

Avulsion fracture of the trochanter minor in the adolescent

Michael Memminger

Department for Orthopaedics and Traumatology, Montebelluna, Castelfranco Veneto

Summary. In the adolescent, the trochanter minor fracture occurs in pathological traction of the iliopsoas tendon, the minor fragment dislocates cranially. The therapy is conservative, the fragment remains dislocated cranially, where it heals with the femur. A limited hip function in terms of impingement symptoms is not known. We present the case of a 14-year-old boy: the lesion occurred during sports activities (running) through hyperextension and rotation trauma. The treatment was conservative, functional limitations did not remain. (www.actabiomedica.it)

Key words: avulsion fracture trochanter minor

Introduction

In the adolescent the lesser trochanter represents the apophysis of the iliopsoas tendon attachment and has not completely fused with the rest of the femur. The avulsion fracture of the trochanter minor is caused by a pathological traction of the iliopsoas tendon. After the avulsion fracture, the minor fragment dislocates cranially. This is a rare injury; a physician will encounter almost 1-2 injuries of this type during his clinical career; the question is how to treat correctly this lesion. There are relatively few publications in the literature that describe a trochanter avulsion in adolescents. The largest case series is described by the Pediatric Hospital in Philadelphia with 36 cases in 10 years (1). All fractures occurred during sports activities. The mean age of this patient series was 13.7 years (9-17 range). Therapy was always conservative, no problems were described. Theologis describes 3 cases; in one, the fracture hasn't healed after 3 years (2).

Case description

G.J., a 14 year old boy in good clinical state. Pre-existing diseases were not known. The boy presented

at our department with acute pain in the left groin, occurred after sport activities (running). Trauma was hyperextension of the left hip together with rotation of the leg. Lifting up the left straight leg caused acute pain in the groin. The passive function of the left hip was painfully limited. The x-ray of the left hip showed the avulsion fracture of the lesser trochanter (Figure 1). The trochanter minor was about 2 cm cranially dislocated. The treatment was conservative: restriction of active lifting of the leg, walking with crutches and partial weight bearing for about 4 weeks, then progressive weight bearing and full weight bearing after 2-3 weeks. X-ray exam after 1 year (Figure 2) shows: healed trochanter minor in a slightly cranial dislocated position. The patient is painless and without function restriction, he has reached the same function as before the avulsion fracture happened.

Discussion

The trochanter minor avulsions in the adolescent described in the literature occurred during sports activities. The treatment was always conservative. Limited hip function after healing of the fracture was not described. Healing of the lesser trochanter resulted in



Figure 1. Avulsion fracture of the left trochanter minor, cranially dislocation

hypertrophy and fusion in a slightly cranial dislocated position (1,2). Our patient was 14 years old, the minor rupture occurred during sports due to hyperextension of the left hip during rotation. The dislocation remained at about 2 cm, the minor healed in a slightly cranial position. The treatment was conservative: protection of the left hip (partial weight bearing) and avoiding active hip flexion (starter function of the ileopsoas) for 6 weeks. After 3 months, the patient was symptom

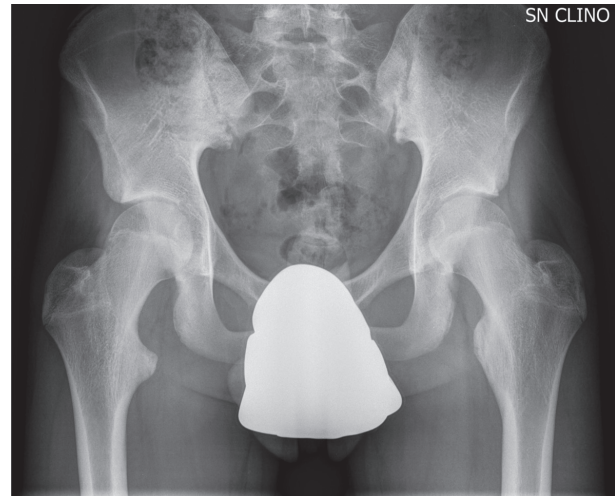


Figure 2. After healing, absence of functional limitations

free. Complaints were not observed even during sport activities, the hip function was unlimited, absence of impingement symptoms. This rare fracture heals easily conservatively in about 6-8 weeks. The slightly cranially dislocated position does not cause functional impairment of the hip. Whether the cranial displacement can lead to secondarily extra-articular impingement of the hip can not be decided so far.

References

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Correspondence:

Dr. Michael Memminger

Via Togliatti 1 - 31044 Montebelluna

E-mail: memminger@hotmail.com