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A rare case of synovial osteochondromatosis of hip managed with arthroplasty

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Abstract
Primary synovial osteochondromatosis of the hip joint is a rare condition. It is characterized by the presence of multiple intra articular loose bodies and can result in mechanical symptoms, even causing degenerative change. Surgical treatment is indicated for synovial osteochondromatosis of the hip joint. However, the optimal approaches for successful surgical management are still controversial. We report a case with primary synovial osteochondromatosis of the hip joint where hip arthroplasty treatment was performed. The posterior approach was used, and total hip replacement was performed. The follow-up duration was 3 months and 6months and one year, respectively. There were no perioperative or post-operative complications. At the latest follow-up, the patients remain symptom free with no radiographic evidence of recurrence. As recurrence rate with arthroscopy, or open excision of chondromatosis is high, and eventually it leads to destruction of joint, total hip arthroplasty achieves the goal for preventing recurrence and provide pain free joint.

Keywords: Synovial osteochondromatosis, hip joint, arthroplasty

Introduction
Synovial osteochondromatosis, also known as Reichel syndrome is a rare monoarticular synovial disorder, where tiny fronds of synovial membrane which undergo cartilage metaplasia at these tips; these tips may break free and ossify to form osteochondral bodies [1, 2, 3]. It is further subdivided into three stages by Milgram [4]. Spectrum ranges from active synovial disease without loose bodies, to transitional lesions with both active synovium and loose bodies, to a final stage consisting of multiple loose bodies without evidence of synovial disease. Although it can take place in any joint, the knee is most commonly affected, involvement of the hip joint is relatively rare [5]. Knee joint synovial chondromatosis can me managed with arthroscopy or open arthroplasty [6]. Hip involvement is however difficult to manage with arthroscopy and associated with high rate of recurrence (7 to 58) percent [7, 8, 9], and (1 to 20) percent undergo hip arthroplasty at 2 to 5 years follow up [10, 11, 12, 13].
We report a young female with multiple synovial osteochondromatosis of hip with description of their disease courses, radio graphical presentations, surgical management and follow up result.

Case report
A 24-year-old young female, who had swelling of right inguinal area with progressive pain and functional impairment of her right hip in the last 3 years, came to our hospital. to begin with she began to feel pain in right hip which was insidious in onset and slowly progressive in nature. it was associated with swelling to right inguinal area, which increased on aggravating activities. During the course of 3 years the above stated symptoms became more severe. Physical examination revealed palpable firm swelling of right inguinal area, impairment of range of motion of right hip mainly internal rotation and abduction in particular. The Harris Hip score assessment concluded to 38 points. Patient underwent radiological examination, Xray skew multiple osteochondromatosis with mild to moderate osteoarthritis of right hip joint (fig.1). To conclude the diagnosis patient underwent magnetic resonance imaging (MRI) examination. MRI skew multiple osteochondromatosis.
Interspersed inside the hip joint. Then, surgical management was decided under spinal anaesthesia. During the operation, posterolateral approach to the hip joint was taken with dislocation of femoral head for total exposure of the hip joint to debride all loose bodies and complete extrusion of synovial tissue.

Pulse irrigation and wash was given to flush out residual tissue. Osteochondromatosis were removed out of the hip joint (some small ones were sucked during the operation). The size of the loose bodies ranged from 3 cm × 3 cm × 2.5 cm to 0.2 cm × 0.2 cm × 0.15 cm (Fig.3). The right hip joint was found with moderate to severe arthritic changes and decided for total hip replacement. Post operatively Xray was taken which skew total complete removal of the pathological tissue (fig.4). After operation, patient was rehabilitated fast. Pain was relieved and patient was mobilised on post-operative day 3 with complete weight bearing and minimal pain. 10 days later patient was dismissed from the hospital. After 1 and 3 months,6 months and 1 year postoperatively, the patient came for follow up, patient was able to walk without support and complete weight bearing with slight limping but painless gait. She could walk, run slowly and could not squat.

