

A rare case of femoral neck fracture due to minor trauma in young adult

Genç erişkinlerden minor tramvaya bağlı gelişen ve nadir görülen bir femur boyun kırığı vakası

Ali Kemal Erenler^a, Latif Duran^{*b}, Ömer Faruk Sekreter^a

^a Department of Emergency, Çorum State Hospital, Çorum, Turkey

^b Department of Emergency Medicine, Ondokuz Mayıs University, Samsun, Turkey

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* Correspondence to:

Latif Duran

Department of Emergency
Ondokuz Mayıs University,
Samsun, Turkey
e-mail: lduran@omu.edu.tr

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ABSTRACT

Neck of femur fractures are the second most common fractures in elderly. They usually occur due to high energy trauma or in the elderly with concomitant diseases. In this report, we represent you a case of neck of femur fracture after a minor trauma in a young patient with no concomitant disease whose neck of femur was migrated into the pelvis.
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ÖZET

Femur boyun kırıkları yaşlılarda ikinci en sık görülen kırıklardandır. Genellikle ek hastalığı olan yaşlılarda yüksek enerjili travmaya bağlı olarak gelişir. Bu çalışmada, sizlere ek hastalığı olmayan genç hastada minör travma sonrası gelişen femur boyun kırığına bağlı pelvise doğru yer değiştiren femur boynu vakasını sunduk.
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1. Introduction

Neck of femur fractures are the second most common fractures in elderly population and there are more than 250.000 hip fractures annually in the US. This number increases as population ages and an estimated 15% of the population will have proximal femur fracture by the age of 80 years (Melton, 1993; Rubin and Farber, 1999; Rudman and McIlmail, 2000; Maini et al., 2004). Neck of femur fractures are commonly seen among older adults, most often because of osteoporosis and are rare among the younger population. In younger pa-

tients, the high kinetic energy sustained in the major trauma causes a fracture through normal bone with marked soft tissue disruption and comminution (Steele and Ellison, 2004). Imaging for detection of neck of femur fractures begin with plain radiography, however due to frequency of occult fractures computed tomography (CT), bone scanning and magnetic resonance imaging (MRI) may also be needed (Cannon et al., 2009). In this article, we represent you a case of head of femur migration into pelvis with hip and iliac wing fracture due to minor trauma.

2. Case

A 43-year-old female patient presented to Emergency Department due to pain on hip and difficulty in walking after hitting a heater-stove 3 days ago. She had a history of anemia. On the physical examination, left leg movements were painful and limited. There was an ecimotic area of 3×6 cm on the left iliac wing reaching to lateral femur and abdomen. Examination of other systems and vital findings were normal. Laboratory findings were as follows: glucose; 155 mg/dl, AST; 70 U/L, ALT; 80U/L, Hgb; 8.8 g/dL, Hct; 27.8%. Coagulation tests were normal. An abdominal ultrasound was performed and was normal. A plain pelvis and hip radiography was performed in order to determine a possible fracture. On X-ray, a fracture on left iliac wing and neck of femur was determined, but it was difficult to determine the location of the displaced head of femur (Fig. 1).

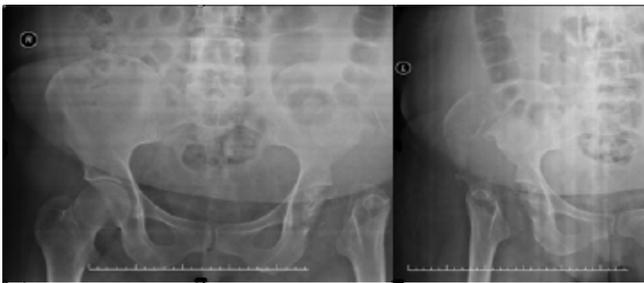


Fig. 1. Plain X-ray of the pelvis and left hip demonstrating the fractures of the iliac wing and femur neck.

