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# Splenic abscess is extremely rare after amoebic dysentery.



A case report and review of the literature

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## Splenic abscess is extremely rare after amoebic dysentery. A case report and review of the literature

Splenic abscess is a rare condition, which is often asymptomatic in the absence of comorbidity and is associated with high mortality rates.

Given the importance of the differential diagnosis of patients who present to the emergency department with fever or septic shock, we report the case of a patient with amoebic splenic abscess who presented to our clinic with widespread skin rash and signs of septic shock following amoebic dysentery caused by Entamoeba histolytica, which is rarely reported in the literature.

KEY WORDS: Amoebic Spleen Abscess, Amoebic Abscess, Entamoeba Histolytica, Splenic Abscess

## Introduction

Splenic abscess is a rare condition, which is often asymptomatic in the absence of comorbidity and is associated with high mortality rates. It may not always be possible to identify its actiology  $^{1}$ .

Splenic abscess has various causes, but it is often secondary to trauma and infection. Aerobic microorganisms have also been frequently reported to be among the infectious causes. Immunosuppression is an important risk factor in these patients <sup>2-5</sup>. Given the importance of the differential diagnosis of patients who present to the emergency department with fever or septic shock, we report the case of a patient with amoebic splenic abscess who presented to our clinic with widespread skin rash and signs of septic shock following amoebic dysentery caused by *Entamoeba histolytica*, which is rarely reported in the literature.

## Case Report

A 38-year-old male patient was admitted to the emergency department of Çanakkale State Hospital due to worsening general condition, fever, skin rashes and abdominal pain. In his anamnesis, the patient reported a history of severe diarrhoea about 1 month ago, but he did not see a doctor or receive any therapy at that time. On physical examination, the patient was conscious, extensive petechial rash associated with peripheral septic embolisms was observed, especially on the lower extremities, the abdomen was tender to palpation on examination and his temperature was 38.3 °C (Fig. 1).

Laboratory examination findings of the patient showing signs of septic shock were as follows: glucose, 174 mg/dL; alkaline phosphatase, 147 U/L; LDH, 321 U/L; urea,

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Fig. 1: Petechial rash in lower extremities due to systemic involvement by Entamoeba histolytica.



Fig. 2: Increase in size when viewed from the anterior of the spleen, tension in the capsule and abscess formation.

107 mg/dL; creatinine, 3.55 mg/dL; CRP, 135.4 mg/dL. All values were higher than the normal range.

Ultrasound examination revealed a slight increase in liver size, lymphadenopathies in the vicinity of the hepatic hilus and bilateral inguinal regions and an increase in the size of both kidneys. The splenic dimensions had increased by 151 mm, and a lobular cystic area with mixed echogenicity, which was suggestive of a splenic abscess, was noted in the middle of the spleen. An emergency splenectomy was performed, as the patient's general condition further deteriorated.

On macroscopic examination, there was tension in the capsule of the splenectomy material measuring  $20 \times 8 \times 4.5$  cm<sup>3</sup>. In the middle of the spleen, an abscess of  $5 \times 5$  cm<sup>2</sup> that was filled with yellow pus was noted (Fig. 2). On histopathological examination, extensive hyalinisation areas and abscess formation were observed in the splenic parenchyma, and *E. histolytica* trophozoites accompanying widespread polymorphonuclear leucocytes were



Fig. 3: Excessive hyalinisation and abscess formation in the splenic parenchyma (hematoxylin-eosin staining  $\times$  40).



Fig. 4: Abscess formation in the splenic parenchyma (hematoxylineosin staining  $\times$  100).



Fig. 5: Entamoeba histolytica trophozoites phagocytising erythrocytes and accompanying widespread polymorphonuclear leucocytes in the abscess content (hematoxylin-eosin staining  $\times$  1000).

observed within the abscess; therefore, the patient was diagnosed with amoebic splenic abscess (Figs. 3-5).

