MULTIPLE SPLENIC ABSCESSES, A RARE COMPLICATION OF ENTERIC FEVER: CASE REPORT AND LITERATURE REVIEW

ABSTRACT

Background

Splenic abscesses caused by Salmonella typhi are a rare and often overlooked complication of enteric fever. Typically, these abscesses are solitary, but in some cases, multiple abscesses may form. Here we report the case of a child with enteric fever, who presented with multiple splenic abscesses.

Case Presentation

An eight-year-old girl presented with complaints of high-grade fever, abdominal pain, and distension associated with nausea and vomiting. General physical examination showed high grade fever of 103*F, and had left upper quadrant tenderness on systemic examination. Imaging studies were suggestive of multiple splenic abscesses, which were treated with aspiration and antibiotics. This case stresses the rare cause of splenic abscess in children with no prior risk factors, and the significance of prompt diagnosis and suitable management strategies for such rare but serious complications.

Conclusion

Splenic abscesses are a rare but serious complication of enteric fever, especially in children. It may be treated with antibiotics with or without percutaneous aspiration as a first line of treatment, but splenectomy should be considered in cases not responding to medical management.

INTRODUCTION

Splenic abscess is an uncommon condition that occurs in patients with risk factors such as pyogenic infection, splenic trauma, haemoglobinopathies (e.g., Sickle cell disease), immunocompromised states, Diabetes, and contiguous disease processes extending to the spleen. Splenic abscesses caused by Salmonella typhi area rare and unrecognized complication due to their non-specific presentation (1). For diagnosis,abdominal ultrasound is the first investigation to determine the lesion, as it is readily available, even in resource-limited areas, whereas a contrast-enhanced CT scan is needed to evaluate the extent of abscesses and delineate very small abscesses (5,6). In children, a conservative approach consisting of antibiotics and percutaneous drainage should bepreferred to preserve the spleen. If these measures fail, splenectomy should be performed.

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CASE PRESENTATION

An eight-year-old girl was brought to the hospital withcomplaints of high-grade fever for three weeks, abdominal pain for ten days, abdominal distension for one week, vomiting, and diarrhea for one week. The patient had generalized malaise and anorexia. Other systemic inquiry was unremarkable. She presented after taking multiple injectable antibiotics for the last two weeks.

CLINICAL EXAMINATION

On examination, The patient was pale and febrile with fever of 103*F, Heart rate of 100Beats/min. The patient was not icteric, there was no lymphadenopathy, rash, or bony tenderness.She had generalized abdominal pain, with mild tenderness, more marked in the left hypochondrium, with no visceromegaly.On chest examination, she had decreased breath sounds on the left lower chest.

INVESTIGATIONS

Investigations revealed haemoglobin of 8.5 g/dl, total leukocyte count (TLC) of 4100 (neutrophils 77%, lymphocyte 18%, monocytes 2%, eosinophils 3%) and platelet count of 82000/UL. Renal function tests revealed serum urea of 20 mg/dL and creatinine of 0.7 mg/dl. Routine urinalysis, coagulation profile, and Liver function tests (LFTs) were normal. Peripheral smear examinations for malaria parasite and Dengue were negative. Her Typhidot test was positive for both IgG and IgM antibodies. C-reactive protein (CRP) was 9.4 mg/L. The final Blood culture was negative. The echocardiography performed was normal. No evidence of Rheumatic heart disease was seen.

RADIOLOGY

Plain X-ray abdomen was normal. Ultrasonography of the abdomen from a peripheral hospital showed mild hepatosplenomegaly, a small amount of free fluid, and dilated bowel loops. Thus her CT scan abdomen with IV contrast was done, that showed multiple non-enhancing hypodense lesions in splenic parenchyma, largest one measuring 3.2x2.4cm, suggestive of splenic abscesses, ultrasound guided aspiration was done there were 7 abscesses in spleen, of which 5 abscesses were completely drained only 10 ml could be aspirated, 2 small abscesses could not be aspirated, because one was un reachable and other was near pleura, as shown in fig a&b

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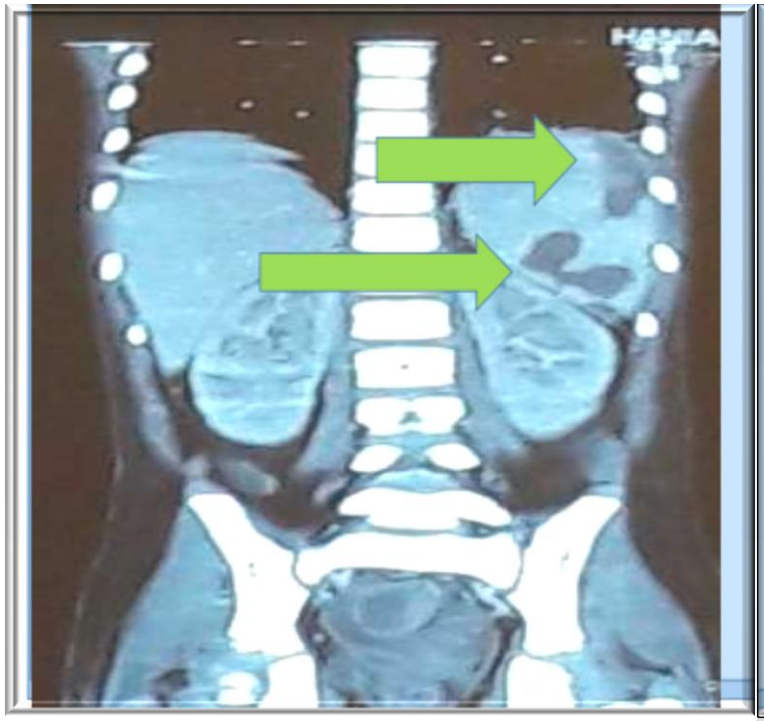

