

Rare case of multiple splenic abscesses in enteric fever with contained rupture: Successful conservative management in an immunocompetent young adult

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ABSTRACT

Splenic abscess is a rare but potentially life-threatening complication of enteric fever, particularly in immunocompetent individuals. It occurs in <1% of patients with typhoid or paratyphoid fever and has traditionally been managed surgically due to the risk of rupture and sepsis. We report the case of a 22-year-old immunocompetent male with *Salmonella paratyphi A* infection complicated by multiple splenic abscesses with radiological evidence of contained rupture, who was successfully managed with intravenous antibiotics alone. The patient remained hemodynamically stable without features of generalized sepsis and showed complete clinical and radiological resolution on conservative therapy. This case highlights the importance of considering splenic abscess as a complication of prolonged enteric fever and demonstrates that non-surgical management can be a safe and effective option in carefully selected, stable patients.

Key words: Conservative management, Enteric fever, Immunocompetent host, *Salmonella paratyphi*, Splenic abscess

Splenic abscess is an uncommon clinical entity, with a reported incidence ranging from 0.14% to 0.7% in autopsy and clinical series [1,2]. It is most often associated with predisposing conditions such as diabetes mellitus, immunosuppression, infective endocarditis, trauma, or hematological malignancies [1-3]. Its occurrence in enteric fever is exceedingly rare, accounting for <1% of reported cases [4,5]. Enteric fever, caused by *Salmonella enterica* serotypes Typhi and Paratyphi, remains endemic in many developing countries [4]. While common complications include intestinal hemorrhage, ileal perforation, hepatitis, myocarditis, and encephalopathy, splenic involvement is usually limited to splenomegaly. Abscess formation within the spleen represents a distinctly uncommon but serious complication, often associated with prolonged bacteremia, delayed diagnosis, or inadequate antimicrobial therapy [4,5]. Conventionally, splenectomy has been considered the treatment of choice for splenic abscess, particularly in cases with multiple abscesses or evidence of rupture [1,2]. However, surgical management is associated with significant morbidity and long-term infectious risks, including overwhelming post-splenectomy infection [2,6,7]. Advances in imaging

techniques, antimicrobial therapy, and supportive care have led to increasing recognition of conservative, spleen-preserving approaches in selected patients [6,8,9].

The rationale for reporting this case lies in the extreme rarity of splenic abscess as a complication of enteric (typhoid) fever, particularly in immunocompetent individuals, and in highlighting the feasibility of successful conservative, non-surgical management in carefully selected, clinically stable patients, even in the presence of multiple abscesses with contained rupture [5,8,9].

CASE REPORT

A 22-year-old previously healthy male, son of a serving naval personnel, presented with a history of intermittent high-grade fever for 6 weeks, preceded by a dry cough of 10 days' duration. The fever was documented up to 39–40°C, associated with chills and rigors, partially relieved by antipyretics, and without a clear diurnal variation. He had received multiple courses of empirical oral antibiotics before presentation, with only transient symptomatic relief.

One week before admission, he developed left hypochondrial pain, described as a dull, aching pain of moderate intensity (6/10 on the Visual Analog Scale), continuous in nature, nonradiating, and aggravated by deep inspiration and lying on the left side. There was no

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history of trauma. The pain was associated with anorexia and an unintentional weight loss of approximately 10 kg over 2 months. There were no associated symptoms of vomiting, diarrhea, gastrointestinal bleeding, urinary complaints, skin rash, or joint pains.

On examination, he was afebrile, with a pulse rate of 98 beats/min and blood pressure of 110/70 mmHg. He was clinically stable. Abdominal examination revealed localized tenderness in the left upper quadrant without guarding or rigidity. The liver and spleen were not palpably enlarged.

