

Case Report

Idiopathic chondrolysis of hip: a case report

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ABSTRACT

Idiopathic chondrolysis of the hip is a rare condition occurring mainly in adolescents and is characterised by a rapidly progressive destruction of the articular cartilage. A male patient aged 18 years presented to us with pain in his left hip, restriction of movements, and limping due to pelvic obliquity. On examination patient had severe tenderness over left hip, fixed flexion and abduction deformity were present and all movements were painful. Radiographic imaging showed narrowing of joint space, irregular blurring of subchondral sclerotic lines and femoral neck widening. MRI scan depicts marrow changes earlier than any other imaging method. Biological markers for inflammation and infections have been studied, which was normal. To achieve mobile hip, for this patient we planned for Total hip replacement after confirming our diagnosis. Idiopathic chondrolysis of the hip is a rare clinical entity where, unfortunately, there is often a delay in diagnosis. There are characteristic clinical and radiological features but no effective therapy to arrest the disease. Until today no evidence concerning the aetiology of ICH has been presented. Therefore the treatment is mainly symptomatic. Conservative treatment focuses on pain control and preservation of joint mobility. Physiotherapy seems to be important to preserve a good range of motion. In addition most authors agree to unload the affected hip joint by means of bed rest and skin traction. Published results of surgical treatment are not conclusive and arthroplasty in young patients is controversial. There is no consensus on the treatment algorithm. Recommended surgical treatments include corrective osteotomy, bony fusion or joint arthroplasty. Awareness of the existence of this disease will lead to earlier diagnosis and management.

Keywords: Hip, Chondrolysis, Idiopathic

INTRODUCTION

Idiopathic chondrolysis is characterised by progressive destruction of articular cartilage resulting in secondary joint space narrowing and stiffness. It was first described in 1930 by Waldenstrom in the setting of slipped capital femoral epiphysis.¹ Patients report intense pain, restriction of motion and often limping due to limb length discrepancy. Etiology is unknown. Proposed theory includes nutritional abnormalities, mechanical injury, ischemia, abnormal intracapsular pressure. Chondrolysis

of the hip also has been described in association with trauma, other disorders such as infection, monoarticular arthritis and lengthy immobilization.² First Jones,³ then Duncan and colleagues⁴ and Wenger and colleagues,⁵ described chondrolysis of the hip without a definable cause.

Confirmation of the clinical diagnosis of idiopathic chondrolysis of the hip has historically relied on conventional radiography.^{6,7} Uniform Narrowing of joint space <3 mm, with Irregular blurring of subchondral

sclerotic lines and enlargement of fovea capitis femori. Radiographic findings are typically seen several weeks to months after the onset of symptoms.^{5,6} A geometric region of abnormal signal intensity centered within the proximal femoral epiphysis in a child with a painful, stiff hip accompanied by ipsilateral ill-defined adjacent acetabular bone marrow edema, mild synovial hypertrophy and little or no joint fluid are characteristic early MRI findings of idiopathic chondrolysis of the hip.⁸

CASE REPORT

An 18 year old boy came to our hospital with chief complaints of pain in his left hip for 20 days and inability to walk since 10 days. Patient gave a history of fall while walking and sustained injury to his left hip 20 days back. Following this the patient had pain over his left hip. He was able to stand and bear weight on the affected limb initially. After 10 days of fall pain increased progressively and eventually he was bedridden.

On general examination patient was moderately built and nourished with tall stature, and arm span was longer than the leg. Local examination of the left hip revealed exaggerated lumbar lordosis with ASIS at lower level, limb was in external rotation and there was apparent lengthening (Figure 1), with wasting of the gluteal and thigh muscles. Tenderness was present over the anterior joint line and trochanter was less prominent with proximal migration. He had an FFD of 30 degrees and further flexion upto 80 degrees associated with pain and spasm, fixed abduction deformity of 15 degrees (Figure 2) and 25 degrees of external rotation deformity were present. True shortening of around 1 cm confined to supra trochanteric region confirmed by the Bryant's triangle.

With these clinical findings the provisional differential diagnosis were

1. Monoarticular rheumatoid arthritis.
2. Infective arthritis (tubercular).
3. Idiopathic chondrolysis.



Figure 1: Apparent lengthening.



Figure 2: Abduction deformity.

On radiological assessment X-ray of pelvis with both hips revealed, uniform narrowing of joint space <3 mm, with irregular blurring of subchondral sclerotic lines and enlargement of fovea capitis femori (Figure 3). Femoral neck was widened compared to the right side (Figure 4). There was no lytic lesion either on acetabulum or femoral side.



Figure 3: X-ray pelvis with both hips.



Figure 4: X-ray left hip - AP and lateral views.

