

Case Report

A rare case of melioidosis with isolated prostate abscesses which responded to antibiotic therapy.

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Introduction

Melioidosis is an important emerging cause of pyrexia of unknown origin in Sri Lanka [1,2]. Majority of melioidosis cases are reported from northern Australia, Southeast Asia, South Asia, including India, and China. A significant number of cases are found in Sri Lanka as well [2,3]. The responsible organism is *Burkholderia pseudomallei* which is a Gram-negative bacillus with a safety pin appearance in the Gram stain. It is a facultative saprophyte, widely distributed in soil and fresh surface of water in endemic areas [3]. This organism can invade almost all the systems in the body, respiratory (40-60%), cardiovascular (40-60%), genitourinary (14-28%), skin & soft tissue (13-24%), musculoskeletal (14%), central nervous system (1-5%), gastrointestinal system (10-35%) [4]. One of the common presentations is multiple abscess formation in solid organs, especially lungs, liver, spleen, kidney and prostate [2]. The most common associated risk factor is diabetes mellitus; others are hazardous alcohol use, immune suppressive state, chronic kidney disease (CKD), chronic lung disease and thalassemia major in children [2,3,5].

Here we present a rare case of melioidosis with isolated prostate abscesses which completely recovered with medical treatment. Interestingly, he had left sided renal calculi which is known to be a risk factor [6].

Case report

A 49-year-old Sri Lankan farmer from Kurunegala who was diagnosed with type 2 diabetes mellitus 3 years back with poor compliance, presented with intermittent high-grade fever for past 3 months with lower abdominal pain, back pain and dysuria. He also had several episodes of watery diarrhea for the past one-month duration. There had

been nearly six hospital admissions prior to this admission, where he was treated with antibiotics suspecting leptospirosis and acute gastroenteritis. On this admission, he had high grade fever with chills and rigors, dysuria and lower back pain for 4 days. He denied haematuria, hesitancy, dribbling, urinary incontinence, or urinary retention but complained of nocturia with 2-3 times frequency per night. There was significant loss of appetite associated with other constitutional symptoms like evening pyrexia, arthralgia, myalgia and nausea. There was no history of cough, shortness of breath, wheezing or sputum production. He had no history of chronic wounds, skin rashes or oral ulcers.

He had defaulted treatment for his diabetes mellitus for the past 2 and half years because he was asymptomatic. There were no associated micro or macro vascular complications. He had no contact history of tuberculosis. No history of recent travel to any other parts of the country or overseas. He was a farmer involved in growing paddy, vegetable and onions. He was a nonsmoker and nonalcoholic. He was worried about his illness as doctors were unable to find a cause for his illness as yet. He had very good family support from his grown-up son and daughter.

On examination, he was febrile, mildly pale and anicteric. There were no skin rashes, ulcers or lymphadenopathy. His pulse rate was 88 beats/min with blood pressure 110/70mmHg. His systemic examination was rather unremarkable except for bilateral renal angle tenderness more in left side. Digital rectal examination revealed an enlarged, boggy prostate with significant tenderness with no contact bleeding.

Table 1 basic investigation summary

Investigation	Admission	D5	D14	Discharge
CBS	145mg/dl	108	150	88mg/dl
WBC	11.9/mm ³		5.3	
Neutrophils	76%			
Hb	10.3g/dl		11.2	
Platelet	393*10 ³ /mm ³		399	
ESR	101mm/1 st hr		88	52
CRP	72.5mg/dl		52.1	12.1
Creatinine	72.4mmol/l	69.2		69.1
CXR	normal			
UFR	MFF pus cells, RBC-25-30			normal
Urine culture	No growth			
AST	16.5 U/L			
ALT	12 U/L			

His initial USS abdomen and KUB showed normal liver, gallbladder and spleen with left sided mildly oedematous and hypoechoic kidney suggestive of left sided acute kidney injury (AKI).

He was initially managed as bilateral pyelonephritis with IV co-amoxycylav but his fever did not respond. Because of this poor response to treatment, blood culture was sent and came back positive for *Burkholderia pseudomallei*. (Figure 1 and 1.1) Thereafter, he was started on IV meropenem 1g 8hrly straight away.