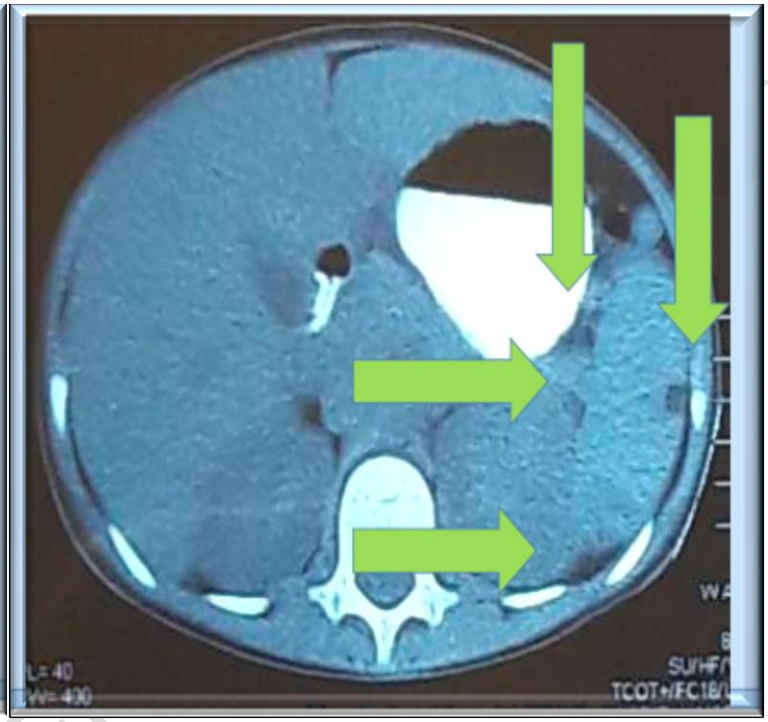

Fig:a Fig:b

Aspirated pus was sent for Culture and sensitivity, which proved Salmonella typhi MDR, only sensitive to Meropenem and azithromycin. The Infectious Diseases team was taken onboard, and the patient was initiallykept on IV Meropenem for 14 days;the fever resolved. The child started showing improvement in general well-being and appetite towards the end of the first week of hospital stay. The patient was discharged on oral azithromycin for 21 days, and on follow-up, had no active complaints.Repeat Ultrasound on follow-up showed only a residual abscess cavity. The child remained well and followed up for 8 months.

DISCUSSION

Splenic abscess is an uncommon clinical condition, with autopsy studies estimating its prevalence between 0.14% and 0.7%. Early recognition and timely management are important because delayed treatment is associated with high morbidity and mortality, with untreated cases historically reaching mortality rates of up to 70% (1). Splenic abscesses typically arise in individuals with underlying immunocompromised

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states, such as those with diabetes, HIV/AIDS, haemoglobinopathies, or malignancy, as well as through haematogenous dissemination from infective endocarditis or intravenous drug use, direct extension from nearby infected structures, or following splenic injury or infarction (1).

Over recent years, in adult studies, the incidence has appeared to rise, partly due to the growing population of immunocompromised patients and increased utilisation of diagnostic imaging such as CT and ultrasonography, which improve detection. In one institutional study, Streptococcus viridans was the most frequently isolated organism (27.8%), followed by Klebsiella pneumoniae (22.2%) (1).

Splenic abscesses secondary to Salmonella infection in children are rare and represent a distinct clinical challenge. Common predisposing factors, such as pyogenic infections, traumatic splenic injury, sickle-cell disease, diabetes, and other immunosuppressive conditions, were absent in our case. Liu et al. highlighted that a triad of fever, leukocytosis, and left upper quadrant tenderness strongly suggests a splenic abscess, with abdominal pain as the most frequent presenting symptom in two-thirds of patients. The median interval between symptom onset and diagnosis in their study was 22 days (2,3).

Percutaneous catheter drainage (PCD) has demonstrated success rates between 67% and 100% in suitable cases (4). However, diagnosis can be challenging because splenic abscesses from enteric fever may present insidiously with non-specific symptoms, and their rarity may delay clinical suspicion. In this case, the abscess likely formed through bacteraemic seeding during Salmonella typhi infection. Other known causes of splenic abscess were not present in our case. The blood culture in our patient was negative, which may be attributed to the prior initiation of intravenous antibiotics before sampling.

The classic triad of fever, left upper quadrant pain, and a detectable tender mass is observed in roughly one-third of patients. Ultrasonography and CT scan remain the preferred diagnostic modalities, with CT yielding detailed information on the size, number, and location of abscess cavities, as well as detecting related abnormalities such as liver abscesses or pleural effusions, which can affect treatment decisions (5,6).

The management aim is to preserve the splenic function whenever feasible. Conservative treatment is usually effective for small (<3–4 cm), unilocular, and clinically quiescent lesions (4,7).Larger abscesses (>4 cm) are generally better managed with percutaneous aspiration or catheter drainage. If the abscess is unresponsive to drainage or splenectomy, depending on the patient's condition and response to initial therapy (4,8). Failure of percutaneous drainage warrants surgical intervention. If untreated, a splenic abscess may rupture into the peritoneal cavity, pleural space, or gastrointestinal tract, causing severe complications (9). A systematic, stepwise approach, incorporating imaging, appropriate antimicrobial therapy, minimally invasive drainage, and surgery when required, provides the best outcomes (1,9).

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CONCLUSION

Splenic abscess is an uncommon but potentially severe complication of enteric fever. Treatment with appropriate antibiotics, with or without percutaneous aspiration, often preserves the splenic function. However, splenectomy remains an important option for patients who do not respond adequately to conservative or minimally invasive therapy.

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