

Accidental Discovery of Pregnancy-associated Septic Sacroilitis on Ultrasound

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Pain in the sacroiliac joint and lower back is common during pregnancy and postpartum periods. However, pregnancy related septic sacroilitis is very rare. A 37-year-old pregnant woman had a sudden severe lower back pain two days in advance of the delivery. However, she delivered a healthy baby under cesarean section in good condition. Laboratory tests revealed elevated erythrocyte sedimentation and C-reactive protein, but her initial magnetic resonance imaging of lumbar spine and abdominal pelvis computed tomography were normal. Therefore, she was considered having a general acute back pain that many postpartum patients can have. Conservative treatment was received until she was referred to pain clinic. While we were planning pain management under ultrasound guided, we encountered mass-like lesion on her left sacroiliac joint accidentally. Sacroiliac MRI was taken immediately and It revealed septic sacroilitis. Pregnant with high ESR, CPR with severe localized sacroiliac joint pain should be suspected of pregnancy related septic sacroilitis.

Key Words: pregnancy, septic sacroilitis, ultrasound.

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The majority of sacroiliac joint disease with lower back pain is regarded as non-specific degenerative arthritis. However, this joint pain could arise from bacteremia and lead to a pyogenic process. This condition is more common in intravenous drug users, while pregnancy-related infectious sacroilitis is very rare according to worldwide reported cases. A diagnosis of pathologic sacroiliac joints during pregnancy may be challenging, as pain in the lower back and buttocks is common during pregnancy and postpartum periods [1,2]. We accidentally encountered such a case on ultrasound while planning pain management, otherwise misdiagnosed as pregnancy-related arthropathy.

We, therefore, review this rare pregnancy-associated septic sacroilitis and discuss the usefulness of ultrasound as a simple, easy imaging tool for diagnosis and guiding treatment.

CASE REPORT

A 37-year-old pregnant woman experienced sudden severe lower back pain two days before delivery. However, she delivered a healthy baby under cesarean section in good condition with normal vital signs, including body temperature.

Delivery was performed at a different hospital, and according to the discharge file was normal without need for instrumentation; evidence of soft tissue trauma, including vaginal wall tears; or any other complications.

Even though she had minor occasional backache during pregnancy, her past medical history was unremarkable before and during pregnancy.

The patient's severe back pain continued over the next few days after delivery, to the point that she could not even bear her weight on both legs. She was then transferred to the neurosurgery department of our hospital. On admission, physical examination revealed severe localized tenderness over the left sacroiliac joint and left side lower back pain. Because of her severe pain, it was almost impossible to shift the patient from the supine position and, consequently, the neurologic examination could not be completed. The patient's vital signs were normal, including body temperature.

Laboratory tests revealed an elevated erythrocyte sedimentation rate (ESR, 86 mm/hr) and C-reactive protein (CRP, 136.2 mg/L); otherwise, routine chemistry, urinalysis, complete blood cell count (CBC), including white blood cell count (WBC), and neutrophil percentage were all within normal range. At the time of admission, magnetic resonance imaging (MRI) of the lumbar spine and abdominal pelvis computed tomography (CT) were also normal (Fig. 1). Therefore, the patient was initially considered as having general acute back pain of neuromuscular origin, which is common in many postpartum patients. Conservative treatment including painkillers and thermotherapy was administered until she was referred to our pain clinic on the sixth day of admission with refractory pain so severe that she could not change body position and was unable to relieve herself of urine and feces. On physical examination, she had moderate lower back and buttock pain around the left side sacroiliac joint area, but no redness or swelling in this area. There was no direct tenderness in the midvertebral, paravertebral or any other spinal areas. Our first impression was myofascial pain syndrome originating from the left side of the piriformis muscle and general pregnancy-associated sacroiliac arthropathy. Consequently, ultrasound-guided left side piriformis block and/or sacroiliac joint block was planned.

While scanning the ultrasonograph, a mass-like lesion around the left sacroiliac joint area was found. Ultrasound scan revealed an irregular hyperechoic mass with no apparent post-acoustic enhancement (Fig. 2); consequently, all blocks were cancelled on suspicion of soft tissue mass or abscess. Sacroiliac MRI was taken immediately revealing sacroiliitis of the left sacroiliac joint (Fig. 3). The next day, a CT-guided bone biopsy was done for differential diagnosis without culture or aspiration and septic arthritis was confirmed. After confirming the mass was benign, an 8-week course of broad-spectrum ceftriaxone 1 g every 8 hours intravenously was immediately started without culture study. Since the type of mass was not capsulated abscess pocket, aspiration was considered inappropriate in this case. After 20 days of antibiotic therapy, the patient was ambulatory and showed steady improvement thereafter. Upon finishing the 8-week drug course, the patient was discharged and doing well with normal ambulation, although she continued to have mild discomfort in the left buttock. Her ESR and CRP had returned to normal and she is currently still attending follow-up treatment.

