Renal abscess in a 3-year-old boy with Brucellosis

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Sri Lanka Journal of Child Health, 2022; **51**(2): 308-309
DOI: http://dx.doi.org/10.4038/sljch.v51i2.10147
(Key words: Brucellosis, Renal abscess, Fever, Livestock, Zoonotic disease, Child)

Introduction

In recent years, the incidence of human brucellosis has increased globally[1]. It is mostly reported amongst farmers as an occupational disease or amongst individuals handling animal products or consuming unpasteurized dairy products. Brucellosis has a variable presentation and can affect any organ but renal involvement is rare[2]. Here we report a case of brucellosis in a young boy presenting with a renal abscess who recovered completely with medical management with no relapse up to 3 months of follow up.

Case report

A 3 year old boy presented with intermittent fever for 15 days, along with abdominal pain for 5 days mainly on the right side of the abdomen. His appetite was reduced significantly. There was no history of loose stools or vomiting. A history of handling livestock on a daily basis was present.

On admission, he was ill looking, irritable and his temperature was 39^0C, heart rate was 90/min with tenderness and guarding in right lumbar area. There was no organomegaly or signs of free fluid. There was no renal angle tenderness. Examination of other systems was normal.

Blood investigations done on the 5th day of illness included a haemoglobin (Hb) level of 7.7 mg/dl (probably nutritional anaemia) and a total leucocyte count (TLC) of 22,000/ cu mm with 70% neutrophils. Three readings of C-reactive protein (CRP) were all elevated (94.2 mg/L). On admission the blood investigations were repeated which showed a Hb level of 8.7 mg/dl, a TLC of 18,700/ cu mm and a CRP of 10 mg/L. As the child had repeated fever spikes, urine full report was also sent on day 15 of illness which showed the presence of 1-2 epithelial cells/high power field. Urine culture was also sent and showed no growth of organisms. Two consecutive blood cultures were sent on day 10 and day 15 of the illness with no growth of any organisms. Extended Widal test and antibody testing for Salmonella, Brucella and Rickettsia were sent as a part of Pyrexia of Unknown Origin screen

Ultrasonography was done which revealed a hetero-echoic area in the inter-polar region of the right kidney with extra renal extension, measuring 4.2 x 4.1 x 3.8 cm suggestive of infective aetiology probably a renal abscess. A contrast enhanced computed tomography scan was done which was suggestive of renal involvement in form of renal abscess formation (Figure 1). Brucellosis was diagnosed as brucella antibody titres using the Brucella agglutination test showed serological evidence of brucella.

Figure 1: ***Contrast enhanced CT scan showing renal abscess***

As advised by sonologist abscess was not drainable; even pig tail placement was tried but failed. Treatment with intravenous antibiotics, inj. piperacillin tazobactam and inj. amikacin was continued for 10 days. Child was started on tab

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(Received on 13 May 2021: Accepted after revision on 18 June 2021)
The authors declare that there are no conflicts of interest
Personal funding was used for the project.

doxycycline and tab rifampicin on 20th day of illness when brucella antibody came positive and fever spikes persisted. It was continued for 6 weeks. Compliance of the child was good and he was followed up closely for 3 months due to the possibility of relapse. On follow up visits after 4 weeks, blood cultures were sent along with Brucella antibody titres, none of which were suggestive of infection. Serial sonography revealed reducing size of the abscess which eventually resolved completely after 1 month with medical management.

Discussion

The most common cause of brucellosis in humans is *Brucella melitensis*, an intracellular Gram-negative bacterium[2]. As brucellosis requires prolonged treatment, relapses are common especially if the therapy is discontinued prematurely[3]. Brucellosis rarely affects the kidneys. Renal manifestations included pyelonephritis, glomerulonephritis or IgA nephropathy, renal abscess being extremely uncommon[4].In case of renal abscess formation surgical exploration is usually required. However, in our case as the treatment was started on time the patient could be managed and the abscess resolved completely on medical management.

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