Intra-articular Osteochondroma: A case Report


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INTRODUCTION
Osteochondromas usually arise from the metaphyseal region of the growing skeleton. They usually develop in relation to the periosteum, and occur around the growth plate of long bones, especially the knee\(^1\). The tumor usually stops to grow with closure of the growth plate. Extraskeletal cartilaginous tumors are uncommon. These tumors can arise at unusual anatomic site. Intra-articular osteochondromas are rare in older individuals\(^2\). In joints with a large capsular space, such as the patellofemoral joint, osteochondromas can remain intra-articular\(^3\). Clinical-pathologic and radiological correlation helps to clarify the nature of the lesion. Complete local surgical excision is the management of choice. We report a patient with an intra-articular osteochondroma in the anterior portion of the knee joint. The tumor caused pain and swelling in the joint and affected knee motion.

Key Words: Intra-articular, Osteochondroma

CASE REPORT:
A 53 year old female presented with a six months history of knee pain and swelling. She was unable to flex her knee more than 60\(^\circ\). She did not report any trauma. Clinical examination and imaging studies revealed a bony mass in the infrapatellar region of the knee. The range of motion of the knee joint was limited to 60\(^\circ\) of active flexion. Radiographs showed a well delineated mass in the anterior portion of the knee (Fig. 1).

The mass was well circumscribed, osseous mass with small areas of radiolucency. The mass was separate from patella which was displaced antero-laterally by the mass. CT scan confirmed the radiographic findings and showed an intracapsular cauliflower like osseous mass with nodular and arch like calcifications within (Fig. 2).

Fig: 2 CT scan showing an intracapsular cauliflowerlike osseous mass with nodular and arch like calcifications within

There was no communication of this mass with patella, tibia or femur. MRI showed that the mass was lying in the Hoffa’s fat with the cap in close contact with the medial articular joint space (Fig. 3).

Fig: 3 T2-weighted image: slight joint effusion. A mass located in the anterior portion of the space joint is evident. The mass seems to contain some chondral components.

The patient was operated and the mass excised. Histopathology confirmed the diagnosis of intra-articular osteochondroma. The firm mass showed a nodular appearance with a diameter of 7 cm with sharply demarcated edges (Fig. 4).

Fig: 1 AP and Lateral knee radiographs at presentation

Fig: 4 Macroscopic appearance of the tumor
Microscopic examination showed a cap of mature hyaline cartilaginous tissue covered by a fibrous membrane. The centre of the lesion consisted of mature bone trabeculae located beneath the cartilaginous cap containing bone marrow and amorphous calcified debris. At the interface between mature bone and well-differentiated cartilaginous cap, there were foci of active endochondral ossification. There was no evidence of malignant features, and absence of mitotic activity.

Post-operative recovery was uneventful. The patient returned to her activities of daily living, and regained full flexion two weeks after the procedure. When last reviewed 12 months after the excision, she was asymptomatic, with no clinical and radiographic signs of recurrence of the lesion.

**DISCUSSION**

Osteochondromas usually arise from the metaphyseal region of the growing skeleton, with the medulla and cortex of the lesion being continuous with that of the parent bone. Continued growth after skeletal maturation can cause concern given the pre-malignant nature of osteochondromas. Most involve the knee region, although they may develop in any bone that forms by enchondral ossification. They usually grow away from joints. Extraskelatal osteochondromas are rare. These lesions arise in the juxta-articular soft tissues without attachment to bone. They may be large, and show the clinical and radiological features of a malignant process. Approximately 50 extraskelatal osteochondromas not protruding into the joint cavity have been reported as para-articular, soft-tissue, capsular, intracapsular or intra-articular osteochondromas, ossification of the infrapatellar fat pad, and ossifying chondroma.

Only few intra-articular osteochondromas have involved the anterior and, more rarely, the posterior knee joint space. Bleshman and Levy reported an intra-articular osteochondroma of the hip with lateral displacement of the femoral head. In our patient, radiographs showed a large well circumscribed, mineralized mass without abnormal calcifications within the adjacent tissues.

MRI did not show any irregularities or thickening of the cartilaginous cap greater than 1 cm. Hence, there was no suggestion of malignancy. The borders of the mass were well-defined, displacing the patellar tendon and the Hoffa fat pad without infiltration. The size of the lesion and the small areas of chondroid tissue made synovial chondromatosis unlikely. In the differential diagnosis, malignant degeneration to chondrosarcoma had to be considered since the patient had reached skeletal maturity. By that time, proliferation of the cartilage should have ceased.

The gross appearance and histological examination demonstrated the features of an extra-osseous osteochondroma-like soft tissue mass with secondary bone formation in a fairly regular pattern through a process similar to normal enchondral growth. MRI is recommended for further characterisation of the nature and extent of an intra-articular osteochondroma. Operative removal is the procedure of choice. In our patient, the absence of recurrence at follow-up after 12 months confirms the benign nature of the lesion.

In conclusion, extra skeletal cartilaginous tumors can arise at unusual anatomic site. Clinical-pathologic and radiological correlation helps to clarify the nature of the lesion. Complete local surgical excision is the management of choice.

**REFERENCES**