

SPOR YARALANMASI SONRASI KÜÇÜK TROKANTERIN IZOLE AVÜLZİYON KIRIĞI: VAKA SUNUMU

Isolated Avulsion Fracture of the Lesser Trochanter After Sports Injury in an Adolescent: A Case Report

Mert KARADUMAN¹, Murat AYDIN², Hakan KINIK³

ÖZET

Amaç: 14 yaşında erkek futbol maçı sonrası geçirdiği minör bir travmayla kalçada fleksiyon kısıtlılığı ve kasık ağrısı ile acil servise başvurdu. Fizik muayene ve radyolojik inceleme ile izole küçük trokanter avülzyon kırığı tanısı konuldu. Yatak istirahati ve NSAID tedavi ile başarılı bir şekilde tedavi edildi. İzole küçük trokanter kırıklarında travma öyküsü yok ise patolojik primer veya seconder tümöral oluşum araştırılmalıdır bundan dolayı Küçük trokanter kırıklarında kırığın ayırıcı tanısında en önemli dikkat edilmesi gereken nokta patolojik kırıkla ayırımı yapmaktır. Burda takdim edilen vaka 14 yaşında erkek hastada travmatik bir yaralanma sonrası oluşan izole küçük trokanter kırığı ve başarılı bir şekilde tedavi edilmesidir.

Anahtar Sözcükler: *Kırık; Femur*

ABSTRACT

Objectives: A 14 years old boy with loss of hip flexion and groin pain after a minor trauma in a soccer game was admitted to our emergency department. After physical examination and radiological evaluation, the diagnosis was an isolated avulsion of the lesser trochanteric apophysis. He was successfully treated with bed rest and NSAID treatment. When the absence of a traumatic event, an isolated fracture of the lesser trochanter should suggest an underlying pathological process, particularly a primary or metastatic tumor because of that differential diagnosis from pathological fracture of the lesser trochanter is the most important aspect in these injuries. We present here a 14 years old boy after a traumatic injury with isolated lesser trochanteric fracture and his treatment.

Keywords: *Fracture; Femur*

¹Department of Orthopedics and Traumatology, Hand and Upper Extremity Surgery Division, Necmettin Erbakan University School of Medicine, Konya, Turkey

²Department of Orthopedics and Traumatology, Afyonkarahisar, Turkey Afyonkarahisar Suhut Public Hospital Medicine, Afyonkarahisar, Turkey

³Department of Orthopedics and Traumatology, Ankara University School of Medicine, Ankara, Turkey

Mert KARADUMAN, Uzm. Dr.
Murat AYDIN, Uzm. Dr.
Hakan KINIK, Uzm. Dr.

İletişim:

Murat AYDIN MD.
Department of Orthopedics and Traumatology, Afyonkarahisar, Turkey
Afyonkarahisar Suhut Public Hospital Medicine
Tel: +905324528559
e-mail:
opr.murataydin@gmail.com

Geliş tarihi/Received: 11.08.2016
Kabul tarihi/Accepted: 08.02.2017

Bozok Tıp Derg 2017;7(2):77-9
Bozok Med J 2017;7(2):77-9

INTRODUCTION

The epiphysis of the lesser trochanter appears between the eleventh and thirteenth years and fuse to the shaft about the eighteenth year of life. Flexion movement at the hip joint whether of the thigh on the trunk or of the trunk on the thigh, is performed by the iliacus and psoas magnus (1). These powerful muscles could avulse the lesser trochanter of femur from the shaft with strenuous hip flexion during sports activities (2). Physiological condition of the patient, age and additional diseases determine surgical or other non surgical treatments in the fractures of femur (3).