The patient was transferred to the intensive care unit after the surgery. He had no past history of positive laboratory tests for any amoeba species. However, metronidazole was initiated due to the high clinical index of suspicion. Regression in peripheral septic emboli in the lower extremities and remarkable improvement in the general condition were observed after 3 days. The patient stayed in the intensive care unit for approximately 26 days; nosocomial infectious agents were found in the blood culture, but the patient was discharged from the hospital after administering antibiotherapy for multiple drug-resistant microorganisms.

#### Discussion

Amoebiasis, which is caused by *E. histolytica*, is a common infection worldwide, although it is more common in the tropical and subtropical regions. It is reported to be the most common cause of death after malaria and schistosomiasis, among parasitic diseases. Amoebiasis shows a variable course from asymptomatic carriage to fulminant colitis  $^{5-8}$ .

E. histolytica cysts are first orally ingested, open in the small intestine, pass through the large intestine, transform into disease-causing trophozoites and then become mature. The incubation period can last from 3-5 days to 1-4 months. Amoebic cysts transmitted through the consumption of contaminated water can cause more severe disease. Some patients present with appetite loss, weight loss, nausea and bloody diarrhoea, whereas others manifest no symptoms <sup>9</sup>.

ers manifest no symptoms <sup>9</sup>. Disease usually occurs due to weakened immune function of the body, and in patients with advanced disease, amoeba may cause abscesses in the liver, spleen, lung, brain, skin and urinary tract through haematogenous dissemination. It is reported that the liver is the most common extraintestinal site for the occurrence of amoebic abscess <sup>9</sup>. Amoebic splenic abscess has been rarely reported in the literature.

In a study conducted by Ferraioli et al. on 16 patients with isolated splenic abscess in 2009, the abscess was caused by bacterial infection in 10 patients, fungal infection in 4 patients, tuberculosis in 1 patient and amoebic infection in 2 patients  $^2$ .

Splenic abscess has various causes, but they are mostly seen secondary to trauma and infection. The most common infectious causes are reported to be aerobic microorganisms, especially *Staphylococcus*, *Streptococcus*, *Salmonella* and *Escherichia coli* and rarely *Mycobacterium tuberculosis* <sup>10,11</sup>.

The definitive diagnosis of amoebic abscess, one of the least common causes of splenic abscess, is made by observing the presence of *E. histolytica* trophozoites in the abscess content.

We know that our patient had severe diarrhoea about a month before presenting to the hospital. However, the patient did not visit the hospital and did not undergo the necessary tests. Therefore, he was not diagnosed at that time and presented to our hospital with worsening general condition after systemic involvement. The diagnosis of amoebic splenic abscess was established with histopathological analysis. As a result of metronidazole therapy that was initiated based on the high clinical index of suspicion without waiting for a pathology report, septic vasculitis-related rash regressed and the general condition of the patient improved.

Although methods such as ultrasound-guided abscess drainage have been employed for splenic abscesses, splenectomy is the gold standard. Ultrasound-guided abscess drainage may be preferable in cases with a poor general condition and high surgical risk. In addition to advantages such as low cost and ease of administration, disadvantages such as intraabdominal contamination have been reported <sup>12</sup>. We preferred to treat the patient with splenectomy because the risk of surgery was not very high in our case.

### Conclusion

In conclusion, although splenic abscess is rarely observed, it is necessary to keep it in mind in the differential diagnosis of patients who present to the emergency department with fever or septic shock, considering the high risk of mortality of this condition.

#### Riassunto

L'ascesso splenico è una condizione rara, che è spesso asintomatica in assenza di comorbilità ed è associata ad alti tassi di mortalità.

Data l'importanza della diagnosi differenziale dei pazienti che si presentano al pronto soccorso con febbre o shock settico, riportiamo il caso di un paziente con ascesso splenico amebico presentatosi alla nostra clinica con diffusa eruzione cutanea e segni di shock settico in seguito a dissenteria amebica causata di Entamoeba histolytica. Tale evenienza è raramente riportata in letteratura.

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