

*Case Report***Ruptured Solitary Splenic Abscess due to E. Coli - A Rare Case Report**

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Received: 20/02/2014

Revised: 19/03/2014

Accepted: 27/03/2014

**ABSTRACT**

Abscess of spleen is a rare condition and much rarer is ruptured splenic abscess. Till 2009, in international literature only 70 cases of ruptured splenic abscess have been reported. We report a case of 50 year old man who was referred to our hospital with the complaints of pain in the abdomen, vomiting and intermittent fever of 8 days duration. There was no history of trauma to the abdomen. Patient gave history of recent urinary tract infection, renal calculi and left hydronephrosis. Ultrasonographic study done just prior to the admission revealed enlarged spleen with splenomegaly. Pus drained during surgery revealed E. coli. Spleen weighed 300 gms and grossly showed a ruptured abscess measuring 4 cms in diameter which was confirmed microscopically. Urine sample on culture showed isolates of E. coli. Clinical importance of this condition lies in its high mortality. We report this case for its rarity and clinical importance of early diagnosis and management.

**Key Words:** Ruptured Solitary Splenic Abscess, E. Coli, Spleen, Abscess.

**INTRODUCTION**

Splenic abscess is a rare entity with only about 600 cases reported in the international literature. [1] and much rarer is ruptured splenic abscess with only 70 cases reported till 2009. [2] Predisposing factors associated with splenic abscess include synchronous presence of conditions that compromise the immune system such as endocarditis, diabetes mellitus, immunodeficiency (congenital or acquired) and intake of drugs(as a part of treatment). [3,4] Trauma and intravenous drug abuse are additional risk factors for splenic abscess. [5] Most common organisms isolated from splenic abscess include Staphylococcus and

Streptococcus. We report this rare case of ruptured splenic abscess caused by E. coli in a patient with a history of recent urinary tract infection with renal calculus and left hydronephrosis.

**CASE REPORT**

A 50 year old male was referred to our hospital with 8 day history of pain in abdomen, vomiting and intermittent fever. Past history of recent urinary tract infection with renal calculi and left hydronephrosis was given by the patient. There was no history of trauma to the abdomen. On physical examination, tenderness was noted

in left hypochondriac(upper quadrant) region.

Patient was advised ultrasonography and admission for further management of the complaints. Ultrasonography revealed splenomegaly with a solitary ruptured splenic abscess along with mild hydronephrosis, hydroureter, mild chronic cystitis with urinary stasis. Haematological investigations on admission showed leucocytosis with neutrophilia. Urine examination showed granular cast along with increased white blood cells on microscopy and was sent for culture and sensitivity. Patient was posted for exploratory laparotomy. During surgery around 200 ml of pus was drained from the peritoneal cavity and splenectomy was performed. Pus drained was sent for the

culture study to the department of microbiology and resected spleen was sent for histopathological examination.

On gross examination, spleen showed a large ruptured cavitary lesion measuring 4 cm in diameter (Figure 1). Cut section showed areas of haemorrhage and necrosis. Representative sections studied microscopically showed areas of necrosis infiltrated with inflammatory cells and exudate (Figure 2). Post operatively patient was managed with broad spectrum antibiotics until culture and antibiotic sensitivity report was available.. Culture reports of urine and pus revealed the isolates of *E. coli* from both the samples. Patient was discharged with oral medications and other relevant instructions.



Figure 1. Photograph showing the cavitary lesion in the spleen.