Avulsion of the lesser trochanter is an uncommon injury, Jonasch (1965) reported only two cases among 1 million injures. Prior to 1908, there appeared four reports, the earliest being that of Brunelle in 1854. Strong muscular contractions do not uncommonly produce fractures of bone. An avulsion the lesser trochanter of the femur belongs to this class and because of the rarity of this lesion we have reported the following case. In adolescents, the lesser trochanter is usually avulsed by the tendon of psoas major during sports activities (2). In adults, isolated fractures of the lesser trochanter are usually pathological due to invasion of the proximal femur by metastatic tumors (1,4).

CASE REPORT

A 14 years old schoolboy was admitted to our emergency department, suffering of pain in the right hip after a fall during a soccer game. He had stopped suddenly in the game and tried to keep his body upright, and then felt a severe pain in the right hip. He was not able to flex his right hip actively but passive movement of the hip could be done if performed slowly and carefully. Inability to flex the hip while sitting i.e. Ludloff's sign was positive which is pathognomonic for complete tear of iliopsoas muscle or avulsion of the lesser trochanter.4 He had also a localized point of tenderness over the lesser trochanter. A plain hip X-ray revealed an avulsion of the lesser trochanter (Figure-1). To rule out any associated injuries and a pathological fracture, a computerized tomography was also done and reported as no other associated lesions. He was just treated with bed rest in a neutral hip position for 4 weeks. One month later the patient had full return of function in the injured limb.



Figure 1-1, 1-2 First application to hospital demonstrates trochanter minor fracture on x-ray. 1-3 the visualization of avulsed trochanter minor in computed tomography. 1-4 After three months follow up, the visualization of avulsed trochanter minor in x-ray. 1-5 After six months follow up, the visualization of avulsed trochanter minor in x-ray on x-ray * Photos were taken under informed consent of patient

DISCUSSION

In the absence of a traumatic event, an isolated fracture of the lesser trochanter should suggest an underlying pathological process, particularly a primary or metastatic tumor. These patients are mostly adults, in whom pain was insidious in onset, and usually had no history of trauma (5,6). In patients between the ages of seven and eighteen years, an avulsion fracture of the lesser trochanter is usually secondary to vigorous activity during sports. These adolescent patients have open epiphyses that were susceptible to injury until the fusion of the lesser trochanteric apophysis. In these young children, clinical recovery following symptomatic treatment was rapid even with marked proximal migration of the avulsed segment of the lesser trochanter. Immobilization of the limb is the recommended way to have a good functional result for the hip. In the literature, immobilization of the hip in a forty five to sixty degree position of flexion with a hip spica plaster cast was reported with a success (6). Although we recommend the patient to rest in neutral hip flexion, he has no functional deficit both in terms of muscle power and hip range of motion in the follow-up.

In the management of avulsion fractures of the lesser trochanter; the mechanism of injury, age, previous medical history and the shape of the lesser trochanteric fragment on radiographs would help us to distinguish between the isolated avulsion of the apophysis and the pathologic fracture. After bed rest, good function is expected in the adolescents isolated lesser trochanteric avulsion injuries.

Conflict of interest; none

REFERENCES

1. Dimon JH. Isolated fractures of the lesser trochanter of the femur. Clin Orthop 1972; 82:144-8.
2. Balensweig I. Traction fractures of the lesser trochanter. J Bone Joint Surg Am 1924;3:696-703.
3. Bilgetekin YG, Ramazan A, Çetin I, Osman T, Murat B. Multiple Cannulated Screws in the Treatment of Femoral Neck Fractures. Bozok Tıp Dergisi 2013; 3 15-20.

4. Bertin KC, Horstman J, Coleman SS. Isolated fracture of the lesser trochanter in adults: an initial manifestation of metastatic malignant disease. J Bone Joint Surg Am 1984; 66:770-3.
5. Schlueter SA. Avulsion of the lesser trochanter. J Bone Joint Surg Am 1926; 8 :766-8.
6. Afra R, Boardman DL, Kabo JM, Eckardt JJ. Avulsion fracture of the lesser trochanter as a result of a preliminary malignant tumor of bone. A report of four cases. J Bone Joint Surg Am 1999;81:1299-304.