CASE REPORT

Melioidosis mimicking tubercular cold abscess

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SUMMARY

Burkholderia pseudomallei is a Gram-negative bacillus found in soil. The infection is thought to occur by inoculation or inhalation. It usually affects people with predisposing factors like diabetes mellitus and chronic alcoholism. A 36-year-old man, on the treatment of diabetes in the past 4 years, on oral hypoglycaemic drugs, presented to us with pain and insidious onset of swelling over left loin like a lumbar cold abscess. He underwent incision and drainage of the abscess. As per the culture report, we used ceftazidime for 2 weeks, followed by cotrimoxazole for 6 months. Surgical drainage of large abscesses is indicated. A dedicated team of microbiologist and physicians is required to identify and treat the disease. Orthopaedic manifestations are uncommon.

BACKGROUND

Melioidosis, an infection caused by *Burkholderia pseudomallei*, is endemic in Northern Australia and parts of Southeast Asia.¹ *B. pseudomallei* is a Gram-negative bacillus found in soil. The infection is thought to occur by inoculation or inhalation especially in patients with predisposing factors like diabetes mellitus and alcoholism.² The clinical manifestation varies from mild localised infection to

Figure 2 Thinning of skin over the apex of the swelling.

fulminant sepsis.³ This condition is mostly under-reported. Bone and joint involvement has been reported in travellers without any comorbidities.⁴ Melioidosis has been increasingly reported in India in recent years, probably because of increased awareness among clinicians and microbiologists and increasing recognition of the organism.³ The disease has been called a 'Great Mimicker', as it produces a wide range of clinical features.⁵ Melioidosis often mimics tuberculosis.⁶

CASE PRESENTATION

A 36-year-old man, diabetic on treatment in the past 4 years, presented with pain and insidious onset of swelling over left loin of 20 days' duration (figure 1). The swelling progressively increased and was associated with low-grade intermittent fever with no other constitutional symptoms. The swelling measured 15×10 cm, extending from the midline to the left flank. There was thinning and redness of the skin over the apex (figure 2). It was fluctuant and soft. Blood pressure was 130/86 mm Hg; heart rate was 90/min. The spine and hip examination was normal.

INVESTIGATIONS

His haemoglobin was 17 g/dL, white cell count was $7.8 \times 10^9/L$, erythrocyte sedimentation rate (ESR) at 1 hour was 50 mm, fasting blood sugar was 319 mg/dL and urine sugars were 3+. The chest radiograph was normal, and the spine radiograph showed mild lumbar scoliosis (figure 3). MRI of the back showed features of subcutaneous abscess in the lumbar region extending from midline to left flank with multiple septations (figures 4 and 5) with normal signal intensities in the muscles and vertebrae adjacent to the abscess.

Figure 1 Swelling over left loin.

CrossMark

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Figure 3 Anteroposterior radiograph showing mild lumbar scoliosis.

DIFFERENTIAL DIAGNOSIS

Melioidosis should be suspected in patients presenting with tubercular abscess, especially in patients with diabetes mellitus.

TREATMENT

The patient was started on insulin followed by incision and drainage of the abscess. About 300mL of pus was drained

Figure 4 MRI coronal section showing subcutaneous abscess.

Figure 5 MRI sagittal section showing abscess with multiple septations.

followed by thorough curettage of the abscess wall. The surgical incision was closed primarily over a suction drain.

Postoperatively, he was put on broad spectrum antibiotics. The blood culture was negative. Histopathology of the abscess wall revealed large areas of caseous necrosis surrounded by granuloma consisting of epithelioid cells, Langhans giant cells, lymphocytes and plasma cells, consistent with tuberculosis. The PCR for *Mycobacterium tuberculosis* was negative. However, the pus culture showed moderate growth of *B. pseudomallei*. Hence, the diagnosis of melioidosis was made.

