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Case Report

Right foot – osteochondroma - A case report

Joseph Sajeev^{1,*}, Joe Cherian¹, Jerin Jeevo¹, Kevin Philip¹¹Dept. of Orthopaedics, Rajiv Gandhi University of Health Sciences, Bengaluru, Karnataka, India

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ABSTRACT

Introduction: Osteochondromas are thought of as benign bone tumours, however they are actually developmental defects.

A long tubular bone that may be sessile or pedunculated has an outgrowth with cartilage covering it that is visible on radiographs. Additionally, the cartilage cap can harden. Any changes in radiological appearance are strongly indicative of chondrosarcoma, particularly those with ill-defined border development and thickening of the cartilage cap >15 mm.

Case Report: An insidious onset, slow progression, and lack of aggravating or alleviating variables were all complaints made by a 21-year-old male patient with swelling and pain across the right foot dorsal side for the past two years. Upon examination, there was a firm, irregularly shaped, 5 to 6 cm swelling over the dorsal part of the right foot that was attached to the underlying bone.

Discussion: The majority of benign bone tumours, or 36% to 41% of all benign bone tumours, are conventional osteochondromas. Osteochondromas are uncommon in the foot and ankle regions, but if a big osteochondroma develops in these areas and is interfering with function, it should be removed. The amount of the lesion, any soft tissue involvement, and the depth and placement of the cartilage cap can all be seen on an MRI, which is helpful in the workup of an osteochondroma that is symptomatic or worrisome. According to histology, the osteochondroma's cap is made of hyaline cartilage, with well-differentiated cells abundantly spaced out by cartilage matrix and oriented in columns that mimic the epiphyseal growth plate in the deepest levels of the cap.

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1. Introduction

Osteochondromas are thought of as benign bone tumours, however they are actually developmental defects.

Autosomal dominant inheritance is common, and it can manifest as a single lesion (85%) or numerous lesions in the context of hereditary multiple exostosis (15%).

Most solitary osteochondromas that appear in younger patients are usually asymptomatic and unintentionally found.

A long tubular bone that may be sessile or pedunculated has an outgrowth with cartilage covering it that is visible on radiographs. Additionally, the cartilage cap can harden.

Sessile and pedunculated osteochondromas are the two forms.

In general, the lesions expand toward the diaphysis and away from the surrounding joint.

MRI can be used to measure the cartilaginous cap's thickness since T2 weighted images have a strong signal. The perichondrium is a low signal ring that surrounds the cap.¹

The most frequent side effects of osteochondroma include nerve or vascular damage, bursa formation,

* Corresponding author.

E-mail address: joseph.thannikal@gmail.com (J. Sajeev).

pseudoaneurysm configuration, and malignant transformation.

Malignant degeneration occurs about 1% of the time in solitary cases and 5-25% of the time in hereditary multiple exostoses.²

Any changes in radiological appearance are strongly indicative of chondrosarcoma, particularly those with ill-defined border development and thickening of the cartilage cap >15 mm.

2. Case Report

An insidious onset, slow progression, and lack of aggravating or alleviating variables were all complaints made by a 21-year-old male patient with swelling and pain across the right foot dorsal side for the past two years.

There was no prior history of such swellings in any other bodily parts.

Upon examination, there was a firm, irregularly shaped, 5 to 6 cm swelling over the dorsal part of the right foot 2nd and 3rd metatarsal head that was attached to the underlying bone.

No dilated vessels over the swelling, no mobility, and skin adhering to the swelling.

The sensation above the enlargement was still evident and the distal pulsations were present.



Fig. 1: Clinical image showing the fullness at the 2nd and 3rd metatarsal head

3. Discussion

The majority of benign bone tumours, or 36% to 41% of all benign bone tumours, are conventional osteochondromas.¹

The lesion typically extends from the metaphyseal region of a long bone, and they typically have a distinct hyaline cartilage cap.

Osteochondromas are uncommon in the foot and ankle regions, but if a big osteochondroma develops in these areas and is interfering with function, it should be removed.¹

A large osteochondroma may also be suspect of developing into something more malignant due to its size and potential involvement of soft tissues.



Fig. 2: Plain radiograph showing the blastic lesion originating from 2nd and 3rd metatarsal



Fig. 3: CT 3 D reconstruction



Fig. 4: CT sagittal section

Radiographs alone may be deemed diagnostic for osteochondroma, but other imaging modalities, such as CT, MRI scans, and radionuclide bone scanning, may be required for surgical planning and to rule out sarcomatous degeneration.³

The amount of the lesion, any soft tissue involvement, and the depth and placement of the cartilage cap can all be seen on an MRI, which is helpful in the workup of an osteochondroma that is symptomatic or worrisome.

According to the radiographic appearance, the parent bone's medullary cavity and underlying cortex are continuous with the osseous growth.

According to the patient's age and the lesion's growing activity, the thickness of the hyaline cartilage cap that covers the cortex in an osteochondroma might vary.

According to histology, the osteochondroma's cap is made of hyaline cartilage, with well-differentiated cells abundantly spaced out by cartilage matrix and oriented in columns that mimic the epiphyseal growth plate in the deepest levels of the cap.

4. Source of Funding

None.

5. Conflict of Interest

None.

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Author biography

Joseph Sajeev, PG Student

Joe Cherian, Professor

Jerin Jeevo, PG Student

Kevin Philip, Senior Resident

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