

Splenic Abscess: Challenges in emergency surgery

Dalak absesi: Acil cerrahide karşılaşılan zorluklar

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ABSTRACT

Splenic abscess is a rare clinical entity with an incidence of 0.2 to 0.7% in autopsy series. The mortality of the disease reaches to 100% without treatment. Splenic abscess is a diagnostic challenge in emergency surgery due to its prognostic nature. The diagnosis is difficult because of its rarity and often subtle clinical manifestations of splenic abscess, a high index of suspicion is necessary to make accurate diagnosis. Herein, we reported two cases of splenic abscess managed by surgical intervention. Surgeons, emergency doctors or whoever consults patients in emergency department must be aware of this condition, in order to make a proper management approach and reduce mortality and morbidity.

Key words: Spleen, abscess, surgical management

INTRODUCTION

Splenic abscess (SA) is a rare entity, with a reported frequency in autopsy series between 0.14% and 0.7%. Immuno-deficient patients, trauma, impaired host resistance, endocarditis, urinary tract infection, sepsis, diabetes mellitus, respiratory tract infection and intravenous drug abuse are the most common reasons of splenic abscess¹. The diagnosis is difficult because of its rarity and often subtle clinical manifestations of splenic abscess, thus a high index of suspicion is necessary to make accurate diagnosis. Successful management requires a combination of early diagnosis and early surgical or imaging-guided intervention. Delayed detection and treatment are the main causes of high mortality rates. The late occurring of physical findings and insidious presentation of the splenic abscess do physicians should be kept in mind this rare entity to reduce morbidity and mortality in emergency departments. Herein we reported two cases of splenic abscess managed by surgical intervention.

ÖZET

Dalak absesi klinikte nadir görülen bir durum olup sıklığı otopsi serilerinde %0.2-0.7 arasında değişmektedir. Hastalık tedavi edilmediği takdirde mortalitesi %100'e ulaşmaktadır. Dalak abselerinin prognostik tabiatı nedeni ile acil cerrahide zorluklar mevcuttur. Nadir görülmesi ve klinik belirtilerinin sinsi seyretmesi nedeni ile tanı koymak zor olup, kesin tanıda hastalıktan şüphelenmek gerekir. Bu yazıda cerrahi girişimle tedavi edilmiş iki dalak absesi sunulmuştur. Cerrahların, acil doktorlarının veya acil servislerde hasta konsülte eden diğer doktorların, uygun tedaviyi yapmak, mortalite ve morbiditeyi düşürmek için bu hastalığın farkında olmaları gerekmektedir.

Anahtar Kelimeler: Dalak, abse, cerrahi tedavi

CASE REPORTS

Patient 1

A 63-year-old woman was admitted to surgery department because of left upper quadrant pain and fever, which had persisted for 15 days. Her past medical history was unremarkable and she was a healthy-appearing patient. Abdominal computerized tomography (CT) demonstrated a low-density area in the spleen (Figure 1a). Routine laboratory investigations revealed as hemoglobin 9 g/dl, white blood cells 18900/l, blood urea nitrogen 42 mg/dl, creatinine 2.1 mg/dl and glucose 88 mg/dl. A splenic abscess was diagnosed by based on physical and laboratory examinations and imaging. The possible origins of splenic abscess were investigated including endocarditis, typhoid fever, malaria, urinary tract infection, pneumonia, otitis, and pelvic infections. Hemoglobinopathies were also searched. None of these diseases were to be detected in the patient. Also the patient had no history of trauma pre-

viously. There was no abscess formation in the other parts of the body in radiological investigation. The patient was referred to operation room. Initial laparoscopic approach was performed but failed due to inappropriate anatomy and multiple adhesions between spleen and surrounding organs. Conventional splenectomy was done and at exploration a 6x8 cm abscess in spleen was observed. The culture of the material obtained from abscess yielded *Escherichia coli*. The patient was discharged on the eighth day of operation uneventfully.

