

Melioidosis presenting as genitourinary infection in two men with diabetes

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ABSTRACT

Melioidosis is an infectious disease caused by *Burkholderia pseudomallei*. It occurs predominantly in tropical regions. The manifestations are protean which include pneumonia, visceral abscesses, septic arthritis, osteomyelitis, acute suppurative and chronic granulomatous lesions with involvement of almost all organ systems. Fulminant sepsis is much more common and is associated with high mortality. Hence prompt recognition and early treatment is warranted. We report unusual presentations of urinary tract melioidosis in two diabetic men.

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Melioidosis is caused by *Burkholderia pseudomallei*, an aerobic gram-negative bacillus belonging to the *Pseudomonas* family. This infection is not uncommon in Southeast Asia and Australia.^[1] In recent years melioidosis has been increasingly reported from India.^[2] The clinical features are protean and may include genitourinary manifestations. In these patients, diagnosis can be missed if awareness is low. Mortality associated with this infection is high and can be minimized by instituting early and specific antimicrobial therapy. Therefore diagnosis of this infection assumes importance and can be achieved by aerobic culture on ordinary media.

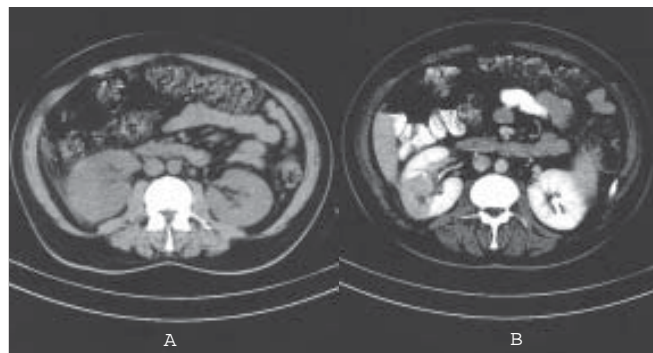
Since there are not many reports on genitourinary melioidosis and the awareness about this manifestation is low among practicing clinicians and laboratory personnel, we report our experiences with two cases.

Case History

Case 1

A 36-year-old diabetic (Type I) male from West Bengal, India, on irregular treatment with insulin, presented with persistent high-grade fever of two months duration. He had evening rise of temperature, loss of weight and appetite. He was initially treated for right facio-maxillary abscess in another hospital few weeks ago. Ultrasound abdomen as part of fever workup at his place showed pyelonephritis and hence he was referred to the Urology department. On examination he had nontender

hepatosplenomegaly and a 10 x 10 mm boggy swelling in the right lobe of the prostate by digital rectal examination. Routine investigations revealed pyuria, leucocytosis with raised ESR and grossly elevated blood sugars. Culture of midstream urine at this point was reported as contaminants. Computerized tomogram of the abdomen showed hepatosplenomegaly with splenic vein thrombosis. Right kidney was enlarged with a large ill-defined hypodense area with foci of necrosis extending from the upper pole to the lower pole. There was splaying of calices and associated perinephric stranding [Figures 1A and B]. The left adrenal gland showed a mild attenuating hypodense nodule in its lateral limb and the prostate had low attenuating areas [Figure 2]. Ultrasound-guided fine needle aspiration of the renal lesion showed tubulointerstitial nephritis. Histology and culture of three early morning urine samples were negative for mycobacterium. At this point lymphoproliferative disorders and rare infectious diseases were considered. A bone marrow aspiration was done and it showed hypocellular marrow with a shift to the left. Subsequent midstream urine samples and the pus aspirated from the right kidney grew *Burkholderia pseudomallei*, which was confirmed by standard routine tests.^[3] He was then given ceftazidime 1 gm q8h intravenously and co-trimoxazole (800/100 mg) twice daily orally. He became afebrile within 48h and his appetite improved. He was discharged with advice to continue Co-trimoxazole twice daily for a period of six months. Follow-up ultrasound after one year showed complete resolution of infective pathology [Figure 3]. On follow up he was asymptomatic and urine culture showed no growth.



