

BAKERS CYST WITH PRIMARY SYNOVIAL OSTEOCHONDROMATOSIS OF KNEE JOINT- A RARE CASE REPORT

Mohd. Zeeshan Vasif¹, Syed Sadath Hussain², Rajshekhar³

¹Junior Resident, Department of Orthopaedics, Vijayanagara Institute of Medical Sciences, Ballari.

²Senior Resident, Department of Orthopaedics, Vijayanagara Institute of Medical Sciences, Ballari.

³Junior Resident, Department of Orthopaedics, Vijayanagara Institute of Medical Sciences, Ballari.

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CASE PRESENTATION

A 35-year-old male presented with 6 months history of pain, swelling and restriction of right knee joint. Patient's symptoms were insidious in onset, and gradually progressed in severity. There was no history of antecedent trauma, loss of appetite and fever. Patient does not give history of any definitive treatment taken for his present complaints.

On Examination

Inspection

Swelling in popliteal fossa of size about 5*4 cms, Oval in shape, Smooth surface, No scars sinuses, Skin surrounding the swelling normal, on pulsatile, no engorged veins (Fig. 1)

Palpation

No local rise of temperature, non-tender, firm in consistency, non-mobile, ill-defined diffuse edges, extending 2cms above and below joint line, trans illumination negative, non-reducible and non-compressible, swelling disappears on flexion of knee, plane of the swelling is below muscle.

Plain X-ray of the right knee joint shows a large radio dense body behind the femoral and tibial condyle (Fig. 2) with multiple calcific dense spots.

CT Scan

Well defined heterogenous soft tissue mass in popliteal fossa with cartilaginous calcification, no features of any malignancy. (Fig. 3)

Ultrasound

Well defined hyperechoic lesion measuring around 4*3 cms noted in popliteal fossa.

FNAC

Fragments of cartilage, mature adipocytes a few giant cells, in background of blood elements.

DIFFERENTIAL DIAGNOSIS

1. Primary Synovial Osteochondromatosis
2. Tumoural Calcinosis
3. Myositis ossificans
4. Popliteal Lymph node calcification

CLINICAL DIAGNOSIS

Baker's cyst with Primary Synovial Osteochondromatosis.

DISCUSSION OF MANAGEMENT

Surgical management was planned, and open procedure was preferred considering the extensive involvement and risk of recurrence. Posterior lazy s shaped incision was given and a large cyst of around 6*4 cm was removed which was originating beneath the semimembranous tendon (Fig. 4, 5, 6). The entire sac was excised from root. Synovium and the bodies were sent for histopathological examination which confirmed the diagnosis of synovial chondromatosis with papillary hyperplasia of the synovium. Post-operatively X ray taken (Fig. 7) and patient was instructed about knee mobilization and strengthening exercises and followed up at one, three and six months. Patient's range of movement was 0-130 degree of flexion without pain at three months post-operative period. There was no recurrence at one year after the surgery. (Fig. 8)

Primary Synovial Osteochondromatosis is a benign condition characterized by synovial membrane nodular proliferation and metaplasia.^{1,2} The proliferated fragments may break off from the synovial surface into the joint space, where they may grow and calcify. The calcification may vary from speckled to frankly ossific bodies while their size may vary from few millimeters to a few centimeters.³

Primary synovial chondromatosis is a relatively uncommon disease that typically affects patients in the third to fifth decades of life, although the age range for clinical presentation is wide. Men are affected two to four times more frequently than women.⁴

The disease is commonly mono-articular and mostly affects the knee.⁵ Involvement of smaller joints has also been reported, which includes distal radioulnar, tibio-fibular, metacarpophalangeal and metatarsophalangeal joint.^{6,7,8,9} The knee and hip are the most commonly involved sites. Other commonly involved joints are elbow, shoulder, and ankle. The pathologic appearance may simulate chondrosarcoma because of significant histologic atypia, and radiological correlation to localize the process as synovially based is vital for correct diagnosis.⁴

Secondary synovial chondromatosis can be distinguished from primary disease both radiologically

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Corresponding Author:
Dr. Rajshekhar,
Junior Resident, Department of Orthopaedics,
Vijayanagara Institute of Medical Sciences, Ballari.
E-mail: rajshekhar@gmail.com
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(underlying articular disease and fewer chondral bodies of variable size and shape) and pathologically (concentric rings of growth). Recurrence rates range from 3% to 23%. Malignant transformation to chondrosarcoma is unusual (5% of cases) and, although difficult to distinguish from benign disease, is suggested by multiple recurrences and marrow invasion.⁴

The differential diagnosis of Primary Synovial Chondromatosis includes pigmented villonodular synovitis, secondary synovial osteochondromatosis, rheumatoid or other seronegative arthritis, synovial hemangioma and synovial chondrosarcoma.¹⁰

Computerized tomography has a higher sensitivity than plain radiography for the detection of calcified foci within a joint and/or in a periarticular bursa. The presence of a soft tissue mass, isodense to water, with calcifications (linear or as loose bodies) either intra-articular or in an adjacent bursa is highly indicative of synovial chondromatosis. Pressure defects at the articular margins are frequently apparent.^{11,12} The treatment of Primary Synovial Chondromatosis is surgical. Open surgery or arthroscopic intervention can be performed with resection of the diseased synovium and removal of any loose intra-articular bodies. Recurrence is frequent after partial synovectomy; hence total synovectomy has been suggested as the preferred treatment.¹³ Recurrence rates for PSC after surgical treatment have been reported as varying from 7% to 23%.¹⁴ MRI is a valuable tool in detecting Primary Synovial Chondromatosis in an early phase and in estimating the intrasynovial extent of the disease. In the treatment of the disease, surgical removal of the loose bodies and partial or total synovectomy have been suggested.

