

An unusual complication of septic sacroiliitis: Hepatic and splenic infarction after iliac vein thrombosis

Septik sakroileitin nadir bir komplikasyonu: İliak ven trombozu sonrası gelişen hepatik ve splenik enfarkt

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Abstract

Septic sacroiliitis typically presents with non-specific symptoms such as limping gait, radiating pain in the hip and lumbar region and fever. Differential diagnoses include pelvic abscess, lumbar disc herniation or septic arthritis of the hip, and misdiagnosis is common. Magnetic resonance imaging (MRI) greatly enhanced the ability to determine the extent of infection arising from the sacroiliac joint. We hereby present a rare case of hepatic and splenic infarction secondary to septic thrombophlebitis in a patient with sacroiliitis.

Keywords: Splenic infarct, Hepatic infarct, Septic sacroiliitis, Magnetic resonance imaging

Öz

Sakroileit genellikle topallama, kalça ve bel bölgesinde yayılan ağrı, ateş gibi non-spesifik semptomlarla prezente olabilir. Ayırıcı tanılar arasında pelvik abse, lumbar disk herniasyonu ve kalçanın septik artriti olup, yanlış tanı oranı yüksektir. Manyetik rezonans görüntüleme sakroiliak eklemden yayılan enfeksiyonun gösterilmesinde oldukça başarılıdır. Bu olgu sunumunda sakroileiti bulunan bir hastada septik tromboflebite bağlı gelişen hepatik ve splenik enfarkt sunulmuştur.

Anahtar kelimeler: Dalak enfarktı, Karaciğer enfarktı, Septik sakroileit, Manyetik rezonans görüntüleme

Introduction

The sacroiliac joint is a diarthrodial synovial joint with abundant innervation [1]. 10% to 25% of patients' persistent mechanical low back pain arise from the sacroiliac joint [2]. Infection of the sacroiliac joint is uncommon, representing 1–2% of septic arthritis cases. The predisposing factors for phylogenic sacroiliitis include parenteral drug abuse, systemic sclerosis, pregnancy, immunosuppression, trauma, hemoglobinopathies, diabetes mellitus, HIV infection, cancer, endocarditis, alcohol abuse, and skin, respiratory or genitourinary infections [1-3]. Differential diagnoses include pelvic abscess, lumbar disc herniation or septic arthritis of the hip, and misdiagnosis is common [2].

Septic sacroiliitis may get complicated in two ways: The infection can spread to adjacent tissue [1,3], or it can spread distantly with septic thrombophlebitis [4,5]. Due to nonspecific physical examination findings, diagnosis of septic sacroiliitis may be difficult. The availability of contemporary imaging techniques, such as magnetic resonance imaging, greatly enhances the ability to determine the precise location and extent of infection arising from the sacroiliac joint and other anatomic structures in the pelvis [6]. We hereby present a rare case of spleen infarction secondary to septic thrombophlebitis in a patient with sacroiliitis.

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Case presentation

A 38-year-old man was referred to our clinic with low back pain. Physical examination showed a tender left abdominal quadrant and hepatomegaly. White blood cell (WBC) count was 30.900/mm³ with 6.62% bands, 84.53% polymorphonuclear leukocytes (PMNs), and 8.85% lymphocytes. The erythrocyte sedimentation rate (ESR) was 1mm/h and C-reactive protein (CRP) was 243mg/l. Creatinine was normal while liver function tests had increased (Alanine aminotransferase (ALT): 76 U/L, alkaline phosphatase (ALP): 343 U/L, aspartate transaminase (AST): 88 U/L, direct bilirubin: 7.93 mg/dl, indirect bilirubin: 1.77 mg/dl, total bilirubin: 9.70 mg/dl). The blood culture was positive for staphylococcus aureus. Pre- and post-contrast pelvic magnetic resonance imaging (MRI) was performed. Pelvic MRI scans revealed right septic sacroiliitis findings such as subarticular intense edematous signal changes, significant joint effusion, adjacent soft tissue inflammation and abscess formation (Figure 1A-B). The massive inflammation extended into the spinal canal via the neural foramens. Post-contrast MRI scans showed an epidural abscess at L5/S1 level. Contrast enhanced images also revealed luminal obliteration and intense contrast enhancement on the vessel wall compatible with thrombophlebitis in the right internal iliac vein (Figure 1C-D), a wedge-shaped infarction area of decreased enhancement in the spleen and the left lobe of the liver (Figure 2A-B). Anticoagulant therapy was started for thrombosis. The patient was administered intravenous antibiotic treatment for septic sacroiliitis and discharged uneventfully after 10 days of hospitalization.

