

*Case report*

## Splenic abscess in typhoid fever – Surgical management

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### Abstract

Splenic abscess is an uncommon clinical presentation in surgical practice, associated with high morbidity and mortality. Mortality may be 100 % if left untreated. Splenic abscess is also rarely encountered as a complication of typhoid fever. We present here a case of multiple splenic abscesses with neuropsychiatric complications due to typhoid fever, which was managed successfully with splenectomy and other supportive therapies. Another case of single splenic abscess due to enteric fever was treated successfully with CT-guided aspiration and appropriate antibiotics. Being a rare entity in clinical practice, splenic abscess has been poorly studied. Haematogenous seeding of the spleen due to typhoid is a common cause of splenic abscess in the tropical countries. In multiple or multiloculated abscesses aspiration usually does not succeed, which happened in our case. Splenectomy remains the definitive choice of treatment. However, Ultra sonography (USG) or CT-guided aspiration may be tried in selective cases.

**Keywords:** Splenic abscess; Typhoid fever; Surgical management

### INTRODUCTION

Splenic abscess is an uncommon clinical presentation in surgical practice, associated with high morbidity and mortality. Mortality may be 100 % if left untreated<sup>[1]</sup>. Splenic abscess is also rarely encountered as a complication of typhoid fever<sup>[2]</sup>. We present here a case of multiple splenic abscesses with neuropsychiatric complications due to typhoid fever, which was managed successfully with splenectomy and other supportive therapies.

### CASE REPORT 1

A 21 year old male patient presented with fever with rigor and chills of 10 days duration. There was no history of pain abdomen or any other relevant histo-

ry. On examination, his general condition was fair. He was mild anaemic and febrile (100 °F). His pulse and blood pressure were recorded to be normal. Per abdomen examination revealed no hepatosplenomegaly. Other systemic examinations revealed no abnormality. Initial investigations revealed: Hb% - 11.7 gm/dL, TLC - 6 900 /cmm, DLC - P<sub>48</sub>, L<sub>48</sub>, E<sub>3</sub>, M<sub>1</sub>, platelet count; 165 000 /cmm and urinalysis; normal study. Peripheral smear did not show malaria parasites but showed toxic granules. Blood culture did not reveal any growth. Serum electrolytes and biochemical parameters were within normal limit. Widal test revealed S. typhi O titre of 1: 80. He was treated empirically with chloroquine, ceftriaxone and amikacyn. However, he did not respond to the treatment. Subsequently, he developed pain over left lower chest. Clinical examination revealed pleural rub over left lower zone and also hepatomegaly. USG of the abdomen revealed splenic abscess. He was continued to be treated with same antibiotics. As he did not show any improvement to conservative treatment contrast enhanced CT

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scan of abdomen was done, which confirmed multiple splenic abscesses. Ultra sound guided aspiration of the splenic abscess was done on the same day and 400 mL of pus was drained. However, his condition deteriorated. He developed abnormal behaviour and hypotension. Surgical consultation was sought. On evaluation, he was found to be delirious and febrile (100 °F). He was anaemic and dehydrated. He had tachycardia, tachypnoea and hypotension. Abdominal examination revealed, pronounced guarding and tenderness over left upper quadrant of the abdomen with free fluid inside peritoneal cavity. A diagnosis of multiple splenic abscesses with delirium as a consequence of typhoid fever was entertained. He was resuscitated and was taken up for exploratory laparotomy on the same evening. Exploratory laparotomy revealed splenic abscess with a spleen densely adherent to the diaphragm. Splenectomy was done. Cut surface of the spleen revealed multiple splenic abscesses. Abdomen was closed leaving a tube drain in the splenic bed. Post operatively he was kept on Inj ceftriaxone 2 gram iv bid for one week along with other supportive measures. Pus culture confirmed *Salmonella typhi*.

Postoperative period was uneventful. However, he continued to have abnormal behaviour, for which psychiatric consultation was asked. Psychiatric evaluation confirmed the diagnosis of delirium secondary to typhoid fever. He was kept on Tab Risperidone 2 mg daily. On 7th postoperative day, Inj ceftriaxone was stopped, but he was kept on Tab Ciprofloxacin 500 mg twice daily for another 7 days. Gradually, he improved from his psychiatric manifestations and was discharged on 16 Jun 2003. However, he was still kept on Risperidone. He was found to be fully asymptomatic on review after six weeks.