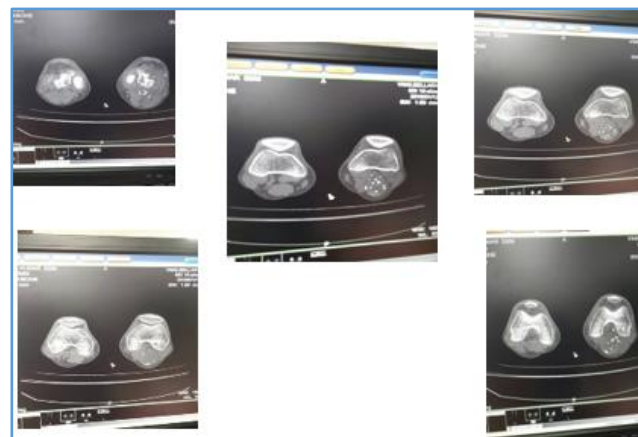


Figure 3. Preop CT Scan



Figure 4. Intraoperative Images Showing Incision and Approach



Figure 1. Clinical Presentation



Figure 2. Preop X-Ray AP and Lateral Radiographs of Knee



Figure 5. Image Showing Cyst with its Contents

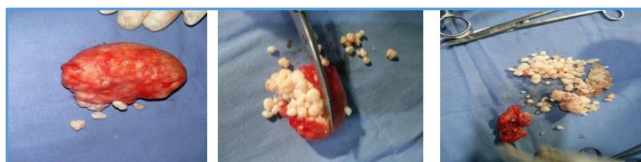


Figure 6. Postoperative Image after Successful Excision of Sac with its Entire Contents



Figure 7. Postoperative X-Ray



Figure 8. Follow up X Ray After 1 Year

REFERENCES

- [1] Jeffreys TE. Synovial chondromatosis. J Bone Joint Surg Br 1967;49(3):530-534.
- [2] Miligram JW. Synovial osteochondromatosis: a histopathological study of thirty cases. J Bone Joint Surg Am 1977;59(6):792-801.
- [3] Anupam W. Images in rheumatology. J Indian Rheumatol Assoc 2004;12:77.

- [4] Mark DM, Jorge AV, Julie CF, et al. From the Archives of the AFIP Imaging of synovial chondromatosis with radiologic-pathologic correlation. RadioGraphics 2007;27(5):1465-1488.
- [5] Yu GV, Zema RL, Johnson RW. Synovial osteochondromatosis. A case report and review of the literature. J Am Podiatr Med Assoc 2002;92(4):247-254.
- [6] Von Schroeder HP, Axelrod TS. Synovial osteochondromatosis of the distal radio-ulnar joint. J Hand Surg (Br) 1996;21(1):30-32.
- [7] Batheja NO, Wang BY, Springfield D, et al. Fine-needle aspiration diagnosis of synovial chondromatosis of the tibiofibular joint. Ann Diagn Pathol 2000;4(2):77-80.
- [8] Warme BA, Tigrani DY, Ward CM. Metacarpophalangeal joint synovial osteochondromatosis: a case report. Iowa Orthop J 2008;28:91-93.
- [9] Tagliavero G, Moro S, Stecco C, et al. Bilateral synovial chondromatosis of the first metatarsophalangeal joint: a case report. Reumatismo 2003;55(4):263-266.
- [10] Kiriti O, Tsitas K, Grollios G. A case of idiopathic bursal synovial chondromatosis resembling rheumatoid arthritis. Hippokratia 2009;13(1):61-63.
- [11] Resnick D. Tumors or tumor-like lesions in or about joints. In: Diagnosis of bone and joint disorders. 4th edn. Philadelphia: WB Saunders Company, 2001.
- [12] Cellerini M, Grasso A, Fidecicchi F, et al. Diagnostic imaging of idiopathic synovial osteochondromatosis. Radiol Med (Torino) 1995;89(6):761-765.
- [13] Park JH, Noh HK, Bada LP, et al. Arthroscopic treatment for synovial chondromatosis of the subacromial bursa: a case report. Knee Surg Sports Traumatol Arthrosc 2007;15(10):1258-1260.
- [14] Krebs VE. The role of hip arthroscopy in the treatment of synovial disorders and loose bodies. Clin Orthop Relat Res 2003;406:48-59.