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Case Report:

Solitary Splenic Abscess in a Female Child caused by *Salmonella typhi*

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Abstract:

Splenic abscess due to *Salmonella typhi* is a rare complication. Here we present a case of splenic abscess in a 9-year old child. The case was diagnosed by USG abdomen and microbiological examination. It is fatal if left untreated.

Keywords: Splenic abscess, Salmonella typhi, child

Introduction

Splenic abscess is a rare complication of enteric fever. The clinical diagnosis of splenic abscess due to enteric fever is difficult, because of its rarity, insidious onset and nonspecific clinical presentation.[1,2] It is often fatal if left untreated. Here we present a case of solitary splenic abscess caused by *Salmonella typhi* in a female child.

Case report

A 9-year old female child presented with a 2 days history of fever, nausea and abdominal pain. Since last one year she had intermittent course of similar episodes.On physical examination, she was malnourished (Grade I) and febrile. There was no pallor and no edema. The abdominal examination revealed generalized tenderness. There was no abnormality detected in other systems. Laboratory tests demonstrated Hb-11.4 gm%, WBC-22,200 / cu mm, platelets 2,44,000 lacs/cu mm, serum Na 118mq/l, serum K 4.5 mq/l, serum Cl 85 mq/l and serum BUN 18.3 mg%.

USG abdomen showed mild splenomegaly with hypoechoic lesion in the mid and upper poles of spleen with irregular shaggy walls, minimal left pleural effusion and mild ascites.USG guided percutaneous splenic abscess aspiration was done and 450 ml fluid was aspirated and sent for microbiological examination. Abscess was thick and very large. Pigtailing of the residual abscess was done.

Microscopic examination of splenic aspirate revealed 60% lymphocytes and 40% polymorphic cells. Gram stain showed plenty pus cells, but no organisms were seen. Specimen was plated on blood agar and MacConkey agar and incubated at 37°C overnight. On MacConkey agar pure growth of non-lactose fermenting (NLF) colonies was seen, which was identified by standard biochemical tests as *Salmonella typhi*. The later was confirmed by agglutination with Salmonella polyvalent antisera (Group A-G) and Salmonella factor 9 antisera.

Patient was started on ceftriaxone, amikacin and metronidazole for seven days. The child improved subsequently. Pigtail tube was removed and the child was sent home after ten days of admission.

Discussion

Splenic abscess as a complication of enteric fever is a distinct rarity. The more common causes of splenic abscess are *Staphylococcus species* and *Bacteroides species*[3]. In our patient, the clinical presentation was nonspecific abdominal pain and fever. Low incidence of splenic abscess is due to the phagocytic activity of the reticuloendothelial system and leucocytes[2]. Allal et al reported 400 patients with *Salmonella typhi*, of which 8(2%) were from splenic abscesses. Of these 8 abscesses, 7 were solitary abscesses and one was multiple abscess.[2] Though multiple splenic abscess due to *S.typhi* has been reported in the literature, solitary abscess due to *S.typhi* is commonest[2,4]. Torres et al also documented 10 cases of *S.typhi* with large solitary splenic abscesses[5]. Splenic abscesses due to *Salmonella typhi* has been reported from India in adults[6,7], but to the best of our knowledge only one case of multiple splenic abscess due to *S.typhi* has been reported in a child. This is probably the first case of solitary splenic abscess in a child due to *S.typhi*.

Predisposing factors for splenic abscess are usually impaired host resistance, subacute bacterial endocarditis, trauma, diabetes mellitus, urinary tract infections, skin sepsis, respiratory tract infections and intravenous drug abuse[2]. Sickle cell disease is also present in about one third of patients with splenic abscesses[8]. In this case, predisposing factor was identified, but the child was PEM Grade I.

In splenic abscess, CT evaluation is more specific than ultrasonography in delineating gas bubbles, which is diagnostic of splenic abscess, in visualizing the peripheral contrast enhancement and in providing clear demonstration of the location of the abscesses. MRI may reveal some clues in the diagnosis by defining extent and internal structure of splenic abscess because of its greater tissue resolution[9]. In this case, the diagnosis was well established only by USG abdomen.

Previously, the treatment of splenic abscess was splenectomy with antibiotic therapy, but the recent trends are more conservative because of immunological role of the spleen better understood over the past few years. Multiple loculated abscesses may respond to antibiotics alone. Percutaneous drainage can be done as an alternative treatment for splenic abscess[4], but splenectomy is the preferred treatment[1]. In our case, percutaneous drainage was done and pigtailing of the residual abscess was done.

In conclusion, splenic abscess due to *Salmonella typhi* is a very rare complication of enteric fever. If patient presents with localizing clinical features i.e. left hypochondriac pain and fever, then high index of suspicion of splenic abscess should be done and USG guided splenic aspirate should be sent for microbiological investigations for early diagnosis and prompt patient management.

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