Patient 2

A 43 year-old woman, in a poor condition, presented with fatigue, left-sided abdominal pain, fever, numbness and pain in the left leg. On physical examination the patient had abdominal tenderness and rebound on left upper quadrant and ischemic left leg and no pulsation on both popliteal and pedal vessels. Lower extremity arterial doppler ultrasonography revealed occlusion in the left femoral artery. Thromboembolectomy and leg amputation was performed by cardiovascular surgeons. On the second day of amputation the patient was consulted with elevated fever and left upper abdominal pain. The patient was in a septic picture. On physical examination severe abdominal left sided pain and tenderness were found. CT of the abdomen revealed a 14x8 cm mass with air fluid levels in the spleen (Figure 1b). Percutaneous drainage was initially performed but no regression or pus drainage was achieved. The patient was referred to operation due to the poor ongoing general condition. The patient underwent splenectomy and a 12x10 cm abscess was observed in spleen. In both blood and abscess cultures *Staphylococcus aureus* grew. Unfortunately, the patient died on the second day of operation due to multiple organ failure and sepsis.

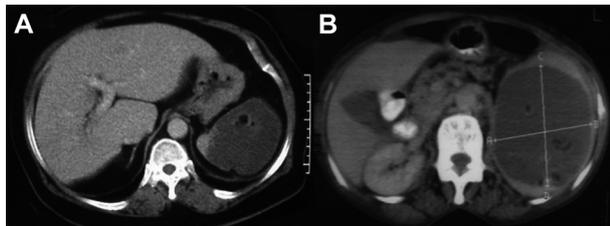


Figure 1. (A) Abdominal CT revealed a lesion of 6x8 cm abscess in spleen. (B) CT of the abdomen demonstrated a mass (14x8) with air fluid levels in the spleen.

DISCUSSION

One of the most important immuno-modulatory organs of human against infections is spleen. SA is rare in clinical practice. Patients with systemic bacteremia, emboli, trauma, recent surgery, malignant hematologic conditions, and immuno-suppression are more predisposed to splenic abscess². The clinical presentations of splenic abscess are fever, abdominal pain, left upper abdominal pain, chills, left-sided chest pain, vomiting, anorexia, weight loss, left shoulder pain, change in bowel habits in decreasing frequency rate³. SA is classified as primary and secondary form. The primary SA is presented only in spleen with single lesion and good prognosis. Immuno-deficiency and sepsis promote secondary SA with multiple lesions and poor prognosis³. In current study, in both cases the abscesses were only limited in the spleen. The most common organisms isolated from SA are *Streptococcus*, *Staphylococcus*, *Enterococcus*, *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus*, *Pseudomonas*, *Peptostreptococcus*, *Bacteroides*, *Fusobacterium*, *Clostridium*, and *Propionibacterium*. However, up to 36%–50% of cases the etiology has been shown polymicrobial⁴. Abdominal pain and fever are prominent signs of SA and 70% of patients have elevated leucocyte count and 60% have positive blood culture. Chest radiographs, ultrasonography (US), and computed tomography (CT) are the radiological diagnostic tools. Indirect signs of SA may be revealed as elevated left diaphragm and pleural effusion in chest radiographs. US is a noninvasive and cheap investigation modality but in some cases abscess and infarct cannot be discriminated. CT is coming into prominence among other methods. It is the most sensitive and specific imaging technique to diagnose splenic abscess^{5,6}. The typical appearance of a SA on CT is a focal lesion of low attenuation with peripheral enhancement after intravenous contrast injection. Only medical treatment remains controversial and the mortality rate has been reported to be approximately 50% in this approach⁷. Surgical interventions include percutaneous drainage, open or laparoscopic splenectomy, and open drainage. As the spleen is an important component of the body's defenses, spleen preserving modalities are favoured. US-guided or CT-guided percutaneous drainage is recent techniques and have success rate up to 75%. The limitations of these techniques are multiloculat-

ed or debris-filled abscess, multiple small abscesses, uncontrollable coagulopathy, poorly defined abscess on CT scan or ultrasonography, diffuse ascites, and inappropriate safe route for drainage. Hemorrhage, pleural empyema, pneumothorax, and fistula are the complications of percutaneous methods⁵⁻⁷. Splenectomy with a mortality rate of 0-17% and a morbidity rate of 28-43% is the standard therapeutic approach in cases which are unsuitable for minimal invasive techniques.

Splenic abscess is a diagnostic challenge in emergency surgery. Due to the nature of the disease, poor prognosis of the clinical course and accompanying diseases, clinicians encounter to high mortality and morbidity rates. Clinicians working or consulting in emergency services must keep this rare entity in mind to reduce mortality and morbidity.

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