Figure 1: Mac-Conkey agar plate showing growth of *B pseudomallei*

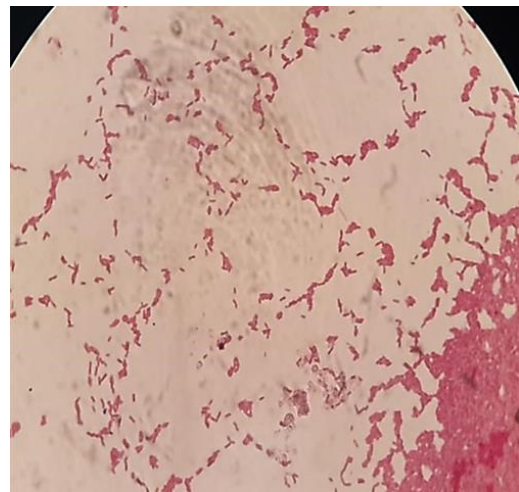


Figure 1.1: Gram stain showing typical safety-pin appearance of *B pseudomallei*

His repeat USS KUB with transrectal USS showed bilateral pyelonephritis with L/S hydro ureter and hydro nephrosis with mid ureteric calculi and prostatomegaly (37g) with multiple prostate abscesses, the largest measuring 1.7 * 1.4 cm. (Figure 2)



Figure 2: Transrectal USS showing multiple prostate abscesses

As the patient was having deep seated abscesses oral co-trimoxazole also started and he responded well. His fever started to settle by day 2 of intravenous meropenem therapy and inflammatory markers normalized by 3rd week of therapy. There was no evidence of any other abscess formation. Repeat USS done two weeks later showed well resolving prostate abscesses without any complications.

Liaising with the genitourinary team, he underwent stenting for the L/S hydroureter and hydronephrosis, with a plan for extra corporeal shock wave lithotripsy.

He was fever free and completely asymptomatic by the 3rd week of antibiotic therapy with normal serum creatinine and urine output throughout. He had good glycemetic control with gliclazide 80mg bd.

He was discharged after 4 weeks of intravenous meropenem and oral co-trimoxazole intensive therapy. He was given oral co-trimoxazole for 6 months duration with two weekly follow up plan. On discharge he was as healthy as previous.

Discussion

We selected this case because isolated prostate abscess with melioidosis is very rare and it resolved solely with antibiotics without any surgical intervention. We couldn't perform CECT abdomen and pelvis even though this is suggested in guidelines [3] due to resource poor setting. But patient's clinical parameters and available investigations didn't point out any other focus of infection and the patient completely recovered with initial intensive therapy. It is very important to identify the disease early and give the correct antibiotic regime in a timely fashion to prevent further complications needing surgical interventions. As this patient had several hospital admissions with similar complaints, partially responding to antibiotic therapy, a high suspicion of an atypical organism was warranted. Luckily, this patient's blood culture became positive for melioidosis. This patient also had several risk factors, such as being a farmer with high exposure to soil and water, diabetes mellitus and having nephrolithiasis as well.

Treatment of melioidosis consists of two phases; intensive therapy with intra venous antibiotic and eradication therapy with oral antibiotics [3]. Time duration of each period defer with the clinical manifestations [6]. For initial intra venous therapy can use either intravenous meropenem or intra venous ceftazidime for at least 14days [3,6]. Patients, who are critically ill, have extensive pulmonary disease, deep seated abscesses, osteomyelitis, septic arthritis or neurological melioidosis need prolonged course of antibiotics (4-8 weeks or longer) [3]. Deep seated abscesses are defined as abscess anywhere other than skin, lung, bone, CNS or vasculature [3]. Intravenous meropenem is preferred in critically ill patients who need ICU care [3,6]. Meropenem is preferred over imipenem due to less neurological side effects⁶³. Patients with non- pulmonary infection like neurological, prostatic, bone, joint, cutaneous and soft tissue melioidosis need oral co-trimoxazole (trimethoprim sulfamethoxazole) together with intra venous therapy for better outcome [3,6]. For long term eradication therapy co-trimoxazole is preferred, but doxycycline can also be used in those who cannot tolerate co-trimoxazole [3,6]. Duration is uncertain but needs to last at least 3-6 months [3].

Other adjunctive therapies used in the intensive phase are abscess drainage, especially for prostate abscesses by CT or portable USS guided and recombinant G-CSF used for patients with neutrophil defects [3,6].

Recommendation

We recommend that physicians need to be vigilant about suspecting melioidosis when a patient presents with urinary symptoms and continuous fever. Early diagnosis methods

and laboratory facilities, prompt antibiotic therapy, timely surgical interventions and preventive methods are the important facets that need to be improved in Sri Lanka.

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