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Melioidosis: An Eye Opener in Recurrent Urinary Tract Infection

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Abstract
A 33 year old weaver was admitted with history of fever and dysuria for past 5 days.. He gave history of recurrent urinary tract infection (UTI) for the past one year. On evaluation he had moderate splenomegaly and multiple visceral abscesses involving right kidney, left adrenal, spleen and prostate. Blood and urine cultures were negative, TRUS guided biopsy grew E.coli and PCR was positive for melioidosis. Patient was treated ceftazidime followed by trimethoprim sulphadoxazole for 3months and oral fosfomycin for E.coli. Patient improved clinically and radiologically with regression of abscesses and no recurrence of UTI till date.

Keywords: *melioidosis, PCR, visceral abscesses.*

Introduction

Melioidosis is a common infection in Southeast Asia and is being increasingly recognized in India. It can mimic as suppurative infections, tuberculosis, fungal infections, malignancy and systemic rheumatic diseases. Presentation may vary from local disease to disseminated abscesses, pneumonia and sepsis. In this case the patient presented initially as acute urinary retention with urinary tract infection and moderate splenomegaly. On evaluation he was found to have multiple visceral abscesses. In view of the above presentation and being a diabetic a high suspicion of melioidosis should be thought of in differential diagnosis of recurrent fever and pyrexia of unknown origin.

Case Report

A 33 year old male, weaver by occupation, known diabetic for past 1 year on insulin came with complaints of difficulty in passing urine for the past one day, fever with chills and rigor for the

past 5 days. He gave no history of headache, vomiting loose stools or decreased urine output. He had history of recurrent UTI for past one year treated with antibiotics and recovered every time. However each episode was followed by recurrence of fever after 1 to 2 weeks. On examination vitals were stable. Systemic examination showed abdomen was soft, with moderate splenomegaly with distended bladder, other systemic examination was unremarkable.

Laboratory investigations showed a total count of 9900 cells/ cu mm and urine routine showed pus cells of 8 to 10. Rest of the routine labs were unremarkable. Patient was initially catheterized to relieve his urinary symptoms and started on intra venous antibiotics. Ultrasound abdomen showed hepatomegaly, splenomegaly 14.5 cm with two tiny collection largest being 1.5 * 1.3 cm, prostatomegaly with heterogeneous parenchyma suggestive of infective features. Prostate specific antigen was 5.5 ng/ml and serum procalcitonin was 0.41 ng/ml. There was no growth on routine culture of urine. Blood culture also did not yield any growth. Hence urologist opinion was sought and patient was started on Amikacin in view of boggy prostate. In view of multiple visceral lesions on USG abdomen, CT abdomen was done which showed multiple scattered well defined non echoic hypo dense lesions in spleen (largest measuring 20 X 30 mm), left adrenal (41 X 31 mm), prostate (4.7 X 5.4 X 4.9 cm), and right kidney(2.3 X1.7 cm) (figure 1)a,b.

2D Echo was performed to rule of infective endocarditis, no vegetation's were found. Mantoux test was negative. In order to ascertain the microbiological nature of illness, TRUS guided biopsy cum aspiration of the prostate (figure 1)c was done and sent for culture, gram stain, AFB, Gene Xpert to rule out tuberculosis and PCR for *Burkholderia pseudomallei* to rule out melioidosis. AFB and Gene Xpert were negative and histopathology showed multiple micro abscess. PCR for *Burkholderia pseudomallei* was done. PCR was performed targeting with 16S-23S spacer region and the product size was 251bp. PCR being positive confirmed the diagnosis of melioidosis (figure 1)d. Prostatic tissue culture was positive for *E.coli*. He was subsequently evaluated in detail by urologist for the retention of urine. Uroflowmetry showed post void residual urine of 126ml and later urethral calibration revealed a block in urethra 15cms from the meatus. Therefore transurethral ascending urethrogram was done which showed short segmental urethral stricture at the peno-bulbar junction and hence patient was taken up for urethrocystostomy. Patient was started on ceftazidime for 2 weeks followed by trimethoprim sulphadoxazole for 6 weeks for melioidosis and oral fosfomycin once in 3 days, a total of 6 doses for *E.coli*.

