A 30-year-old man presented with pain and limitation of movement of the right hip. The symptoms had failed to respond to conservative treatment. Radiographs and CT scans revealed evidence of impingement between the femoral head-neck junction and an abnormally large anterior inferior iliac spine. Resection of the hypertrophic anterior inferior iliac spine was performed which produced full painless restoration of function of the hip.

Hypertrophy of the anterior inferior iliac spine as a cause of femoro-acetabular impingement has not previously been described.

Femoro-acetabular impingement is currently considered to be one of the causes for progressive degenerative damage to the articular cartilage of the hip producing osteoarthritis. It has been attributed to structural abnormalities involving both the acetabulum and femoral head-neck junction. Repeated impingement between the anterior femoral head-neck junction and anterior aspect of the acetabulum has been shown to lead to not only chronic groin pain but also dysfunction of the hip joint, especially in young active patients in whom arthroscopic treatment might be appropriate.

However, impingement between the femoral head-neck junction and an abnormally hypertrophic anterior inferior iliac spine has, to our knowledge, not been reported.

We report the clinical presentation, radiological and CT findings and operative treatment of a patient who was referred with groin pain.

Case report

A 30-year-old man who had been an enthusiastic football player and athlete since school age presented with a ten-year history of right groin pain. The pain was usually induced by jumping and running but could develop after prolonged walking. He had been treated with nonsteroidal anti-inflammatory drugs and physiotherapy, but without benefit.

There was no previous medical history and no history of trauma to the hip or symptoms from the lumbar spine or contralateral hip.

He weighed 71 kg and was 170 cm tall. There was tenderness in the right groin with only 90° of hip flexion and marked restriction of internal rotation. With the hip flexed to 90° with adduction internal rotation provoked severe groin pain.

The pelvic anteroposterior (AP) radiograph showed an abnormal appearance just above the anterior superior rim of the right acetabulum which extended inferiorly (Fig. 1). In addition there was an abnormality at the femoral head-neck junction and an altered offset to the right hip. The axial CT scan and a three-dimensional reconstruction revealed hypertrophy of the...
anterior inferior iliac spine with a pseudarthrosis through its base. The left hip itself was normal (Fig. 2).

Arthroscopy of the right hip showed normal cartilage on the femoral head and acetabulum and no labral damage. The hip was explored using a Smith-Petersen approach. Through the interval between the rectus femoris and the gluteus medius, the joint capsule was identified. Part of the tensor fascia lata and gluteus medius was detached from the iliac crest to enhance the display of the joint capsule. The reflected and straight heads of rectus femoris were detached from their origins and to confirm the arthroscopic findings an arthrotomy was performed. The hypertrophic anterior inferior iliac spine was noted with a pseudarthrosis at its base. Impingement occurred between the hypertrophic anterior inferior iliac spine and the anterior aspect of the femoral head/neck when the hip was flexed to nearly 90º. The hypertrophic portion of anterior inferior iliac spine was resected through the pseudarthrosis to leave a normal sized anterior inferior iliac spine which did not cause any impingement.

Post-operative CT scans confirmed that the hypertrophic part of the anterior inferior iliac spine had been satisfactorily resected (Fig. 3).

We did not advise any restriction of movement post-operatively and asked the patient to exercise gradually increasing his weight-bearing. He walked unaided two weeks after operation. He recovered 120º of hip flexion and a normal range of internal rotation. The groin pain and limp resolved at five weeks post-operatively and he returned to full normal activities.

Discussion
Femoro-acetabular impingement was first described as a syndrome in 1991⁹,¹⁰ and has been proposed as a major risk factor for the development of degenerative disease of the hip.³,¹¹

The characteristic finding is limitation of flexion and internal rotation with associated groin pain. Impingement can cause structural changes to the hip joint, including a
labral tear, acetabular cartilage damage, a decreased anterior femoral head-neck ratio and the formation of a bone cyst in the femoral neck.\textsuperscript{12,13} Although abnormalities of the anterior inferior iliac spine have been described previously we could not find any reports of associated impingement.\textsuperscript{14,15}

The anterior inferior iliac spine is the origin of the main head of the rectus femoris which is contracted in vigorous sport such as pursued by our patient. Avulsion fractures resulting from excessive stress on the anterior inferior iliac spine, a hypertrophic anterior inferior iliac spine, have been described.\textsuperscript{16-19} We suspect that the formation of a traction spur was the main reason for the hypertrophy of the anterior inferior iliac spine in our patient.

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References


