Keywords: Chondrolysis; Hip chondrolysis; Pediatric hip; Idiopathic chondrolysis; Juvenile hip; Trauma hip; Slipped capital femoral epiphysis

Introduction

Juvenile Idiopathic Chondrolysis of the hip is a devastating disease. Early identification of the disease process is sometimes challenging. Following diagnosis, there is ultimately a poor prognosis. Clinicians must be aware of this rare but devastating diagnosis, as early diagnosis may improve prognosis.

Case presentation:

An 11-year-old African American female presented to a pediatric orthopedic clinic with a 6-month history of insidious onset left hip pain. Over 6-months her pain became more severe, and limited her ability to walk. The left hip was fixed in 40-degrees flexion, 20-degrees abduction, and 30-degrees of external rotation. New x-ray findings consistent with idiopathic juvenile chondrolysis of the hip were present.

Discussion:

First described in the early 1900s, chondrolysis of the hip was initially identified in patients following slipped capital femoral epiphysis. Later, patients with no clear etiology were diagnosed. Associations with trauma, burns, infection, and prolonged immobilization have also been described. The course is variable, with an acute phase lasting 6-16 months followed by a chronic stage of 3-5 years.

Conclusion:

Idiopathic chondrolysis of the hip is a challenging diagnosis with devastating complications. Ultimately, most patients experience a spontaneous resolution of pain, develop early arthritis, and often arthrodesis.
Eight month post-injection follow up revealed great improvement in pain and the ability to ambulate without crutch assistance, but with a significant antalgic limp. The involved hip had no active or passive motion and still had a 40 degree flexion contracture, but was improved to neutral abduction/adduction, and was in 20 degrees of external rotation. 15 month follow up visit examination demonstrated a persistent 40 degree flexion contracture, atrophy to the thigh musculature, little pain with hip range of motion, and a non-antalgic gait.

Discussion

Idiopathic chondrolysis of the hip presents with an insidious, progressive onset of hip and groin pain. Pain is worse with range of motion, and eventually joint stiffness develops [1]. Patients will often ambulate with an antalgic gait [2].

Physical examination is the key to the diagnosis of idiopathic chondrolysis. Initially, patients will demonstrate the affected hip to be extended, adducted, and internally rotated [2]. This contrasts to other hip pathology including fracture, infection and joint effusion, which typically are associated with the hip in an abducted and externally rotated position. Later however, contractures will develop in an abducted, flexed, and externally rotated position [15]. Flexion contractures are more prevalent in cases of idiopathic chondrolysis as compared to patients with slipped capital femoral epiphysis [2].

Diagnosis can be made with the assistance of radiographic studies. Early in the course of illness however, no changes on x-ray may be identified. Eventually, subchondral cysts, osteopenia, and osteophytes with sclerosis may be identified [2,3]. Chondrolysis is often limited to one joint. MRI is useful, and can demonstrate pathology sooner than plain radiographs including cartilage loss, muscle atrophy, and a small joint effusion with no enhancement of synovium.

Laboratory data will likely be within normal limits. Common tests may include joint aspiration, joint biopsy, white blood-cell count, sedimentation rate, rheumatoid factor, antinuclear antibody test, HLA-B27 and CRP [2]. Intra-operative biopsies and exploration have revealed synovitis and cartilage loss [2].

Etiology

Chondrolysis of the hip was first described in the early 1900s. Initially, chondrolysis was identified in patients following slipped capital femoral epiphysis [1]. A presumed interruption in the synovial membrane of the hip joint was hypothesized to yield cartilage damage and death five to eight months following reduction of the slipped capital femoral epiphysis [1]. Subsequently, literature reviews were performed in the 1970s that documented an incidence of 1-28% of chondrolysis following slipped capital femoral epiphysis. Association with trauma and burns, infection, and prolonged immobilization have also been described. An autoimmune etiology has also been described. The initial autoimmune reaction to cartilage results in synovitis that further destroys cartilage. Patients with no clear etiology have also been
diagnosed with chondrolysis [2,3]. Idiopathic chondrolysis typically occurs in black female adolescents. There is still no consensus regarding etiology [4-12].

Treatment

Treatment of chondrolysis remains difficult, and few modalities provide adequate relief of pain for patients. Ambulation assistive devices such as crutches or a walker are often prescribed. Anti-inflammatory medications and non-steroidal anti-inflammatory medications may provide some relief. Intra-articular injections and pain pumps may be of benefit. Prevention of contractures is key to treatment, with physical therapy often prescribed. Patient compliance with range of motion and therapy is challenging due to pain with activity [2].

Time from onset of pain to adequate improvement in pain is often 6-12 months. A small portion of patients may have spontaneous resolution of pain. Long-term pain however, is typically the case. [2] Patients with a disease process that yields joint ankylosis typically have resolution of pain [2]. Eventually, tenotomy, osteotomy, hip arthrodesis or early joint arthroplasty may be required [13-15].

Conclusion

Idiopathic chondrolysis of the hip is a challenging diagnosis with devastating complications. Early clinical suspicion must remain high among clinicians. Early diagnosis is important, as early treatment with physical therapy can ensure the patient maintains flexibility and avoids contractures. Ultimately, most patients experience a spontaneous resolution of pain with early arthritis and often arthrodesis.

References