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CASE REPORT

Femoroacetabular impingement caused by an osteochondroma of the pubic ramus

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KEYWORDS

Hip;
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Abstract

Introduction: Hip pain in young adults may be caused by multiple factors. One of these may be femoroacetabular impingement.

Case report: We present the case of a 28-year-old amateur cyclist male with pain in the right hip refractory to conventional analgesic treatment. Initial radiological study was normal and MRI showed diffuse edema in the periacetabular region, suggestive of a sarcomatous lesion. A 3D CT-scan demonstrated the existence of an osteochondroma in the anterior wall of the cup, which led to femoroacetabular impingement.

Conclusion: After resection of the tumor the patient remains asymptomatic 6 years from surgery.

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PALABRAS CLAVE

Cadera;
Osteocondroma;
Atrapamiento
femoroacetabular

Atrapamiento femoroacetabular por osteocondroma de rama iliopubiana

Resumen

Introducción: El dolor de cadera en el adulto joven puede tener diversos orígenes. Una de estas causas puede ser el atrapamiento o choque femoroacetabular.

Caso clínico: Presentamos el caso de un varón de 28 años, ciclista aficionado, con dolor en la cadera derecha resistente a tratamiento analgésico convencional. El estudio radiológico inicial era normal y la resonancia magnética reflejaba un edema difuso en la región periacetabular, sugestivo de lesión sarcomatosa. Un estudio mediante tomografía computarizada tridimensional demostró la existencia de un osteocondroma en la pared anterior del cotilo, que condicionaba un atrapamiento o choque femoroacetabular.

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Conclusión: Tras la resección de la tumoración el paciente permanece asintomático, tras 6 años de seguimiento.
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Introduction

Hip pain in young patients is a subject of increasing for orthopedic surgeons. Apart from well-known entities like hip dysplasia, avascular necrosis or the sequelae of acetabular fractures, the possibility of femoroacetabular

impingement¹⁻³ must be considered when a non-elderly patient presents with coxalgia.

Clinical case

We present the case of a 28-year-old male amateur cyclist who consulted for progressive pain in the right hip. The pain, which had appeared for the first time 7 months before, occurred mainly during cycling training and, in the last few weeks, during the night. At physical examination, the symptoms were brought on by forceful maneuvers involving flexion plus adduction plus internal rotation. There were no inguinal masses and range of motion was unaffected. Harris Hip Score (HSS)⁴ was 64 points over 100.

Simple radiological study did not show any alterations (fig. 1). Therefore a magnetic resonance (MR) study was performed, which showed a large edema in the anterior acetabular area affecting the pelvic bone and the adjacent musculotendinous structures (iliopsoas). On this basis, a first diagnosis of aggressive lesion (bone sarcoma, metastasis or pelvic osteomyelitis) was made (fig. 2).

Subsequently a tridimensional computerized tomography (CT) was performed to complete the study, which showed a hook-shaped osteochondroma in the anterior acetabular wall. The surrounding edema was justified by repetitive impingement between the osteochondroma on the femoral



Figure 1 Plain film showing no significant alterations.

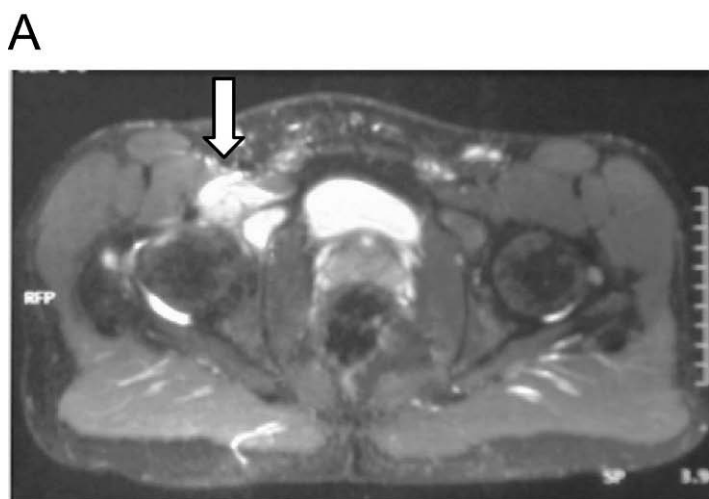


Figure 2 (A) and (B) Magnetic resonance images showing inflammatory signs affecting the acetabular bone and surrounding soft tissues (arrows), which were initially interpreted as suggesting a malignant pathology.



Figure 3 Computerized tomography images (A), (B) and (C), showing an osteochondroma in the right iliopubic ramus of the pelvis justifying a diagnosis of impingement between the femoral head and the acetabulum as well as bone and soft tissue edema resulting from the impingement.

head and by friction of the surrounding soft tissues during hip flexion. No radiological sign of destructive or malignant lesions in the bone was observed (fig. 3).

We performed a direct anterior approach on the osteochondroma, distal to the inguinal ligament, and observed that during the impingement test (flexion+adduction+internal rotation) an impact occurred between the exostosis and the femoral head^{2,3}. A small notch had been cut in the cartilage of the superoanterior region of the femoral head. We resected the neoplasm at its base and saw that the mechanical impingement between the 2 structures disappeared. The pathological study confirmed a diagnosis of osteochondroma. The patient went back to cycling and his activities of daily living within 3 weeks. After 6 years' follow-up, the patient remains asymptomatic, with a Harris Hip Score⁴ of 100 points over 100.

Discussion

Hip pain is a frequent condition in the practice of an orthopedic surgeon. It generally appears in elderly individuals in association with degenerative processes (coxarthrosis). Coxalgia in young patients (under 40 years of age) is, however, a rare occurrence. Historically, the most common diagnoses have been hip dysplasia, avascular necrosis of the femoral head and the sequelae of acetabular fractures, although there is still a group of patients where the origin of pain cannot be determined.

There is increasing interest in femoroacetabular impingement as a potential cause of hip pain in young adults^{2,3,5-9}. There are two types of femoroacetabular impingement: the cam type, due to morphological alterations in the head-neck region, and the pincer type, caused by acetabular abnormalities, the most usual of which is a retroverted acetabulum⁹.

According to the initial radiographs and the TC-scan, our patient did not present with alterations in the proximal femur. What caused the femoroacetabular impingement was an anomaly in the anterior region of the acetabulum, in the iliopubic ramus, i.e. an osteochondroma (whose presence in the acetabulum is truly exceptional)¹⁰, which provided excessive anterior coverage⁹. For this reason, we present this case as one of atypical pincer type femoroacetabular

impingement, due to a abnormality that –to the best of our knowledge - has not been so far reported in the medical literature.

Conflict of interests

The authors have declared that they have no conflict of interests.

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