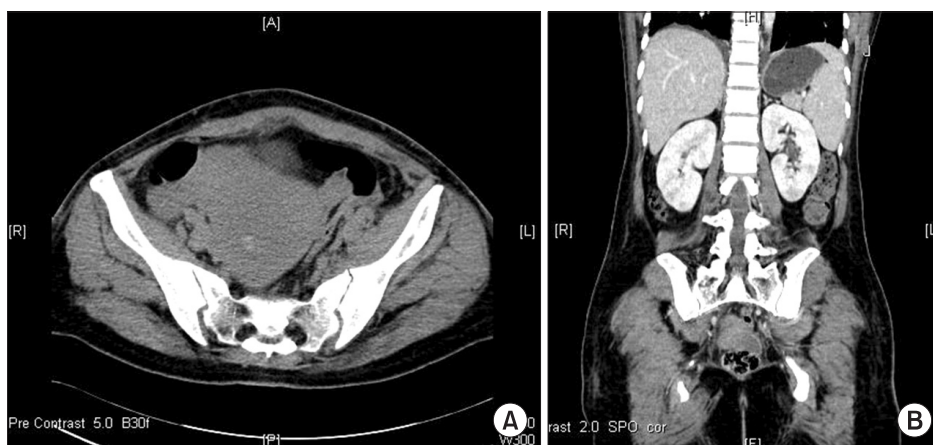


Fig. 1. (A) Coronal view of abdomen and pelvis CT at admission was normal. (B) Sagittal view of abdomen and pelvis CT at admission was normal.

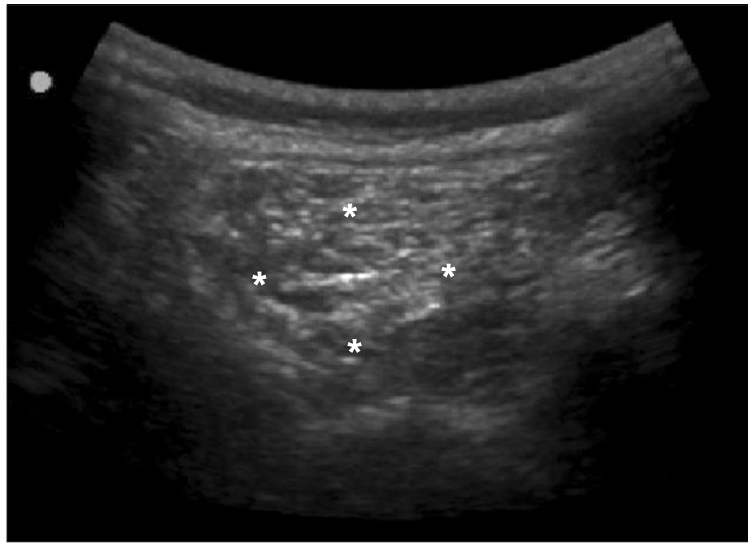


Fig. 2. A hyperechoic pocket scanned at left gluteal area on ultrasound (asterix: hyperechoic mass).

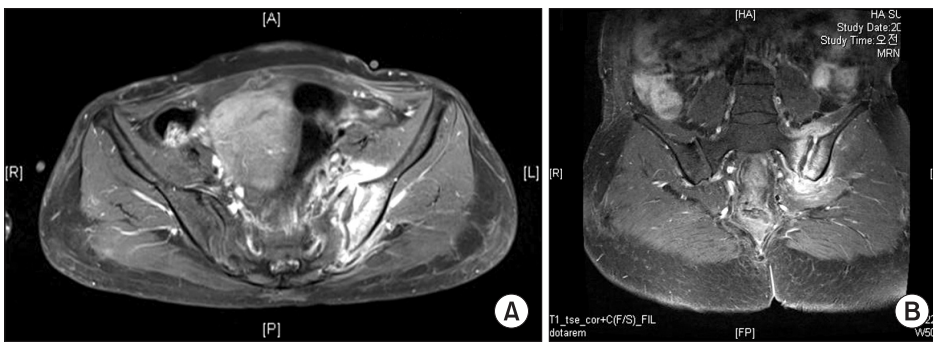


Fig. 3. (A) Sacroiliitis of the left sacroiliac joint is seen with extensive osteomyelitis in coronal view of sacroiliac joint MRI. (B) Sacroiliitis of the left sacroiliac joint is seen with extensive osteomyelitis in sagittal view of sacroiliac joint MRI.

DISCUSSION

Bacterial sacroiliitis is a rare infection during pregnancy and postpartum periods, and it is not normally suspected for several days. In this particular case, it is uncertain whether joint infection preceded, coincided with or followed cesarean section. Pathogenesis was suspected as being hematogenous. The most common etiologic agents are *Staphylococcus aureus* and *Streptococcus pneumoniae*, while *Pseudomonas aeruginosa* is common in intravenous drug users. It is important to note, however, that blood cultures are positive in only one- to two-thirds of these patients [3-6]. In our case, a biomarker of bacterial infection such as procalcitonin and acute phase protein such as CRP may be of great help in suspecting and diagnosing infection. Treatment for pregnancy-related bacterial sacroiliitis is similar to that for non-pregnant patients. Antibiotic therapy directed toward the isolated specific pathogen for 4-6 weeks resulted in the favorable recovery of our patient.

Plain X-ray and CT scans of the pelvis are usually normal at presentation [5,7,8], as was the case in this patient. Blurring and erosion of the margins of the sacroiliac joint started to change 2 weeks after onset of symptoms [4,7]. Scintigraphy is more sensitive for detecting early bacterial sacroiliitis [1,6,8,9], but due to radiation exposure, it should only be taken after delivery, likewise with X-ray and CT. MRI is the method of choice in pregnancy.

Innovations and improvements in imaging technology have allowed incorporation of ultrasound into daily practice. Even though the learning curve is long and slow, real-time ultrasound can scan for diseased and contralateral healthy lesions simultaneously

to compare pathologic patterns against normal findings without expending much time, money or effort. The use of ultrasound has changed the fact that procedures are performed under direct puncture visualization, and, therefore, constitute a more precise anatomical approach. In our patient, ultrasound was not only the imaging modality for treatment, but also a radiation-safe and simple diagnostic imaging method, which prevented a misdiagnosis of common pregnancy-associated arthropathy.

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