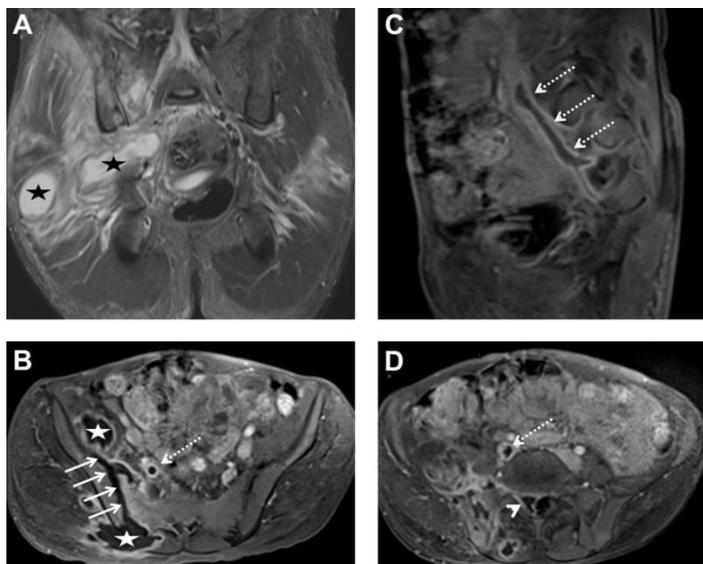


Figure 1: Coronal fat-sat T2 weighted (A) and post-contrast axial fat-sat T1 weighted (B) MR images of the pelvis reveal septic sacroiliitis (arrows) complicated by muscle abscesses (stars). Post-contrast fat-sat T1 weighted (B-D) images also show epidural involvement (arrowhead) of the abscess and right internal iliac vein thrombosis (dashed arrows).

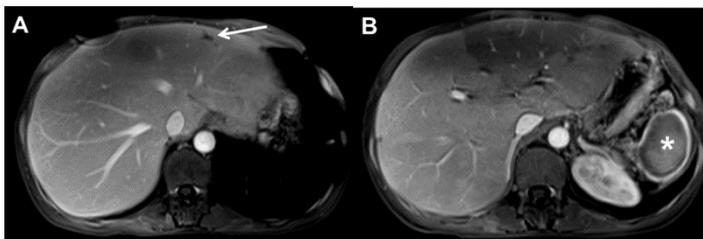


Figure 2: Contrast-enhanced fat-sat hepatic venous phase T1 weighted (A and B) MR images show a subsegmental hepatic infarct (arrow) with hypoperfused portion in left lobe. Post-contrast T1 weighted (B) MR image also demonstrates a large, global infarct (asterisk) of the spleen with only a tiny amount of enhancing splenic tissue (rim sign).

Discussion

Infection in the sacroiliac joint can spread to adjacent muscles. Pyomyositis of the iliopsoas muscle and gluteal abscesses have been very rarely reported [1,3]. MRI may provide more diagnostic accuracy in septic sacroiliitis than CT or radionuclide scanning. The authors emphasized that MRI has unique potential to delineate fluid in the sacroiliac joint, bone marrow edema, and soft tissue abscesses that may extend into the pelvic cavity [6]. MRI is also an important diagnostic tool for imaging vascular structures [7].

Septic sacroiliitis may present as acute, subacute, and chronic. ESR and CRP are almost always elevated in septic sacroiliitis. Leukocytosis, which is a nonspecific indicator of infection, may not always be encountered. Septic sacroiliitis is mostly observed unilaterally, but bilateral cases have also been reported. The primary infectious agent is usually *Staphylococcus aureus* [6]. ESR and CRP were higher than normal and leukocytosis was present in our patient. The infection was unilateral and blood culture was positive for *Staphylococcus aureus*.

Spinal epidural abscess and splenic infarction associated with septic sacroiliitis is uncommon. In our case, a spinal epidural abscess had developed after spreading via sacral neural foramen, and splenic infarction and iliac vein thrombosis had caused intense inflammation. The predisposing factors for spinal epidural abscess include diabetes mellitus, end-stage renal disease, endocarditis, urosepsis, intravenous drug use, rheumatoid arthritis, previous spinal procedure, previous spinal or dental trauma, alcoholic or viral cirrhosis and HIV infection. None of these etiologic factors were found in our case.

Septic thrombophlebitis or acute venous thrombosis may be associated with septicemia or bacteremia [6]. In our case, there were hepatic and splenic abscesses, for which the most frequent factor is metastatic hematogenous infection [4,8,9]. The spleen is a particularly easier target for embolism owing to the features of its anatomy and blood circulation [10].

Abscess treatment generally involves drainage by needle aspiration or surgery; however, cases of complete regression with antibiotics have also been reported [1]. There is no gold standard management for splenic abscesses. Splenectomy has been the most preferred method of treatment. Currently, conservative methods such as percutaneous drainage are performed in particularly in thick-walled, solitary abscesses [8,9].

Conclusion

We presented MRI findings of this exceedingly rare case of the hepatic and spleen infarction associated with septic sacroiliitis. Abdominopelvic MRI is the best diagnostic modality and should be performed particularly in septic sacroiliitis patients presenting with upper quadrant pain.

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