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Case Report

Osteochondroma of Distal Femur Managed with Complete Excision – A Case Report

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ABSTRACT

Osteochondroma is a benign bone tumour occurring at the age of 10 – 30 years with no gender predilection. These lesions arise as a result of epiphyseal growth plate separation and are considered as developmental lesions of growth plate rather than true neoplasms. Long standing solitary osteochondromas may change into osteosarcomas although most frequent malignant change occurring is the chondrosarcoma. The chance of recurrence is very minimal if the tumour is completely resected from its bed without any remnants of the perichondrium and cartilaginous cap left behind. In this case a 30 year old male with distal femur osteochondroma was managed with complete resection from the base of stalk along with the cartilaginous cap and perichondrium.

Keywords: Osteochondroma, Exostosis, Distal Femur, Cartilaginous cap

BACKGROUND:

Osteochondroma is a benign bone tumour occurring at the age of 10 – 30 years with no gender predilection [1]. These lesions arise as a result of epiphyseal growth plate separation and are considered as developmental lesions of growth plate rather than true neoplasms [2]. Cortical and medullary bone with hyaline cartilage caps make up its structure. A pathognomonic feature that confirms the diagnosis is the continuity of the tumour with the cortical and medullary region of the parent bone [3]. The majority of benign bone tumours, comprising 20–50% of all benign bone tumours and 9% of all bone tumours, are osteochondromas [4, 5]. Among all the osteochondromas 15% of cases present as multiple tumours rest being solitary in nature. [6]. Multiple hereditary exostoses, an autosomal dominant disorder occurring due to dysfunctional mutation of exostosin-1 (EXT1) and exostosin-2 (EXT2) giving rise to multiple osteochondromas [7].

CASE REPORT

Herewith we reported a case, 30 year old male reported to orthopaedic outpatient department with complaints of swelling above right knee over the inner aspect of thigh since 4 years. Patient complained of increase in size of the swelling since last 6 months. The swelling was not associated with any other symptoms such as pain, or restriction of motion of joint. There was no history of trauma, night pain, fever, sweats, chills, weight loss or any swelling in other parts of body. The family history and past medical history were unremarkable. Physical examination revealed a well-defined immobile palpable mass, bony hard in consistency, on the antero-medial aspect of the right distal femur measuring 10x7x3 cms. There

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was no pulsation or thrill on auscultation. Range of motion of right knee joint was full and painless. Muscular functions of the right hip and knee joint were normal. Plane radiograph of the right knee joint revealed a solitary bony outgrowth over the anteromedial aspect of distal femur growing away from the knee joint with a pedunculated stalk (Figure 1,2).

