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## Melioidosis: A Rare Case of Hemoptysis with Pseudoaneurysm.

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### ABSTRACT

Melioidosis, a highly contagious disease, often fatal caused by *Burkholderia pseudomallei*, a gram negative bacteria, often lurks in water, soil and air and is widely prevalent in India. It is a nightmare to the physician to reach to a substantial diagnosis as it mimics various infections. High variability is seen in the clinical presentation and ranges from acute respiratory illness to chronic debilitating illness with pneumonia being the commonest presentation. Sputum culture remains the gold standard for diagnosing melioidosis. Antibiotics remains the choice of treatment. It often presents as community-acquired pneumonia and sepsis, but can involve almost any part of the body. In this case report, we illustrate a rare but fatal complication of this increasingly reported and important disease. A 61 year old patient, known alcoholic, smoker and a diabetic, presents with low grade fever, night sweats associated with cough and hemoptysis since 10 days to the emergency department. Vitals were stable and chest X-ray revealed right hilar prominence with opacity in upper zone and CT scan reveals right apical segment cavity with pseudoaneurysm and centrilobular nodules. Sputum samples for AFB and malignant cells were negative. Sputum culture showed *Burkholderia pseudomallei* sensitive to ceftazidime and the patient was started on parenteral ceftazidime, continued for 10 days and then shifted to oral ceftazidime and cotrimoxazole for a period of 8 weeks. The condition of the patient gradually improved, hemoptysis stopped in two weeks. After 8 weeks on follow up visit patient was clinically normal. Further studies are necessary to determine the medical, economical impact and their outcomes in endemic population in India.

**Keywords:** hemoptysis, ceftazidime, diabetes mellitus, tuberculosis

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**CASE REPORT**

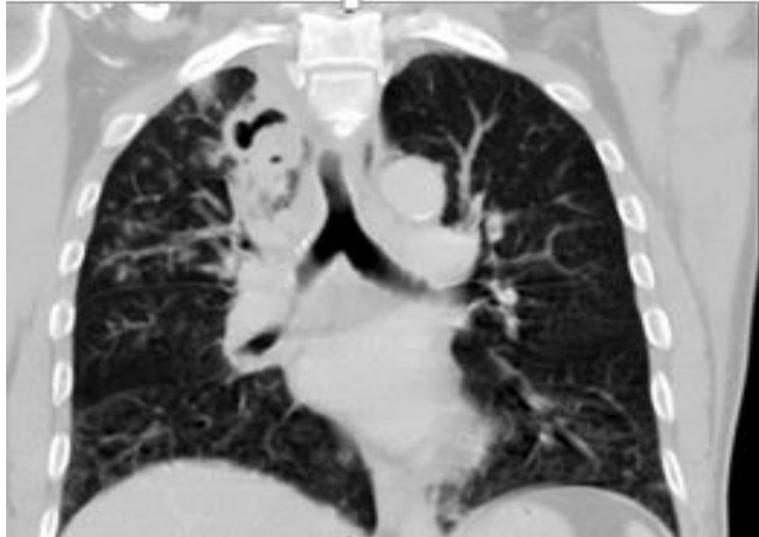
A 61 Year old male, a profound smoker and a reformed alcoholic, a known diabetic and hypertensive, agriculturist by occupation presented with low grade and intermittent associated with night sweats of two weeks duration. The patient also complained of cough for two weeks with expectoration and repeated episodes of moderate amount of hemoptysis since one week. There was no history of loss of appetite and weight. His bladder and bowel functions were normal with no significant family history. General examination was unremarkable. Vitals were normal with saturation of 99% on room air. Respiratory examination revealed crepitations on right infraclavicular, inter and intra scapular regions. Other system examination were normal. Renal and liver function tests were within normal limits, with normal coagulation and lipid profile. His blood examination revealed anemia with slightly elevated total leucocyte count and ESR (TABLE 1) . Glycemic profile revealed elevated random blood sugar with increased Hb1ac despite treatment for diabetes. Urine examination was insignificant. Chest X ray revealed right upper zone opacity with right hilar prominence (FIG 1). As a part of provisional diagnosis either of the one namely pneumonia ,tuberculosis and bronchogenic carcinoma was suspected. Patient was treated with short acting insulin, losartan, cough suppressant, antipyretics ,pantoprazole and multivitamins. There was persistence of low grade fever, cough with persistent hemoptysis . On day 3 the patient was started on Co-Amoxiclav. Abdominal ultrasound revealed hepatomegaly and splenomegaly with multiple hypoechoic lesions. Right kidney staghorn calculus also was noted. Patient was negative for HIV, HbsAg and HCV antibodies. Mantoux was negative. First sputum AFB sample was negative. CT chest and abdomen revealed Patchy areas of consolidation with cavity formation noted in the apical segment of the right upper lobe with focal area of enhancement measuring 1 cm x 1.2 cm x 0.9 cm – PSEUDOANEURYSM, multiple nodules with tree in bud appearance noted in both the lungs (Rt > Lt); Multiple Para tracheal lymph nodes seen; No pleural effusion(fig 2 ), Staghorn calculus in right kidney; multiple hypodense lesions scattered throughout the spleen fig(3) Day 6 patient was afebrile with persistent hemoptysis. All three samples of sputum AFB were negative and sputum for malignant cells was also negative. Patient was started on 3 drug ATT but later on day 7 sputum culture revealed burkholderia pseudomallei sensitive to ceftazidime. ATT was stopped and patient was started with Ceftazidime 2g i.v. q 8 hourly , Co-trimoxazole . Hemoptysis stopped after two weeks and blood parameters improved. Repeat CT scans showed improvement. Ceftazidime was continued for three more weeks along with cotrimoxazole. He was asymptomatic on follow up after three weeks and was advised follow up after 8 weeks with same treatment continued . Patient was completely normal and healthy

