



## Postpartum Unilateral Sacral Stress Fracture Mimicking Lumbar Radiculopathy: Case Report

*Lomber Radikülopatiyi Taklit Eden Postpartum Unilateral Sakral Stres Kırığı: Olgu Sunumu*

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### Abstract

Postpartum sacral stress fracture is a very rare clinical entity. Because of the ambiguous clinical and radiological findings, it is often diagnosed late. A case of a postpartal 25-year-old female patient presented with acute onset of low back pain radiating to the right extremity, mimicking lumbar radiculopathy. Magnetic resonance imaging of sacrum revealed a non-displaced stress fracture of the right sacral ala. The 25-hydroxy vitamin D level of the patient was very low; dual energy X-ray absorptiometry measurements were in the normal range. The patient is completely cured as a result of conservative treatment. As a result, sacrum stress fracture should be kept in mind in the presence of back pain during pregnancy and postpartum period.

**Keywords:** Sacral, postpartum, stress fracture

### Öz

Postpartum sakral stres kırığı oldukça nadir bir klinik tablodur. Müphem klinik ve radyolojik bulgularının olması nedeniyle sıklıkla geç tanı almaktadır. Bu yazıda akut gelişen, lomber radikülopatiyi taklit eden ve belden sağ bacağa yayılan bir ağrı ile başvuran 25 yaşındaki postpartum dönmedeki kadın olgudan bahsedilmiştir. Manyetik rezonans görüntüleme ile hastada sakrumda alar bölgede displase olmamış stres kırığı tespit edildi. Hastanın 25-hidroksi vitamin D düzeyi çok düşük iken; dual enerji X-ray absorpsiyometri ölçümü normal aralıkta bulundu. Konservatif tedavi sonucunda hasta tamamen iyileşti. Sonuç olarak gebelikte ve postpartum dönemde hastalarda bel ağrısı varlığında sakrum stres kırığı akıldta tutulmalıdır.

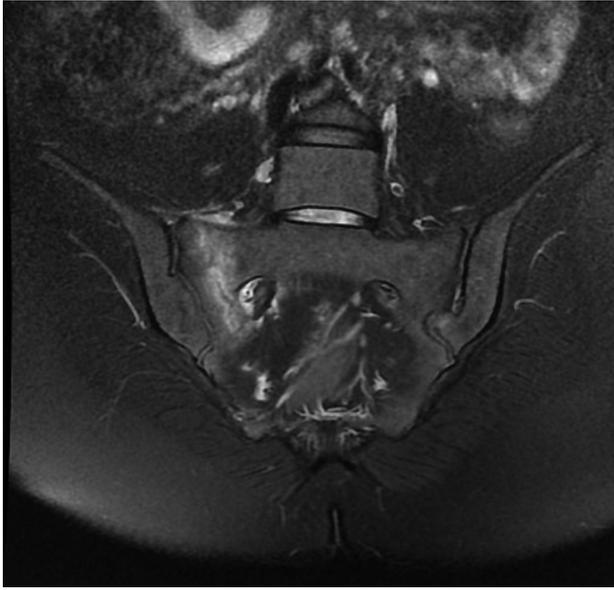
**Anahtar kelimeler:** Sakral, postpartum, stres kırığı

### Introduction

Complaints of low back pain and pain originating from sacroiliac joint are very common during pregnancy and postpartum period. So this commonness leads to a difficulty for the differential diagnosis of the significant etiologies and missed cases (1,2). Sacral stress fracture is a very rare condition which may have many different clinical appearances. Up to now only a few cases have been reported in the literature describing the sacral stress fracture in the postpartum period. Clinical suspicion on this special diagnosis which may have important effects on patient quality of life should be increased.