About 12 months later, the patient came again. She could walk without limp and no further complain of pain. She could do her daily activities with permissible ROM associated with Total Hip Replacement. X ray was done skew normal right hip with implant in situ.

Fig 1: Multiple osteochondromatosis with moderate degenerative osteoarthitis

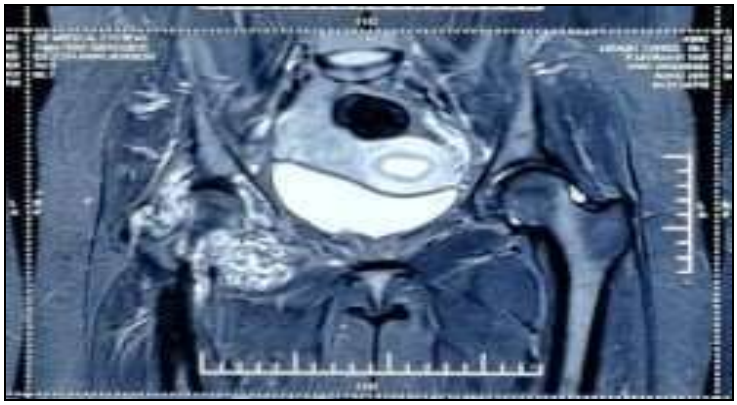

Fig 2: Magnetic resonance imaging skew synovial osteochondromatosis inside hip joint

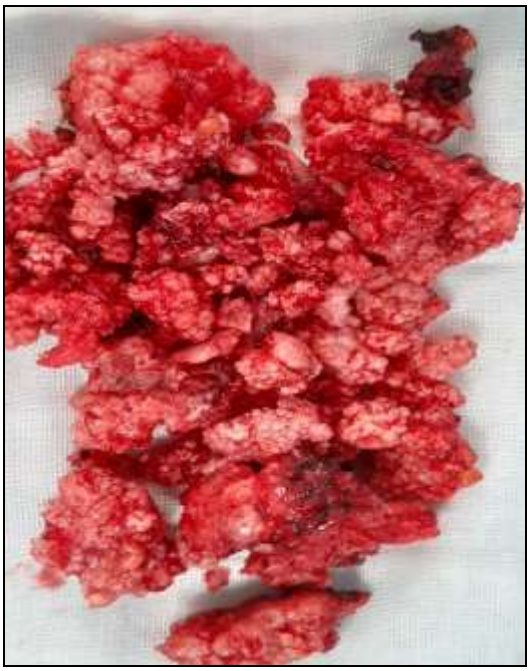

Fig 3: Osteochondromatosis were removed joint from hip joint

Fig 4: Post-operative radiography shews hip with implant in situ

Fig 5: x ray after 12 months follow up

Fig 6: Clinical picture showing patient mobilized and full weight bearing

Discussion

Primary synovial osteochondromatosis of the hip joint, is a rare benign condition characterised by multiple intra articular and extraarticular osteochondral loose bodies and synovial proliferation and hyperplasia, which may result in mechanical symptoms and degenerative osteoarthritis. Synovectomy and loose bodies removal through open operation [1, 5, 6] or arthroscopy [7, 8] is a reliable method that can relieve symptoms. Pre-operative MRI is effective tool in deciding the extend of involvement and, the presence of effusion, synovial proliferation and hypertrophy, the condition of articular cartilage [9, 10].

On the basis of extend and location of osteochondromatosis in MRI, surgical management can be planned. For patient with only extra articular involvement arthroscopic technique is suitable. But in patient with multiple osteochondromatosis with arthritic changes, open surgery remains more effective valve then arthroscopy. The decision of arthroplasty should be taken both pre-operatively and intraoperative. It has been noted that patient who underwent tissue removal without arthroplasty have higher chances of recurrence, underwent revision surgery with arthroplasty. To our knowledge, the quality of hip synovial osteochondromatosis and surgical management undertaken has never been reported.

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