## CASE REPORT 2

19 years old male patient was admitted with history of high grade intermittent fever associated with rigor and chills and dry cough for 5 days duration. General examination revealed anemia. Systemic examination was clinically normal. He was treated with chloroquine and was investigated for fever. Blood haemogram revealed Hg - 10.7 gm % Blood culture was positive for *Salmonella Para typhi A*. Widal test- TO <1: 80, AO <1: 20 & BO <120. He was treated

with Inj Ciprofloxacin 200mg iv, however his fever persisted. After 5 days, he was put on Inj Ceftriaxone 2 gm iv bid and ciprofloxacin was stopped. A CECT Abdomen was done, which revealed splenic abscess (6 cm × 5 cm). CT-guided aspiration was done performed. Antibiotics (Ceftriaxone and Amikacyn) were continued as per culture. He responded well and became afebrile. Repeat USG of the abdomen after a week showed resolving splenic abscess. He was discharged. He was asymptomatic after one month of follow up.

## DISCUSSION

Being a rare entity in clinical practice, splenic abscess has been poorly studied. Autopsy studies have shown an incidence of splenic abscess between 0.2 % to 0.7 %<sup>[3,4]</sup>. Danish National Patient Registry shows an incidence of 0.0049 % per year of hospital deaths<sup>[5]</sup>. The rare occurrence of the disease is well visualized from the absence of a single case in a large series of 540 cases of intraabdominal sepsis<sup>[6]</sup>. Male to female ratio is 2: 1<sup>[7,8]</sup>. Splenic abscess usually occurs by five different mechanisms, viz: (a) Metastatic infection from elsewhere in the body. (b) Contiguous infection by direct spread. (c) Secondary infection of splenic infarction. (d) Trauma to the spleen. (e) Immunodeficiency. Metastatic infection is the most common cause and immunodeficiency is a major factor in the course of splenic abscess, where fungal or any unusual micro-organisms are involved<sup>[9]</sup>. Haematogenous seeding of the spleen due to typhoid is a common cause of splenic abscess in the tropical countries as found in our case. A threefold increased incidence of splenic abscess has been reported among the patients dying with typhoid fever<sup>[10]</sup>.

The clinical diagnosis of splenic abscess is difficult. Fever, left upper quadrant abdominal pain, splenomegaly and left pleural effusion are the usual clinical presentations. USG and CT scan of abdomen are important investigative tools for splenic abscess. CT scan has a sensitivity of 96 % as compared to USG with 75 % to 90 % sensitivity. When used together, they are much helpful in diagnosis as well as therapeutic aspiration of the abscess. USG or CT-guided aspiration of the abscess cavity has a success rate of 75 %. However, aspiration is more useful in

unilocular abscess<sup>[11]</sup>. In multiple or multiloculated abscesses aspiration usually does not succeed, which happened in our case. Splenectomy remains the definitive choice of treatment. However, Ultra sound guided or CT-guided aspiration may be tried in selective cases. Salvage splenectomy in failed aspiration cases, should be undertaken early which was performed in our case. This does not increase the mortality or morbidity. In addition to surgical procedures, adequate antibiotic therapy as per culture of the organism should be implemented vigorously. We recommend injection Ceftriaxone 2 mg iv bid for a period of 7 to 10 days followed by a course of ciprofloxacin orally in case of splenic abscess due to salmonella infection.

Neuropsychiatric complications are common in typhoid fever, and occur in 8 % -19.1 % of patients. Delirium accounts for almost three quarters of these affected cases<sup>[12,13]</sup>. The persistence of an amnesic syndrome after resolution of all other features of the disease has not been previously highlighted in the literature. This may represent the continuum of a resolving cognitive dysfunction. Adolescents and young adults are predisposed to developing psychiatric complications<sup>[12]</sup>. The typhoid infection, bacterial endotoxins, nutritional status, and susceptible personality may also be important aetiological factors in the development of neuropsychiatric complications<sup>[13,14]</sup>.

In conclusion, we recommend that in a clinical suspicion of splenic abscess in typhoid fever, Ultra sound of the abdomen should be done followed by CT scan. Solitary abscess should be tried with aspiration and antibiotic therapy. Multiple or multiloculated abscesses should be dealt with splenectomy. Salvage splenectomy should be carried out at the earliest after a failed therapeutic aspiration to avoid high mor-

talidity and morbidity of splenic abscess.

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