Laboratory evaluation showed hemoglobin 11.2 g/dL, total leukocyte count 12,300/mm³ with neutrophilic predominance, and platelet count $1.4 \times 10^5/\text{mm}^3$. C-reactive protein was 102 mg/L, and erythrocyte sedimentation rate was 65 mm/h. Liver function tests showed mild transaminitis, while renal function was normal. Typhidot immunoglobulin M was positive. Blood culture grew *Salmonella paratyphi A*, sensitive to ceftriaxone and azithromycin. Serological tests for human immunodeficiency virus, hepatitis B virus, and hepatitis C virus were negative. Chest radiograph showed minimal left-sided pleural effusion.

Contrast-enhanced computed tomography of the abdomen revealed mild splenomegaly with multiple hypodense lesions, the largest measuring $50 \times 40 \times 44$ mm, along with perisplenic fluid suggestive of capsular breach and contained rupture. Magnetic resonance imaging of the abdomen confirmed these findings (Fig. 1).

Despite radiological evidence of contained rupture, the patient remained hemodynamically stable and afebrile, without features of systemic sepsis. After multidisciplinary discussion involving internal medicine, radiology, and surgery, a decision was made to pursue conservative management. He was treated with intravenous ceftriaxone (2 g/day) and azithromycin (500 mg/day).

Serial clinical assessment and laboratory monitoring showed steady improvement, with defervescence, reduction in inflammatory markers, and resolution

of abdominal pain. No percutaneous drainage or surgical intervention was required. Follow-up imaging demonstrated progressive reduction in the size of the splenic abscesses and resolution of the perisplenic collection. The patient was discharged in stable condition and remained asymptomatic on follow-up.

DISCUSSION

Splenic abscess is an uncommon but potentially serious clinical entity, with high mortality reported in older series before the routine use of advanced imaging. Outcomes have improved considerably with early diagnosis using contrast-enhanced imaging modalities and prompt institution of appropriate antimicrobial therapy [1,2]. Splenic abscesses are most often encountered in patients with underlying immunosuppression, infective endocarditis, hemoglobinopathies, trauma, or malignancy, whereas their occurrence in enteric fever, especially in immunocompetent hosts, remains distinctly rare [1-3].

In enteric fever, abscess formation within the spleen is thought to result from hematogenous bacterial seeding during sustained bacteremia. Factors such as delayed diagnosis, prolonged febrile illness, and partial or inappropriate antibiotic therapy may contribute by promoting splenic microinfarction and secondary infection. The predilection of *Salmonella* species for the reticuloendothelial system further explains splenic involvement during systemic infection [4,5].

The radiological differential diagnosis of multiple splenic lesions includes splenic infarction, hematoma, tuberculosis, fungal microabscesses, lymphoma, and metastatic deposits. Accurate diagnosis, therefore, requires careful integration of clinical findings, microbiological evidence, and imaging characteristics [3,6].

Historically, splenectomy was considered the definitive treatment for splenic abscess, particularly in patients with multiple collections or evidence of rupture. However, splenectomy is associated with long-term risks, most notably overwhelming post-splenectomy infection, with a reported lifetime risk of approximately 3–5% [2,7]. Consequently, contemporary management increasingly favors spleen-preserving strategies in appropriately selected patients. Conservative treatment with intravenous antibiotics, with or without image-guided percutaneous drainage, is effective in clinically stable patients [5,8,9].

The present case is noteworthy because multiple splenic abscesses with radiological evidence of contained rupture were successfully managed with antibiotic therapy alone. This supports emerging evidence that conservative management may be safely pursued in carefully selected, hemodynamically stable patients under close clinical and radiological monitoring, reserving surgical intervention for those who deteriorate or fail medical therapy.



Figure 1: Magnetic resonance imaging abdomen showing multiple splenic abscesses with perisplenic collection indicating contained rupture

CONCLUSION

Splenic abscess is a rare but important complication of enteric fever, even in immunocompetent individuals. While surgical intervention has conventionally been the standard of care, conservative management with appropriate intravenous antibiotics may be a safe and effective alternative in carefully selected, clinically stable patients. Early diagnosis, thorough evaluation of differential diagnoses, and a multidisciplinary approach are essential to optimize outcomes and preserve splenic function.

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