OUTCOME AND FOLLOW-UP

The patient was started on injection of ceftazidime 2g/8 hours for 2 weeks (intensive phase) as advised by physicians and microbiologists. In the postoperative period, his blood sugars were under control. There were no signs of wound complication. He was started on oral cotrimoxazole (continuation phase) which was given for 6 months. The patient was followed at regular intervals with complete blood count, renal and liver function tests, chest radiograph and ultrasound abdomen to look for any evidence of local or distant recurrence of the disease. [Figure 6](#) shows follow-up of the patient after 1-year follow-up.

DISCUSSION

An extensive review by Cheng and Currie⁷ documented that melioidosis is found to be endemic in Southeast Asia and Northern

Figure 6 Scar healed by primary intention at 1-year follow-up.

Australia. Pneumonia is the most common presentation. There is a close association of occurrence of the disease with the rainfall.⁷

There is also a commendable work done by Gopalakrishnan *et al*¹ and Saravu *et al*,² where they observed increasing incidences of melioidosis and its association with exposure to wet soil and surface water. Men were more commonly affected, probably related to outdoor work.

In the present case, the patient presented with mild fever, minimal constitutional, normal leucocyte count and ESR, which suggests unlikely of an acute pyogenic infection. A primary clinical diagnosis of the tubercular cold abscess was made. The histopathological features of the abscess wall were also suggestive of tuberculosis. However, the microbiologists identified *B. pseudomallei* from the pus. The PCR for *M. tuberculosis* was negative.

There is enough from the literature that melioidosis, which mimics tuberculosis,⁶ may be in clinical features or radiology or histopathology. It has been concluded by Vidyalakshmi *et al*⁶ that melioidosis should be ruled out in patients with suspected tuberculosis, especially in diabetics, by their observations on 22 reported cases who were initially treated for tuberculosis but were later confirmed as melioidosis. Impaired neutrophil function in diabetics and chronic alcoholics appears to be the reason for the pathogenesis of the disease.⁷

Definitive diagnosis of melioidosis requires a positive culture of *B. pseudomallei*.⁸ The organism is Gram-negative bacilli with 'safety pin' appearance. It can be identified reliably from its biochemical profile. The clinical spectrum is extremely variable.⁹ To our belief, our patient had acute localised suppurative infection of the subcutaneous tissue.

The antibiotic therapy for melioidosis includes initial intensive phase, followed by eradication phase. Ceftazidime and meropenem are the drugs of choice for initial intensive therapy. However, it is recommended to add cotrimoxazole in neurological, cutaneous, bone and joint, and prostatic melioidosis, in view of excellent tissue penetration. The duration of initial intensive therapy should be at least 10–14 days, with longer treatment

required for patients with critical illness with the extensive pulmonary disease, deep-seated collections or organ abscesses, osteomyelitis, septic arthritis and neurological melioidosis.¹⁰

Eradication therapy is considered necessary to prevent recrudescence or later relapse. Cotrimoxazole is the critical component for eradication therapy. It can be used alone or in combination with doxycycline. A minimum of 3 months of eradication therapy is recommended.¹⁰

In the present case, we administered ceftazidime for 2 weeks, followed by cotrimoxazole for 6 months. The patient was evaluated for any evidence of multifocal infection. There was no evidence of recurrence in 1-year follow-up.

Surgical drainage of large abscesses is indicated, but this is usually not necessary or possible for multiple small abscesses in the spleen and liver.¹⁰

Learning points

- This was our first experience of treating melioidosis.
- The condition is uncommon.
- Histopathological features of melioidosis are similar to tuberculosis and should be suspected in patients presenting with tubercular abscess, especially in patients with diabetes mellitus.
- Complete treatment with intensive phase and eradication phase is essential.

Contributors RSK: collected details of the case, followed up and drafted the manuscript. SNB: involved actively in the treatment of the case including assisting at the surgery, edited and submitted the manuscript. SPM: performed surgery and is the chief surgeon under whom case was treated.

Competing interests None declared.

Patient consent Obtained.

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