**Table 1: Blood Parameters**

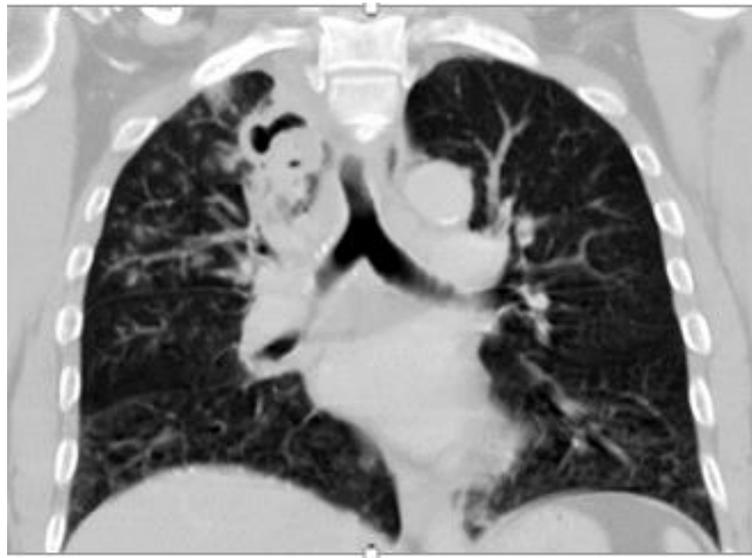
HAEMOGLOBIN	11 % g
TOTAL LEUCOCYTE COUNT	12,400
ESR	48mm/Hr
PLATELET COUNT	2,40,000/ cmm



**Figure 1: Chest x ray – Right upper lobe opacity with hilar prominence**



**Figure 2: CT scan lungs – cavity formation in right upper lobe apical segment with pseudoaneurysm and centrilobular nodules in both lungs( tree in bud appearance )**