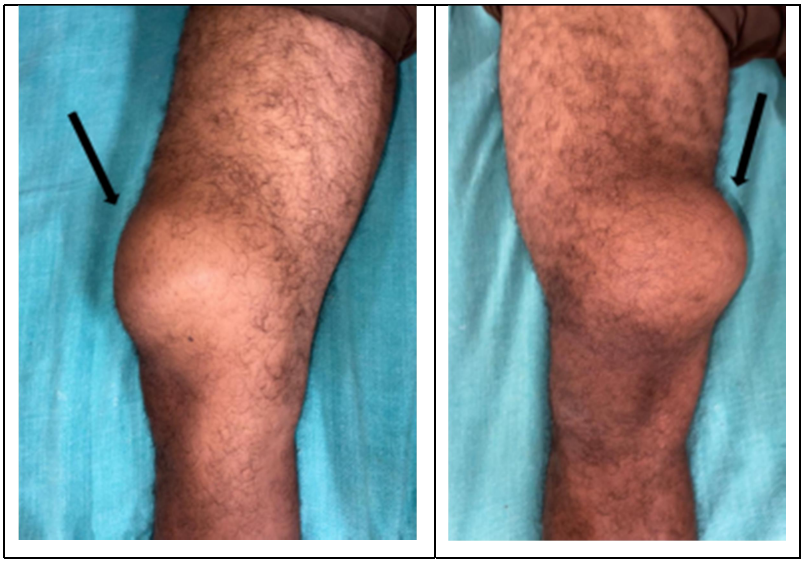

Figure 1. Clinical picture of tumour

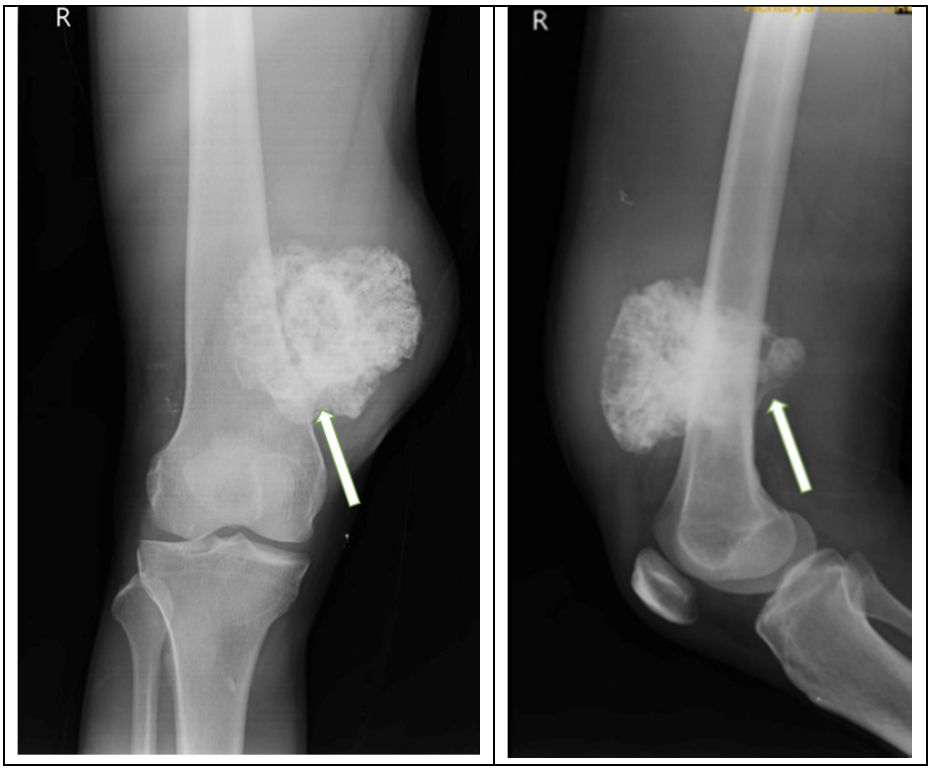

Figure 2. Plain radiograph of the tumour with pedunculated stalk

After informed consent, patient was planned for surgery. Using anteromedial approach to distal femur, the tumour was exposed after soft tissue dissection and complete excision of tumour and its stalk was done along with the cartilaginous cap and perichondrium (Figure 3).

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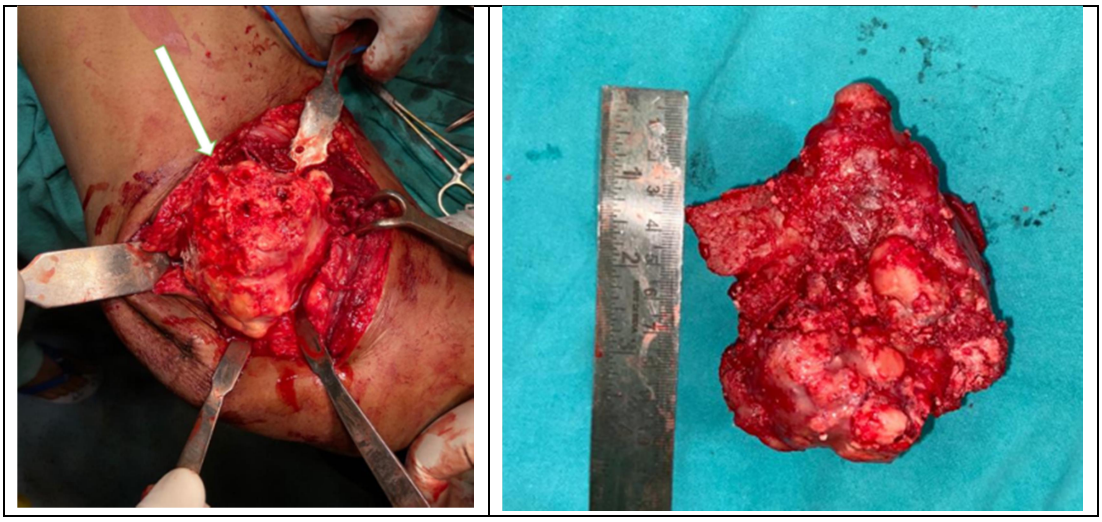

Figure 3. Intraoperative picture of the tumour

Care was taken to avoid any injury to the to the neurovascular bundle in the Hunters Canal. The remaining portion of stalk was curetted and was given lavage with hydrogen peroxide and normal saline. Negative suction drain was inserted and closure was done in layers. Intraoperative sample that was sent for histopathology confirmed the diagnosis of osteochondroma. Post operatively patient was able to do full range of motion at knee joint (Figure 4,5).