Figures 1: (A and B) Plain and contrast enhanced CT showing ill-defined hypodense area in right kidney with splaying of calices and perinephric stranding

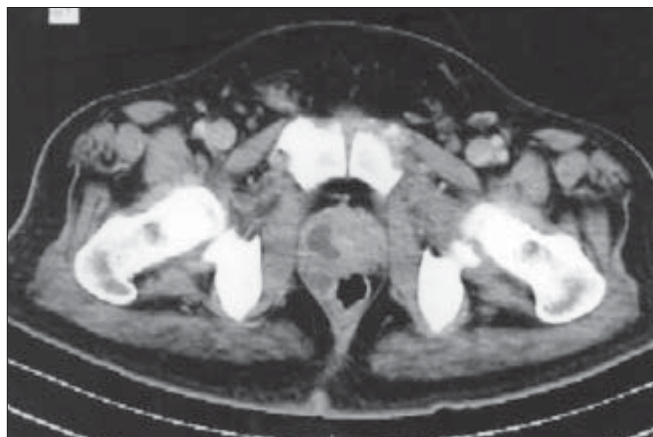


Figure 2: CT scan showing a low attenuating area in prostate



Figure 3: Ultrasound showing normal right kidney at follow-up

Case 2

A 50-year-old man, with Type II diabetes also from West Bengal, India, had fever and chills for 15 days. He was diagnosed to have urinary tract infection (UTI) with urinary retention and was catheterized in another hospital. He presented to us with the catheter. Diagnosis of precipitated acute urinary retention was made and trial of voiding was suggested. Following this he presented in the emergency department with high-grade fever. He was re-catheterized. Investigations revealed leucocytosis with neutrophilia and elevated blood sugars. Ultrasound scan showed prostatic enlargement with thickened bladder. He

deteriorated rapidly and died the following day. Both blood and urine cultures subsequently grew *B. pseudomallei*.

Discussion

Melioidosis is increasingly being recognized as an important cause of life-threatening infections in India.^[2] It is most commonly seen in adults with conditions like diabetes mellitus, renal disease and in those who are immunocompromised.^[1] Of these, diabetes is the most common risk factor^[4] as was seen in our two patients. Clinical manifestations range from localized infection to acute pneumonia and fulminant sepsis.^[5]

In a series from queensland Australia, genitourinary melioidosis occurred in 11% of cases of what?^[4] Manifestations included pyelonephritis, perinephric abscess, epididymo-orchitis, scrotal abscess and most commonly prostatitis or prostatic abscess.^[4] None of the patients in their series had diabetes. Although diabetes is a known risk factor, there are only few reports of genitourinary melioidosis in diabetes. Tan *et al*^[6] reported five cases of melioidotic prostatic abscess with diabetes. Both our patients were diabetic and had prostatic involvement. Melioidosis was not initially considered in the differential diagnosis and this could have led to delay in initiating appropriate therapy in our series.

Ceftazidime alone or a combination of clavulanate and amoxicillin is the treatment of choice. In localized infections doxycycline can be used in combination with co-trimoxazole.^[7] Imepenem and meropenem are safe and effective and can be considered as alternatives to ceftazidime.^[8] Since relapse rates are high, antimicrobials are recommended for 12 to 20 weeks. Despite this, relapse occurs in about 10% of cases^[1] and hence close follow-up is essential.

Both our patients were from West Bengal. In earlier series also, the increased occurrence of melioidosis from this area has been noted.^[3] Therefore, it is necessary to create awareness about the distribution of this illness among clinical practitioners. It is possible that our first patient had a parotid abscess due to *B. pseudomallei*, which was not properly managed in the first hospital he visited. Hematogenous seeding could be the reason for the foci in liver, spleen, adrenals, prostate and the kidney. In the second patient, the infection probably started as a UTI, which subsequently developed into fulminant sepsis triggered by the catheter removal. Cases with *B. pseudomallei* in blood have high mortality. Similarly, it has been shown that the presence of *B. pseudomallei* in urine during a systemic infection is associated with poor prognosis.^[9] Positive blood and urine cultures for *B. pseudomallei* in the second patient explain the rapid deterioration in the clinical course.

Urinary tract infection is common in diabetics and *B. pseudomallei* infection can be overlooked in routine cultures as contaminant. Therefore a high index of suspicion is required to diagnose melioidosis. We suggest that melioidosis should be considered in the differential diagnosis in diabetic men with UTI when there is no response to routine antibiotics, especially if they come from areas where melioidosis is prevalent.

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