### Case Report

A 25-year-old female patient was admitted with acute onset of low back pain which had radiation to the right extremity till the foot. The pain was aggravating by standing and walking of the patient. In her medical history it was revealed that only a week ago she gave birth to a 3700 grams baby via spontaneous vaginal delivery. She had neither low back pain nor history of trauma or any constraint activity before. In the physical examination there was an antalgic gait pattern in addition to restricted and painful right hip rotation. Although straight-leg-raise was negative, sacroiliac joint was very painful



**Figure 1.** Sacroiliac joint magnetic resonance imaging: T2-weightened image shows the stress fracture in right sacral ala

with compression test at the right side. Direct radiographies of lumbar spine and pelvic bone were normal. Magnetic resonance imaging (MRI) of lumbar spine and sacroiliac joint showed a nondisplaced sacral stress fracture and osseous edema around it at the right side of sacral ala (Figure 1). Serum calcium, phosphorus and alkaline phosphate levels were all normal in addition to basic laboratory tests for renal, liver and thyroid functions except very low 25-hydroxy vitamin D level, as 4.8 ng/mL (normal range: 30-78 ng/mL). After seeing normal T and Z scores in the bone mineral density measurement with dual energy X-ray absorptiometry, a treatment protocol consisting bed rest, pain control, supplementation of vitamin D and calcium suggested and accepted by patient. After three months of treatment she had no pain and her gait pattern was completely normal.

## Discussion

Sacral stress fractures are very rare and most often occur in athletes. Sacral stress fracture during pregnancy and postpartum period is also a very rare entity. The possible mechanism blamed for sacral fractures of pregnancy and postpartum period is overloading during pregnancy and transient weakening of the bones seen in pregnancy. The differential diagnoses of fractures due to fatigue and or insufficiency is very difficult. Bone mineral density measurement was reported to be a helpful tool in this differentiation. A normal bone mineral density measurement with a very low 25-hydroxy vitamin D level gives an impression of weakness of the sacral bone related to very low 25-hydroxy vitamin D level (3-5).

The incidence of pregnancy-related osteoporosis is approximately 0.4/100.000 women.

The increased need for calcium, increased levels of progesterone and prolactin hormones, breast feeding besides mechanical changes such as the relaxation of pelvic and sacroiliac ligaments with increased relaxin, weight gaining, hyperlordotic posture, and sacral anterversion were all accused as the contributing factors for pregnancy-related osteoporosis. (6-8).

Generally, main clinical complaint of the patient is pain at low back, at the buttocks and sacroiliac joint. Pain usually worsens while standing and walking. Radicular symptoms are uncommon but may be present. Our patient had radicular pain pattern may be due to secondary nerve root compression or irritation. Denis et al. (9) classified the sacral fractures in two anatomic zones. Fractures of zone 1 involves ala of sacrum which could cause L5 root compression. L5 nerve root may be entrapped between L5 transverse process ala of sacrum. It has been estimated that 2% of sacral fractures present with radicular symptoms. Our case had a zone 1 alar stress fracture and had radicular symptoms (9). Why because radiography is generally normal, MRI is the best imaging method for these patients, which shows a typical fracture line including a vertical direction and edema surrounding the fracture. Our case also had a typical vertical fracture line (10).

The treatment options of the sacral stress fracture in pregnancy and postpartum period is limited and conservative treatment was generally chosen. If patient was diagnosed during pregnancy cesarean section should be preferred instead of spontaneous vaginal delivery that may worsen the sacral fracture. The case we presented here did not have a history of low back pain during pregnancy and just after the delivery. She had an uncomplicated spontaneous vaginal delivery and the role of it for sacral stress fracture is undetermined (10,11).

This case is among the very few cases reported in the literature describing the sacral stress fracture in the postpartum period. Sacral stress fracture should be kept in mind in patients with low back pain during pregnancy and postpartum period because delays in diagnosis may cause secondary balance and skeletal system disorders. Besides, early diagnosis and appropriate treatment enhance the success of the treatment.

## Ethics

**Informed Consent:** It was taken.

**Peer-review:** Internally peer-reviewed.

## Authorship Contributions

Concept: S.B., A.Y.K., Design: S.B., A.Y.K., Data Collection or Processing: S.B., Analysis or Interpretation: S.B., A.Y.K., Literature Search: S.B., Writing: S.B., A.Y.K.

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