectoration, and breathlessness of 1-month duration. He had a history of loss of weight of 3 kg over 1-month duration.

Fever was intermittent -high grade and associated with chills and rigor. Cough was productive with copious yellowish non-foul smelling expectoration. He had MMRC Grade IV dyspnoea and required Oxygen supplementation. He had type 2 Diabetes Mellitus for 4 years and was on regular medication. He was a bidi smoker with Smoking index 120. He worked as a construction labourer for 10 years. For the above complaints, he was treated in a local hospital with intravenous antibiotics for two weeks but his clinical condition was deteriorating and he was referred to our hospital.

On examination, he was sick-looking, febrile 102o F with a pulse rate of 110/min, blood pressure of 90/60 mm Hg. He was tachypnoeic, and his oxygen saturation was 90% in room air. The general physical examination was unremarkable. Respiratory system examination revealed bilateral diffuse coarse crackles over all auscultatory areas of the chest. Other systems' examination was within normal limits.

Reports of the hematological evaluation showed anaemia with neutrophilic leukocytosis. Blood sugar was elevated, and Hb A1cwas 7.5%. Liver and renal function tests showed normal results. Chest Xray PA revealed multiple cavities with air-fluid levels in bilateral lungs. Sputum smear for acid-fast bacilli and gene expert for mycobacterium tuberculosis were negative. Blood culture and urine culture was sterile.

A contrast-enhanced CT scan of the thorax showed multiple cavities in bilateral lung fields with air-fluid levels. A flexible fiberoptic bronchoscopy was performed, which showed purulent secretions from all lobar and segmental bronchi. Bronchial wash pyogenic culture showed growth of Burkholderia pseudomallei.

His blood sugar level was brought to control with oral hypoglycemic agents. He was treated with injection Ceftazidime 2 g intravenous q8 hourly for three weeks for pulmonary melioidosis. The patient had significant clinico-radiological improvement and subsequently, he was started on Oral Cotrimoxazole as maintenance therapy. He was tapered off oxygen. He was motivated for smoking cessation, discharged with monthly follow-up advice and continued on oral cotrimoxazole for 12 weeks. At the time of final follow-up, patient was symptom-free, chest radiology showed complete resolution of lesions, and the patient had a weight gain of 3 kg.

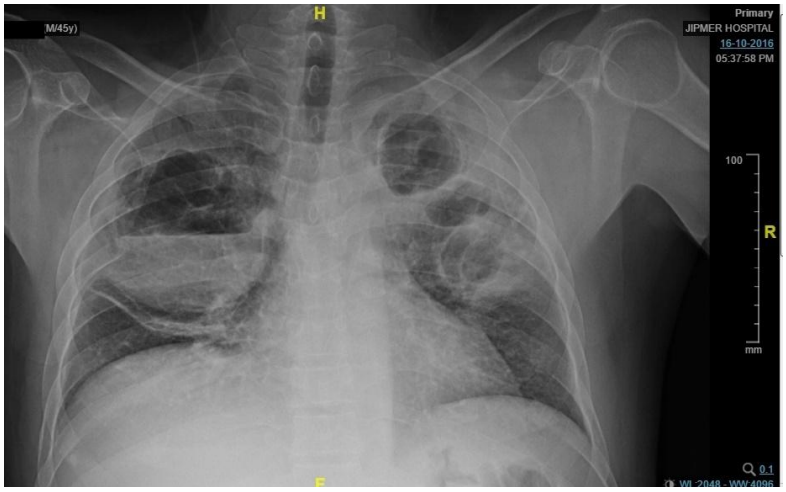

Figure 1: Skiagram Chest PA view showing multiple cavities with air fluid level in bilateral lung fields