To determine the exact severity of the fracture a CT and 3D CT was performed. After radiological evaluation of the CT images it was determined head of the left femur was displaced at the level of neck and migrated into superior pelvis. Also there was a fragmentary fracture on left iliac wing (Fig. 2, 3).

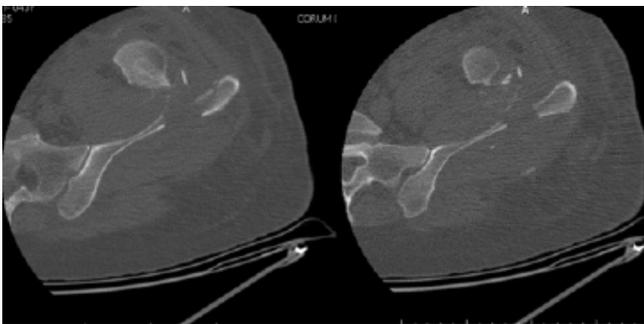


Fig. 2. Computerized tomography image of the left hip. The head of femur displaced superiorly.

A consultation with orthopedic surgeon was performed and the patient was referred to an advanced center in order to have implant surgery.

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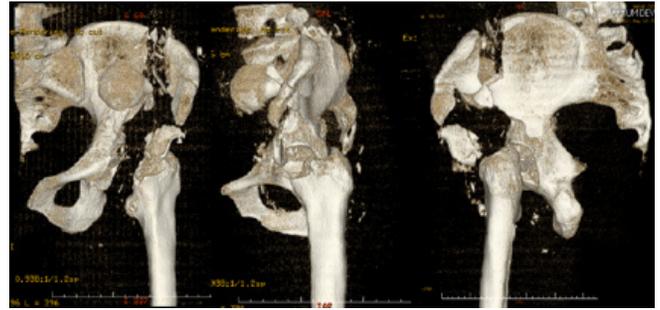


Fig. 3. 3D computerized tomography image demonstrates the displaced femur head located into the pelvis.

3. Discussion

Neck of femur fracture with hip dislocation is a rare injury. Management of femoral neck fractures itself can be challenging problem. With an associated hip dislocation, the situation can be more complex (Tannast et al., 2009). Neck of femur fractures are commonly seen in older adults that have concomitant diseases such as osteoporosis (Steele and Ellison, 2004). In addition to advanced age and osteoporosis, other factors that weaken bone include smoking, inactivity, rheumatoid arthritis, post-gastrectomy syndrome, and a low percentage of body fat, poor calcium intake, excessive alcohol intake, and endocrine disorders such as diabetes, hyperthyroidism, hyperparathyroidism, and hypercortisolemia (Koval and Zuckerman, 2000). In younger adults femoral neck fractures occur after major trauma (Steele and Ellison, 2004). In our case, according to anamnesis, the patient hit a heating stove with hip and did not even fall from standing height. Such a minor trauma is not likely to cause a fracture. Besides, the patient had no risk factors that weaken bone. Radiographic evaluation is essential in any patient suspected of having a neck of femur fracture. The standard anteroposterior view should have the patient maximally internally rotated to best demonstrate the femoral neck. If there is any concern that the patient has sustained a fracture that is not visible on the initial x-ray examination, the patient should be conservatively treated and x-ray films should be made again in 10 to 14 days; or the physician may order a CT or MRI, which demonstrates the fracture in most instances (Steele and Ellison, 2004). In our case, when plain radiograph was evaluated, the fracture of the neck and iliac wing was visible but dislocated femoral head was almost invisible. A CT and a 3D CT were performed to identify the location of the femoral head. On CT, femoral head was visualized on the superior region of the pelvis. An orthopedic surgery consultation was performed and the patient was referred to an advanced center to have surgery.

Although neck of femur fractures with dislocation due to minor trauma occur rarely in young adults, emergency physicians must be aware of serious injuries. Advanced imaging techniques may be used in order to clarify the severity of the damage.

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