Extra-Osseous Osteochondroma: Case Report

Selma Zargari¹, Dorsa Morshed Rad¹, S Hajialiloo Sami², A Karimi², A Izanloo³, Masoud Mirkazemi²*

ABSTRACT

Osteochondroma (OC) is one of the most common benign bone tumor which usually develops in long bones (arise from the metaphyseal ends of long bones) and very rarely occurs in craniofacial region. An osteochondral neoplasm of the soft tissue, an uncommon lesion of uncertain pathogenesis, usually arises from the synovial tissue in joints and tendon sheaths. Rarely, extra-skeletal OCs also arise outside of synovial compartments. Since the etiology of OC remains controversial the diagnosis of extra-skeletal OC should be considered when a discrete ossified mass is localized in the soft tissue. Here, a case of pathologically proven Para-articular soft tissue Osteochondroma in hip region is presented together with clinical and radiologic findings. The unique feature of this case is that it's a rare subtype of soft tissue chondromas occurring in and around the joints.

Keywords: Osteochondroma, Extra-Osseous Osteochondroma, Extra-Skeletal

Extraskeletal osteochondroma is a relatively rare, slow growing, benign soft tissue tumor, commonly arising within the soft tissues of hands and feet, and presenting as a small discrete calcified mass, that rarely exceed 2–3 cm in its greatest dimension (1, 2). This tumor has no predilection for either gender, and it occurs mostly in patients 20 years or older with peak occurrence during the 3rd and 6th decades, and usually without antecedent trauma (2). It represents approximately 35% to 50% of all benign tumors, and 8% to 15% of all primary bone tumors defined as an osteocartilaginous exocytosis with cartilage-capped bony protrusion on the external surface of a bone. The soft tissue osteochondroma or para-articular osteochondroma may simulate some of the more aggressive tumors; thus, its recognition is important to avoid unnecessary aggressive surgical management as marginal excision is adequate (3). Mineralized soft tissue lesions such as myositis ossificans, synovial chondroma, and synovial sarcoma may present in a similar fashion when occurring in a juxtaarticular position.

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Author Information

1. Human Genetics Research Center, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran
2. Bone and Joint Reconstruction Research Center, Shafa Orthopedic Hospital, Iran University of Medical Sciences, Tehran, IR Iran.
3. Razavi Cancer Research Center, Razavi Hospital, Imam Reza International University, Mashhad, Iran.

† these authors contributed equally

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Corresponding Author E-Mail: masoud.dr2003@gmail.com
Histologically, the tumor includes endochondral ossification regions enclosed by hyaline cartilage. The growth of an Osteochondroma is similar to that occurring at the epiphysis, with the cartilage cap acting as the epiphyseal plate. Chondrocytes migrate to the center to form cancellous bone (4).

**Case report**

In (date), a 36 years old man presented to the (hospital) with Rt. Proximal thigh mass in posterior aspect from 4 years ago history of resection in another center. The recurrence had been recorded almost 6 months prior to his admission. There was no history of constitutional symptoms and weight loss. All laboratory data were normal. On examination, an approximately 10-15cm, firm mass was noted in the posterior aspect of Rt. thigh. Also Electromyography (EMG) and Nerve Conduction Velocity (NCV) tests revealed a chronic sciatic nerve injury.

**Discussion**

We presented a 36-year-old male case suffering from a rare subtype of soft tissue OC located in the proximal thigh in posterior aspect. The tumor showed clinical, histological and radiographic characteristics of OC. Osteochondromas usually arise from the metaphysical region of the growing skeleton, with the medulla and cortex of the lesion being continuous with that of the parent bone. Extra skeletal osteochondroma is rare and usually arises in the juxta-articular soft tissues without attachment to bone. Close to 40 extra skeletal osteochondromas have been reported as paraarticular, soft-tissue, capsular, intracapsular or intraarticular osteochondromas (5). Extra skeletal osteochondromas may arise in soft tissues, but the cause of their origin in soft tissues remains controversial. Metaplasia of tendon sheaths in the hand, wrist or foot has been postulated as the origin of extra skeletal osteochondroma (6, 7). Extra skeletal osteochondroma can arise from fibroblasts in the connective tissue distant from bones and joints because of unknown stimuli (6). About 82–84% of extra skeletal osteochondromas occur in the hands and feet, although some have been reported in the buttocks and thighs (4, 8). Overall, osteochondroma of soft tissue is a rarely occurring benign tumor. It has been reported in several tissues of the limbs and also in particular localizations (kidney, liver, tongue). Diagnosis is based on histological results, after elimination of the possibility of osseous chondroma or synovial osteochondroma (9). Li and colleagues reported three cases of benign soft tissue osteochondromas with uncertain pathogenesis. Two cases were located in the subcutaneous tissues beneath the calcaneus. The third was located in the soft tissues near the left ankle joint. They suggest that diagnosis of soft tissue osteochondroma should be considered when a well-defined osseous mass is

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located in the soft tissues (6). In the present case, the tumor was located at the thigh. Radiographically, an extra skeletal osteochondroma will appear as a well-circumscribed, lobulated mass with dense central calcification or areas of ossification. Extra skeletal osteochondromas are discrete lobulated masses that display at least focal areas of hyaline cartilage formation. Areas of calcification and ossification may be identified within the hyaline cartilage. Lesions appear to arise de novo without any apparent precursor. Cellular atypical may be seen histologically, but no malignant transformation or metastatic lesions have been demonstrated.

The nodules are typically less than 5 cm in size. They may scallop the underlying bone. The radiographic findings of extra skeletal osteochondromas typically consist of well-circumscribed, lobulated masses with dense, central calcifications or areas of ossification. A CT scan can show the extra skeletal location and central dense areas of calcification or ossification of extra skeletal osteochondromas. Magnetic resonance imaging (MRI) better delineates the border of the mass, thus distinguishing it from a sarcoma (10).

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Conclusion

The diagnosis of extra skeletal osteochondroma should be considered when a mass with mature ossification and a typical chondroid matrix is seen in the soft tissues, even at atypical sites. Clinical awareness of this benign entity is important as no malignant transformation or metastasis has been reported. CT and MRI help delineate the extra skeletal soft-tissue origin, and histopathology confirms the diagnosis. CT and MRI are recommended for further characterization of the nature and extent of an extra articular osteochondroma. Operative removal is the procedure of choice when function is reduced and the nature of the tumor uncertain.