**Figure 3: CT abdomen-hepatomegaly with multiple hypohyoechoic lesions in spleen**

**DISCUSSION**

Burkholderia pseudomallei also called as pseudomonas pseudomallei is an intracellular gram negative bipolar staining aerobic motile shaped rod with a safety pin appearance when seen microscopically measuring 25 micro metre in length and 0.4 -0.8 micro metre in diameter . Burkholderia pseudomallei , a potential bio terrorism agent, Causes Melioidosis in humans . Melioidosis is endemic in southeast Asia and Australia<sup>1</sup> . It is now an emerging disease in india with few case reports <sup>2-3</sup>.Melioidosis also called as Whitmore’s disease was first brought to notice by Alfred whitmore and CS krishnaswamy among morphine addicts in Rangoon in 1911<sup>4</sup>. Stanton and Fletcher proposed the name Melioidosis which is derived from a greek word “melis “ meaning “distemper of asses “ and “osis “ meaning (a condition)<sup>5</sup>. Melioidosis is found to be endemic in south eastern parts of Asia and also northern Australia. In India the disease is prevalent all around the country but it is less reported as well as underdiagnosed<sup>6</sup>. There are few case reports from Vellore district as well from Kerala and Karnataka and other parts of India<sup>7-11</sup>. It is mainly spread by percutaneous inoculation<sup>12</sup> but inhalational route of spreading is also documented. The disease has an incubation period of 9 -21 days and its highly seasonal with 75 % of cases occurring during the monsoon rainfall season<sup>13</sup>. It is also called as “Vietnamese time bomb”<sup>14</sup> as it was isolated from the military troops in the endemic region with a latency period of 62

years. Clinically melioidosis can present as acute localized infection , acute pulmonary ,acute blood stream or disseminated infection. Presentations vary from pneumonia to meningoencephalitis, visceral abscess, septic arthritis, fever of unknown origin ,chronic suppurative infections. Sometimes symptoms mimics tuberculosis. Usually after infected symptoms appear in 2 to 4 weeks but if the bacterial load is greater than fifty patients become symptomatic within hours. Even normal healthy individuals<sup>15</sup> can be affected if they have risk factors like diabetes ,alcoholic , smoker , immunosuppression and liver disease. Morbidity and mortality is very high in patients with risk factors. The most common affected organ is the lung and it can present has either acute or chronic pneumonitis , abscess formation ,cavitation ,pleural effusions , pulmonary nodules and pneumonia . Pneumonia presents has fever ,cough ,decreased SPO2, hemoptysis, chills, rigors , pleuritic chest pain and purulent sputum. Often the diagnosis is confused with tuberculosis but sputum culture remains the gold standard for diagnosing melioidosis .

So the clues in diagnosing melioidosis in this case were the occupation of patient ,continued low grade fever and hemoptysis despite treatment and sputum samples negative for AFB with CT scan showing cavities and bacterial arteritis with hepatomegaly and splenomegaly with multiple hypoechoic nodules. Also associated risk factors like diabetes ,hypertension and alcohol usage. Atleast 10 % of patients presents with chronic respiratory illness (sick <2 months ) mimicking tuberculosis with upper lobe infiltrates. Reactivation of latent tuberculosis after decades can also be kept in view but its very rare. Sputum culture becomes the gold standard in diagnosing melioidosis .

### CONCLUSION

Septicaemia and acute pulmonary forms are the most severe with fatality rates as high as 40 % despite appropriate treatment. Analysis of resistance pattern of burkholderia strains showed the severe cases of melioidosis were best treated with at least 10 days of intravenous intensive therapy with ceftazidime followed by 12 to 20 weeks of an oral eradication therapy with ceftazidime and cotrimoxazole. Outcome depends on both severity of cases and associated risk factors . There is a unfamiliarity of clinicians with the disease .A heightened awareness of melioidosis among clinicians in countries with high prevalence of TB would have a substantial impact on public health as the disease is potentially treatable

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