ESR was found to be elevated (40 mm/hour), CRP was reactive. Following investigations we suspected Arthritis probably due to Infectious arthritis, Idiopathic chondrolysis. We proceeded with CT scan of Left hip which showed uniform reduction of joint space and irregular Acetabular margins. As per radiologist advice patient was planned for MRI, which showed altered marrow signal intensity at superior aspect of femoral head and adjacent acetabulum. With reduced joint space and moderate effusion. As per radiologists opinion Features were in favour of idiopathic chondrolysis.

As the MRI showed moderate effusion, patient was planned for ultrasound guided aspiration, to rule out any infective pathology. The fluid was sent for both biochemical and histopathological assessment. Culture which was sterile and negative for Gram stain and AFB stain. Our final diagnosis was idiopathic chondrolysis of left hip. The patient was planned for uncemented total hip replacement as he wanted a stable mobile hip joint.

Patient was taken for proposed surgery and intra operatively there was destruction of articular cartilage on the femoral head (Figure 5) and there were cartilaginous changes in the adjacent acetabulum (Figure 6).

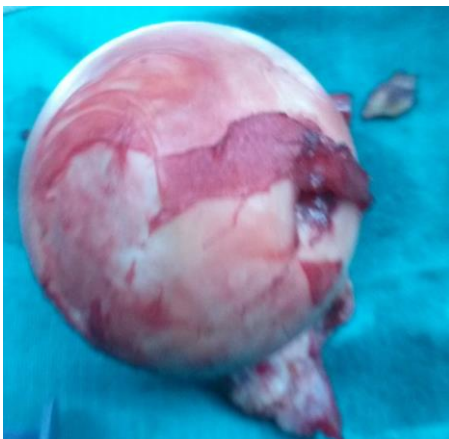


Figure 5: Destruction of articular cartilage femur head.

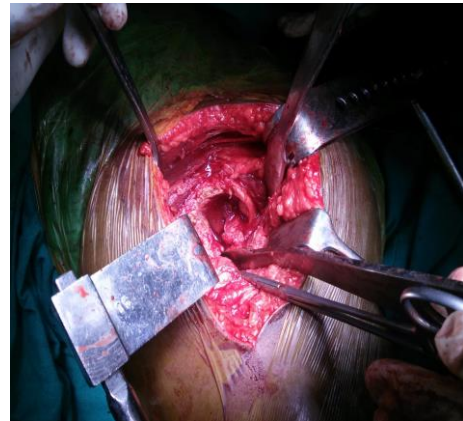


Figure 6: Acetabular changes.

The specimens were sent for biopsy. Total hip replacement was done for this patient (Figure 7). Post-operative period was uneventful. Patient was mobilized on 2nd post-operative day and sutures were removed on 10th day.



Figure 7: Post-operative THR left hip.

Clinically patient was painless with good range of movements. Biopsy revealed features consistent with focal chondrolysis of hip.

DISCUSSION

Patients affected by idiopathic chondrolysis of the hip most frequently consult because of pain in the hip and/or the knee. Radiographic assessment of the hip with anteroposterior and lateral views, compared with films of contralateral hip are essential in the diagnostic work-up.

During the evolution, the joint space can either show further narrowing, or recover partially or completely. MRI depicts marrow changes earlier than any other imaging method. The results of laboratory evaluation,

including complete blood count and WBC differential count, erythrocyte sedimentation rate, rheumatoid factor, antinuclear antibody, and human leukocyte antigen-B27 surface antigen,⁶ in patients with idiopathic chondrolysis usually are normal.

Histology of the articular cartilage consistently reveals loss and thinning of the superficial layer.⁹ Synovial biopsy reveals chronic nonspecific inflammation with perivascular infiltrates of plasma cells, lymphocytes and monocytes.^{10,11}

In general, trauma is considered to be a separate cause of chondrolysis of the hip. It is obvious that fractures and dislocations of the hip can cause direct destruction of the articular cartilage.

Until today no evidence concerning the aetiology of ICH has been presented. Therefore the treatment of this condition has been mainly symptomatic.

Trauma is a rare entity causing chondrolysis, as this patient had history of trivial fall, trauma may be considered as a cause of chondrolysis. A geometric region of abnormal signal intensity centered in the proximal femoral epiphysis, accompanied by ipsilateral ill-defined acetabular bone marrow edema, mild synovial hypertrophy, and minimal if any joint fluid, in an adolescent with a painful stiff hip are early MRI findings characteristic of idiopathic chondrolysis.⁸

CONCLUSION

Idiopathic chondrolysis of the hip is a rare clinical entity where, unfortunately, there is often a delay in diagnosis. There are characteristic clinical and radiological features but no effective therapy to arrest the disease. ICH remains a mysterious condition of unknown aetiology with deleterious effects upon a young patient's hip. Until more basic knowledge is gained about ICH, it will remain difficult to timely diagnose and accurately treat this condition.

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