



Neglected Femoral Neck Fracture Associated with Pregnancy: Case Report

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ABSTRACT

Transient osteoporosis is a self-limiting condition mostly seen in third trimester of pregnancy. MRI is a noninvasive method for the diagnosis of transient osteoporosis in pregnancies with hip and pelvic pain. We present a 28-year-old primipar with a 3-month history of left hip pain one month after delivery. Garden type 3 fracture was detected. The patient underwent intertrochanteric valgus osteotomy and osteosynthesis. Twenty months of follow-up did not reveal any complications such as nonunion or AVN. In the case of hip pain in pregnancy, the diagnosis of transient osteoporosis with MRI can be made early and more serious complications can be avoided. Successful results can be obtained with intertrochanteric valgus osteotomy in the treatment of neglected femur neck fracture in young patients.

Keywords: Transient osteoporosis, femur neck fracture, intertrochanteric valgus osteotomy

INTRODUCTION

Transient osteoporosis during pregnancy is a rare condition, and it generally restricts movement (1). It often develops in the final trimester or during the postpartum period (2). Although it is more frequently observed in the hip, it can also be observed in the vertebra, knee, and acetabulum (2, 3).

Transient osteoporosis is characterized by inguinal pain without a history of trauma. Magnetic resonance imaging (MRI) is used for diagnosing transient osteoporosis because direct radiography should be avoided during pregnancy and is insufficient for evaluating osteopenia (3, 4). In T1 sequences, decreased signal intensity area compared to normal spongy bone is observed. In T2 sequences, high-intensity signals occur (5). Partial load-bearing, analgesics, and non-steroidal anti-inflammatory drugs can be used for treating transient osteoporosis (1).

Femoral neck fractures associated with transient osteoporosis are rare and often related to trauma. Patients with these generally present to hospitals late, thus making treatment more complicated (3).

This study aimed to demonstrate that transient osteoporosis should be considered in the differential diagnosis of hip pain continuing during pregnancy and that successful outcomes can be obtained in neglected femoral neck fractures through valgus intertrochanteric osteotomy.

CASE PRESENTATION

A 28-year-old primiparous mother was admitted with complaints of inability to walk for about 3 months and left hip pain in the first month postpartum. The patient had no history of trauma and systemic disease. During an examination, the left hip was slightly in external rotation and hip movements could not be evaluated due to pain. No abnormal finding was found in the neurological and vascular examinations. Direct radiological evaluation of the patient revealed a Garden type 3 femoral neck fracture (Figure 1). It was considered that the fracture might have been associated with transient osteoporosis because the patient had no history of trauma and no hip pain during the last days of pregnancy and because radiography revealed osteopenia around the hip joint.

MRI was performed for evaluating femoral head vitality (Figure 2). It was considered that the femoral head protected its vitality, and valgus intertrochanteric osteotomy was planned and performed. Fixation was provided with a 135° wedged plate (TST, İstanbul, Turkey) (Figure 3).

No intraoperative and postoperative complication developed. The patient was discharged from the hospital on the fourth postoperative day. The patient was warned about bearing no load. Weight-bearing was allowed when radiological and clinical fracture healing was observed in the third postoperative month. In the follow-up after 20 months, it was detected that she had no pain and that there was full range of motion. No avascular necro-