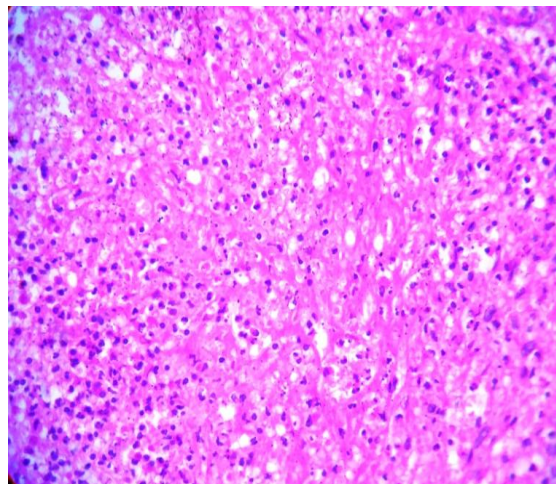


Figure 2. Photomicrograph showing necrosed splenic tissue with polymorphonuclear infiltrates

## DISCUSSION

Splenic abscesses are uncommon with an incidence of 0.14-0.70% in autopsy series.<sup>[6]</sup> Bimodal age distribution has been noted. Peak incidences between 30-40 and 60-70 years of age with both the sexes are affected equally.<sup>[6]</sup> Approximately 2/3 of splenic abscesses in adults are solitary and 1/3 is multiple. Ruptured splenic abscess is one of the most serious complications of

splenic abscess. In our case it was solitary ruptured splenic abscess. Only 70 cases of ruptured splenic abscess have been reported till 2009 in international literature.<sup>[2]</sup> The classical triad of findings in a patient of splenic abscess is fever, left upper quadrant pain and splenomegaly<sup>7</sup> as noted in our patient. Localisation of the pain to the left upper quadrant and splenomegaly are reported in less than 50% of the patients.<sup>[7]</sup>

Although Gram-positive cocci (*Staphylococcus aureus* and *Streptococcus pyogenes*) are most frequently reported as a cause of splenic abscess, several studies indicated the significant role of Enterobacteriaceae. Among Gram-negative bacilli, the following were the most frequently encountered pathogens: *Klebsiella pneumoniae*, *Escherichia coli*, *Pseudomonas species*, *Salmonella species*, *Proteus*.<sup>[8]</sup> In our case *Escherichia coli* was isolated from the pus drained from the ruptured abscess. Chang et al.<sup>[3]</sup> found that patients infected with Gram-negative bacilli are prone to develop multiple splenic abscess and have a higher mortality rate than patients with Gram positive infection. In the present report, imaging data resulted in early diagnosis of solitary splenic abscess.

Actually, most splenic abscesses encountered in clinical practice are solitary, and are quite hard to diagnose because of non specificity of symptoms. To clinch the diagnosis, an abdominal ultrasound examination or a CT scan is mandatory. The causes of splenic abscesses may include metastatic and contiguous infection, neoplasia, immunodeficiency and haemoglobin abnormalities, trauma, splenic infarcts, patients undergoing chemotherapy as well as noninfectious embolisation (leading to ischaemia and secondary infection).<sup>[9]</sup> Immunodeficiency states are the predisposing factors in almost two-third of patients. The treatment modalities of splenic abscess are antibiotic therapy whether in conjunction with splenectomy, percutaneous drainage or aspiration or antibiotic therapy alone.<sup>[3]</sup> But better outcome was found in patients with splenectomy than patients with percutaneous drainage or aspiration in solitary splenic abscess.<sup>[3,9]</sup> as noted in this case. Published reviews in the 1980s and 1990s advocate splenectomy as treatment for splenic abscesses. Ooi et al.<sup>[10]</sup> suggested that

percutaneous drainage may be effective for selected cases, but still described splenectomy as “definitive”. We report this case because of its rarity and early diagnosis and effective management.

## CONCLUSION

Ruptured solitary splenic abscess is an unusual and potentially life threatening disease with a diagnostic challenge due to the nonspecific clinical picture. Splenic abscess should be suspected in febrile patients with left upper quadrant tenderness and leukocytosis. Early diagnosis with imaging studies and treatment with splenectomy and antibiotics reduces the mortality.

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How to cite this article: Shukla DB, Desai SR, Thakkar HN. Ruptured solitary splenic abscess due to e. coli - a rare case report. Int J Health Sci Res. 2014;4(4):207-210.

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