Figure 2: CT Thorax cuts showing thick walled cavities with air fluid levels

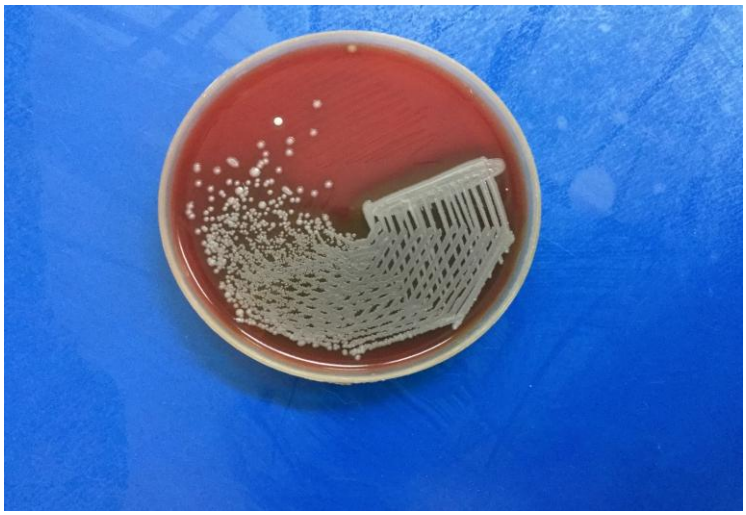

Figure 3: Blood agar plate showing growth of Burkholderia pseudomallei

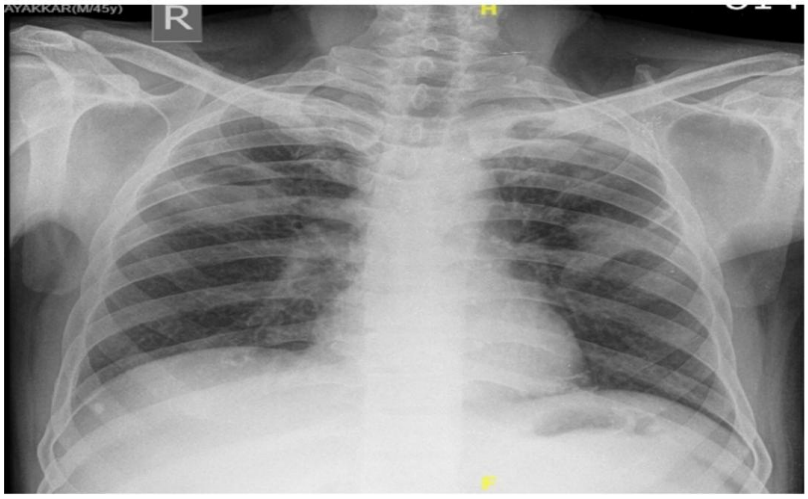

Figure 4: Skiagram Chest PA view showing significant resolution of lesions on treatment

Discussion

The spectrum of diseases caused by infection due to Burkholderia pseudomallei is referred to as melioidosis. It is also called Vietnamian Tuberculosis and Mimicker of maladies. Inoculation of the organism through broken skin is the most common route of entry. Other modes are inhalational or by ingestion. Diabetes mellitus, alcoholism, thalassemia, liver cirrhosis, and immunosuppressive agents contribute to an increased risk of developing melioidosis.3-6

Clinically apparent human melioidosis is infrequent. The disease process may remain localized or, if dissemination occurs-it lead to abscess formation in different organs. The lung is the most common organ involved. The manifestations range from acute fulminant sepsis to chronic debilitating infection and extrapulmonary suppuration. The most common presentations, as per an Indian study by Vidyalakshmi et al., are pneumonia, musculoskeletal disease, and lymphadenopathy.7

Primary melioidosis pneumonia occurs after inhalational entry of the pathogen into the body. Pneumonia secondary to bacteremic dissemination results in widespread disease. Cutaneous pustules, diarrhea, meningitis, arthritis are common accompaniments. The radiological picture varies from patchy infiltrates to diffuse lung involvement, isolated lobar or multilobar involvement, cavitating disease or pleural effusion.8 This radiological picture might thus be indistinguishable from pulmonary tuberculosis. Due to lack of microbiological infrastructure availability, primary care physicians may misdiagnose it as a case of smear-negative tuberculosis and start on antitubercular therapy. In this context, a high index of suspicion by the pulmonologist is valuable to prevent complications and mortality.

Our patient presented with features of non-resolving pneumonia. Among the recognized risk factors, he had a history of poorly controlled Diabetes, smoking, and alcoholism. Investigations confirmed melioidosis pneumonia. He was treated with parenteral ceftazidime and continued oral cotrimoxazole and followed up until complete cure was achieved.

Conclusion

Melioidosis is underdiagnosed in Indian settings and hence physicians need to be alerted of this negelected killer. High index of suspicion has to be maintained in pneumonia cases poorly responding to guideline based antibiotic therapy. Timely diagnosis and prompt treatment can prevent septicemia and mortality due to melioidosis.

Consent to publish

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

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