Figure 1. Preoperative pelvic AP graph

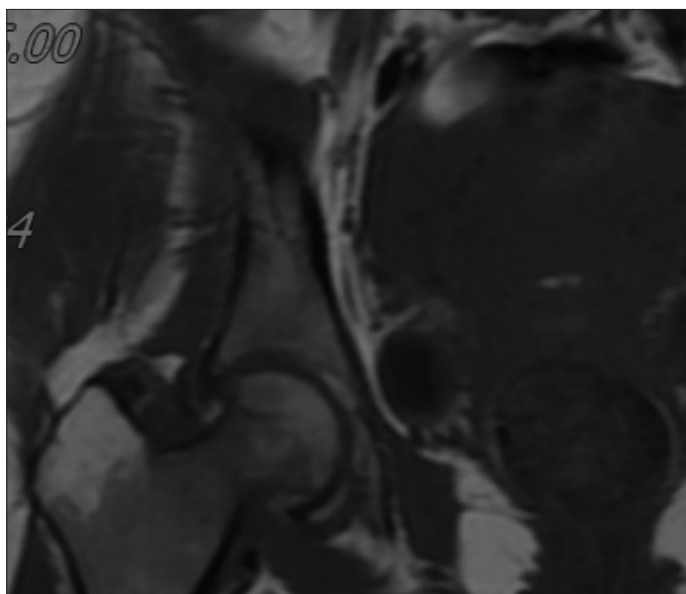


Figure 2. Preoperative magnetic resonance image of the left hip

sis was radiologically found (Figure 4). Written informed consent was obtained from the patient.

DISCUSSION

During pregnancy, musculoskeletal disorders are frequently seen because of increased body weight, increased load on the musculoskeletal system due to reasons such as the position of the uterus, and laxity associated with hormonal changes (4). Hip pain is commonly experienced in parturients, and transient osteoporosis, osteonecrosis, and pubic symphysis should be considered in the differential diagnosis.

Transient osteoporosis is generally encountered in primiparous parturients in the final trimester, and it often affects the hip (5). The mostly common mechanism is tissue ischemia and microvascular injury causing bone marrow edema (6). Patients with

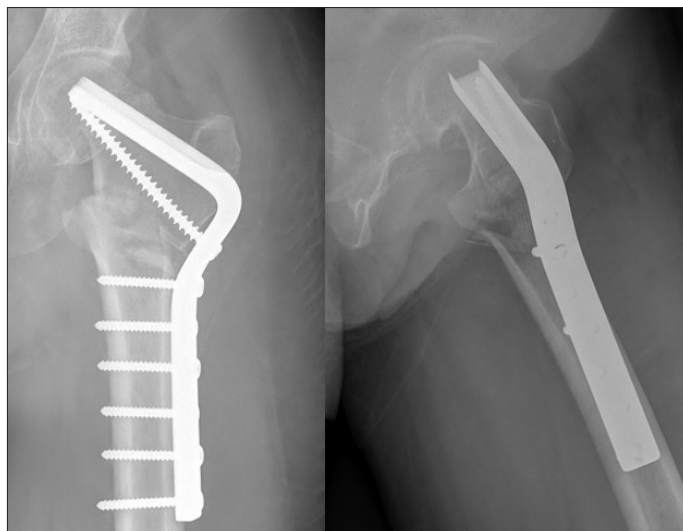


Figure 3. Postoperative graphs



Figure 4. Graph at the 20th postoperative month

transient osteoporosis generally spontaneously recover in 6–12 months (7). Patients with transient osteoporosis present with hip pain in the first phase of transient osteoporosis. Then, at the second phase, pain increases. Radiologically, joint spacing is normal, but osteoporosis is detected. Recovery is observed in the third phase.

In the first phase of transient osteoporosis, radiographies do not help make a diagnosis. Because exposure to ionizing radiation is avoided during pregnancy, imaging can be postponed in these patients. This may cause fractures due to insufficiency to be overlooked (8). MRI is the best non-invasive diagnostic technique in parturients with hip pain (6). During MRI, diffuse lesions giving a hypointense signal in T1 sequences and a hyperintense signal in T2 sequences are observed (6). With transient osteoporosis being identified through MRI performed in the early period, major surgical interventions are not required and complications are prevented (6).

In the literature, femoral neck fractures associated with transient osteoporosis are very rare among parturients (9). Al-

though they are generally unilateral, bilateral cases have also been reported (2).

In young patients, osteosynthesis of neglected femoral neck fractures is difficult and it has a high risk of avascular necrosis (10). Valgus intertrochanteric osteotomy converts femoral neck forces from shear to compression in these patients (10). Valgus intertrochanteric osteotomy protects the bone stock and has successful outcomes in young patients (10).

CONCLUSION

Hip pain is a frequently seen complaint during pregnancy, and transient osteoporosis should be kept in mind. MRI is a reliable method for diagnosing transient osteoporosis. In young patients, successful outcomes can be obtained with valgus intertrochanteric osteotomy for treating neglected femoral neck fractures.

Informed Consent: Written informed consent was obtained from patient who participated in this study.

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