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## Case Report

# Case report on splenic abscess with pleural effusion caused by enteric fever

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### ABSTRACT

Splenic abscess is an infrequent complication of enteric fever caused by *Salmonella typhi*. The incidence rate ranges from 0.14-2%. Clinical manifestations are often nonspecific and may be presented as fever with left upper quadrant abdominal pain and a palpable tender mass. Diagnosis is often difficult and splenic abscess management is based on surgical interventions and antibiotic therapy. In this case report we would like to highlight splenic abscess with left reactive pleural effusion as a rare complication of *Salmonella typhi* infection.

**Keywords:** Splenic abscess, Pleural effusion, Enteric fever

### INTRODUCTION

Enteric fever continues to be an important public health problem.<sup>1</sup> Splenic abscess is a rare complication of *Salmonella* infection.<sup>2</sup> The incidence rate accounts for less than 2% of cases in the post antibiotic era.<sup>3</sup> High index of suspicion, timely diagnosis and appropriate management helps to reduce the morbidity and mortality associated with splenic abscess caused by *Salmonella* infection.

### CASE REPORT

A 25-year-old male patient presented to the ER with complaints of abdominal discomfort, over left side (hypochondriac region) which had spontaneously resolved, when he was in Hyderabad. He later developed high grade fever with chills. It was more at night. He also had several episodes of vomiting associated with nausea and decreased appetite. He was admitted under general medicine department. Initial blood investigations showed a CRP of 169.3 and total leukocyte count as 12,210. An outside ultrasound abdomen showed an irregular hypochoic lesion in the spleen, likely complex splenic

cyst. Blood and urine culture and sensitivity was done which showed no growth. Patient had recurrent spikes of fever and his ultrasound abdomen was suggestive of splenic abscess as depicted in Table 1. Hence, he was administered Inj. Piperacillin 3.75 gm thrice daily intravenously. 2D ECHO was also done, which was within normal limits. Dengue NS1 antigen and IgM antibody were negative, malarial parasite smear and MP card test was negative, *Salmonella typhi* H was positive (160), Scrub typhus IgM and Weil Felix test was negative. Leptospira IgM antibody was found to be positive (17.68), hence he was started on Cap. Doxycycline 100 mg twice daily. Stool cultures showed growth of *Salmonella typhi* and the patient was started on Tab. Azithromycin 500 mg once daily, and Cap. Doxycycline was stopped. Patient occasionally experienced left sided chest pain and left hypochondrial pain, which was relieved on analgesics. Computed Tomography Pulmonary Angiogram was done and it showed left sided pleural effusion but no evidence of pulmonary embolus. Ultrasound Sonography abdomen was repeated and the splenic abscess was found to be decreasing in size, and revealed left sided reactive pleural effusion with underlying collapse. His total counts, CRP and liver enzymes normalized after initiating treatment.

On completion of 14 days of antibiotics, patient was symptomatically better and he was discharged from the hospital.

**Table 1: USG abdomen and pelvis suggestive of splenic abscess.**

Scan	Findings	Impression
USG-abdomen and pelvis	Spleen: Spleen is normal in size (11.2 cm) and echotexture. Inferior pole shows an irregular anechoic cystic lesion measuring 3.2×2.6 cm with few intraluminal contents. Superior pole shows a similar hypoechoic lesion of size 1.6×1.7 cm. On doppler no colour uptake seen within the lesion.	Splenic lesions suggestive of splenic abscess.

## DISCUSSION

Acute typhoid fever caused by *Salmonella typhi*, continues to be an important health issue all over the world, particularly in developing countries like India.<sup>1</sup> Splenic abscess is a rare complication of enteric fever. *Streptococcus*, *Staphylococcus*, aerobic and anaerobic intestinal flora and also certain fungi are involved in the aetiology of splenic abscess.<sup>2</sup> Splenic abscess is a rare clinical entity of *Salmonella* infection. The incidence rate accounts to about 2% in the post antibiotic era.<sup>3</sup> Non typhoidal splenic abscess are more common. In this case the etiologic agent is *Salmonella typhi*. Our patient was interestingly leptospira IgM positive as well, although the titers were not strongly positive. The major sites of extraintestinal *Salmonella* abdominal infections include the hepatobiliary system and the spleen. Spleen is considered as a reticuloendothelial organ. The phagocytic activity of the reticuloendothelial system and leukocytes contributes to the low incidence of splenic abscess.<sup>3</sup> Systemic bacteremia, super infection of the spleen, immunosuppressive state and contagious spread are involved in the pathogenesis of splenic abscess caused by *Salmonella typhi*.<sup>4</sup> It usually prevails with liver abscess and the confined case of splenic abscess is a rare entity. The mortality rate associated with splenic abscess can be reduced with timely diagnosis and appropriate therapy. Diagnosis is often difficult because of the rare, non-specific clinical picture and vague manifestations, which may even result in delayed diagnosis.<sup>5</sup> Mostly manifested as fever with left upper quadrant abdominal pain and a palpable tender mass.<sup>2</sup> Diagnosis is based on detailed medical history, clinical examination, radiological and microbiological evaluation. Culture and sensitivity analysis helps in the selection of specific antimicrobial agents for the treatment. Focal sonolucent defects with abundant echogenicity due to debris or septations are visible in USG while homogeneous low-density areas with

occasional rim enhancement can be seen with CT.<sup>6</sup> CECT is the modality of choice to identify splenic abscess. It can identify fluid dense lesions with peripheral contrast enhancement or gas bubbles. Management of splenic abscess is based on surgical interventions and antibiotic therapy. Percutaneous drainage along with antibiotic therapy is the treatment option for solitary unilocular abscess. Splenectomy is chosen if either the former fails or the splenic abscess is multiple.<sup>3</sup> Good prognosis was noted among patients with splenic abscess receiving antimicrobial therapy.<sup>7</sup> This patient was also treated with specific antibiotics and became symptomatically better and stable. Here the patient had left reactive pleural effusion which may occur due to fluid imbibition and usually subside along with the recovery of abscess without necessitating further management.<sup>8</sup> Splenic abscess caused by *Salmonella* infection is a fatal condition, if left untreated it may rupture and mortality can occur in about one third of the patients. The newer presentation of older or already established pathological conditions are of vital importance for diagnosis. High index of clinical suspicion is required for the timely diagnosis and management of splenic abscess, thereby reducing morbidity and mortality.

## CONCLUSION

Splenic abscess caused by *Salmonella* infection is an unusual extra intestinal complication and the incidence rate is low considering spleen as a reticuloendothelial organ with phagocytic activity. Diagnosis is often difficult and treatment modalities include surgical interventions and use of specific antimicrobial agents. High degree of suspicion is necessary for early diagnosis and better prognosis. Clinicians should be aware of the newer presentations of the old diseases, thereby helping to reduce the morbidity and mortality associated with splenic abscess caused by *Salmonella* infection.

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