Patient was followed up periodically in 6 weeks and 3 months. Clinically patient improved with regression of splenomegaly and repeat ultrasound showed regression of the spleen and prostate (figure 1) e.

Figure:

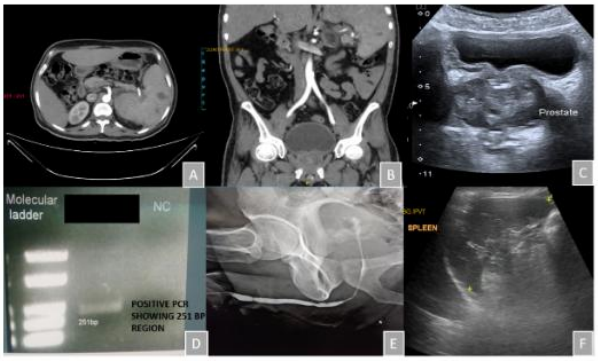

FIGURE-1: a- ct axial section showing multiple spleenic abscess; b- ct coronal section of abdomen showing left adrenal, right kidney and prostatic abscess;c- transrectal ultrasound showing prostatic abscess;d- pcr showing positive for burkholderia pseudomallei;e- transurethral ascending urethrogram showing stricture in penobulbar junction;e- ultrasound abdomen done after 2 weeks showing reduction in the size of the spleen.

Discussion

Melioidosis is caused by *B. pseudomallei* a gram-negative bacilli. Familiarity with different presentations of this infection is essential for early diagnosis as delayed diagnosis can lead to increased mortality and morbidity. Cases have been reported from all regions in India, suggesting that it is becoming an endemic disease but details on epidemiology in India are lacking[(1)]. In our

case the patient presented only with acute urinary retention mimicking prostatic abscess. But the presence of splenomegaly and USG showing multiple visceral abscesses made us to evaluate further.

Risk factors for melioidosis are diabetes mellitus, chronic renal failure, alcohol abuse, thalassemia, chronic lung or liver disease, malignancy and immunosuppression. Diabetes mellitus is found in up to 60.9% of affected patients[(2)]. In our case uncontrolled diabetes could have been the important risk factor in this patient. Melioidosis is classified into subclinical, acute and chronic disease. In acute cases symptoms are present for less than 2 months. The spectrum of clinical presentations ranges from to asymptomatic or minor localized abscess or nodule to severe, fulminant disease (such as shock, multi organ abscesses and death). Exposure to bacilli commonly results in subclinical disease. Clinical disease presents most commonly in acute form and only 9% presents as chronic illness[(3)]. Acute disease can present as pneumonia and go unnoticed. But chronic disease can present as disseminated disease with multiple abscesses like tuberculosis mimicking it very closely like our case.

An important aspect of this disease is the timely diagnosis as it has high mortality. Blood culture can detect the organism but there is high chances that it can be negative especially when patients are exposed to antibiotics.

Treatment has two phases, the intravenous intensive phase, followed by eradication phase. In local or mild disease, intensive phase is of 2–4 weeks with Ceftazidime 2g thrice daily or Imepenam 500mg 6th hourly followed by 3 months of maintenance therapy. In severe infection including neurological disease, initial intensive therapy is prolonged for 6–8 weeks. It is followed by an eradication phase with oral cotrimoxazole for the next 6 months.[(4)]

In disseminated disease the usual presentation is multiple abscesses in various organs like lungs, liver and kidneys. Melioidosis presenting as prostatic abscess has been reported in 7 out of 54 cases in a study conducted in Malaysia.[(5)] Melioidosis presenting as isolated adrenal abscess has been reported in literature[(6)]. Case reports of melioidosis presenting as acute urinary retention has been published in the literature but in both cases the patient did not survive. Even though our patient had a stricture urethra which could be responsible for recurrent urinary tract infections, the presence of moderate splenomegaly (splenic abscess) and multiple visceral abscess made us to look beyond; and the diagnosis of melioidosis was made. Patient improved clinically and regression of abscess with treatment made the treatment complete.

Conclusion

In a tropical country like India chronic diseases like Tuberculosis and Brucellosis are being always evaluated but melioidosis should also be suspected and evaluated in a case of recurrent fever, FUO and in the setting of diabetes.

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