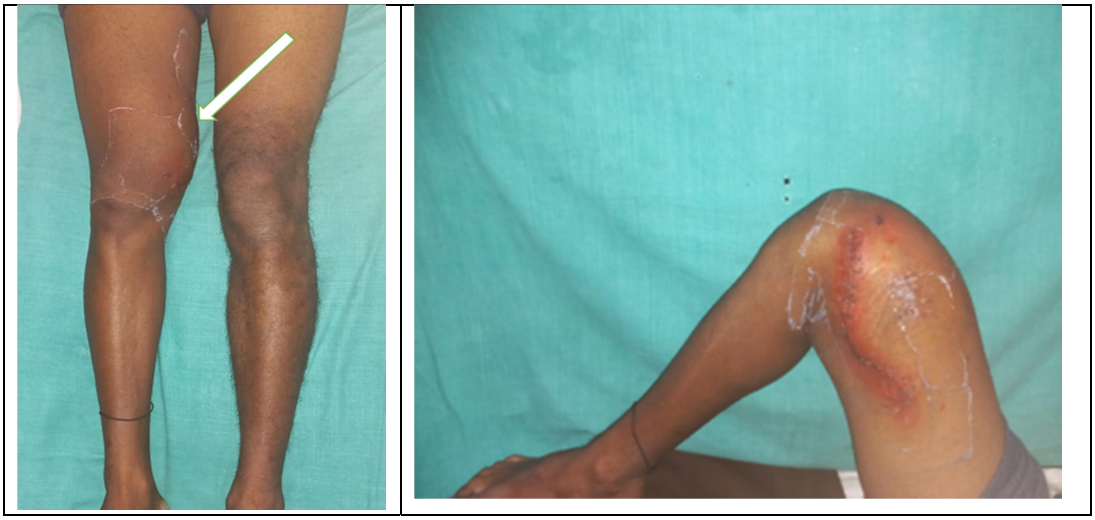

Figure 4. Post operative clinical picture

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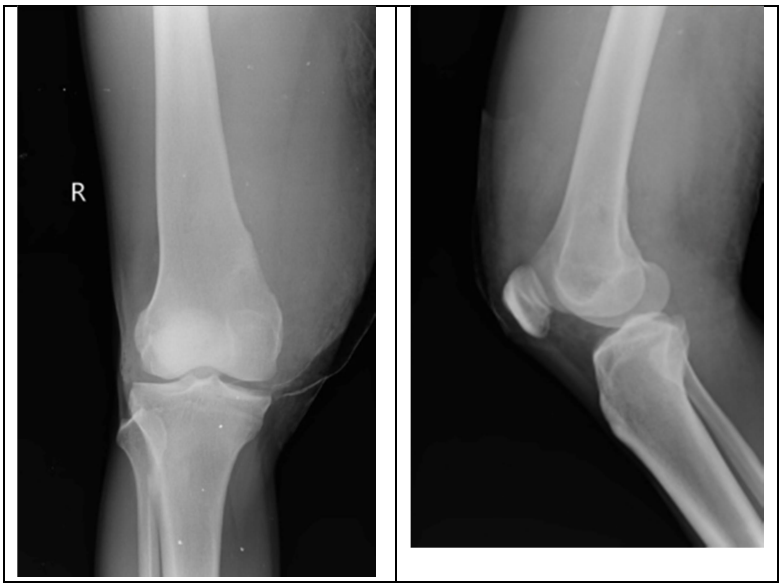

Figure 4. Post operative Xray

The patient was informed regarding publication of the data concerning the case and appropriate consent was taken for the same.

DISCUSSION

The majority of benign bone tumours, including 10% to 15% of both benign and malignant bony tumours, are osteochondromas, which account for 30% (range 20–50%) of all benign bony tumours [3]. Osteochondroma is the most prevalent bone tumour benign in nature, typically affecting the metaphyseal bony region. Most cases present with single tumour however, 15% of the cases present as multiple lesions caused due to dysfunctional loss of EXT-1 and EXT-2 gene [8]. Long standing solitary osteochondromas may change into osteosarcomas although most frequent malignant change occurring is the chondrosarcoma(94%). In these situations, malignant transformation is assumed to occur sequentially, with peripheral low-grade chondrosarcoma developing from osteochondroma before differentiating into high-grade sarcoma which may be either fibrosarcoma, malignant fibrous histiocytoma or osteosarcoma [9].

CONCLUSION

Osteochondroma is a bony and cartilaginous tumour protruding from the cortex of the bone with benign nature. Surgical treatment indications include cosmetic concerns, higher risk of malignant transformation, pain and unknown diagnosis. As patients with HME are more susceptible to undergo severe osseus deformation and malignant transformation, they are more frequently treated with surgical excision of the tumour as compared to those with solitary lesions. The suggested intervention is complete resection, which entails removing exostoses with its base at the normal bone and subsequently removing the cartilaginous cap and perichondrium. The chance of recurrence is very minimal if the tumour is completely resected from its bed without any remnants of the perichondrium and cartilaginous cap left behind. In addition, there is a 1% chance for solitary lesions and 10% chance for HME to undergo malignant transformation thus making it necessary to completely resect the tumour.

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