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An Enchondroma of the Metacarpal – A Challenging Case

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ABSTRACT

Introduction: *Enchondroma is one type of benign cartilage tumour that appears inside the bone. These tumours usually begin and grow in childhood, then stop growing but remain throughout adulthood. They are often found in patients between 10 and 20 years of age. Some cases become dormant or burned out.*

History: *Our case was a 30 yr old female patient who presented with a hard painless swelling over right hand thumb since last five months with restriction of terminal range of motion & pain at carpo-metacarpal joint but no restriction at metacarpo-phalangeal joint.*

Treatment: *The growth was excised without disturbing articular margins & cavity was filled with cancellous bony strut auto graft derived from iliac crest and this reconstruction was fixed with k-wire.*

Result*: The patient was followed up at 2-month, 4month, 6 month and 1 year intervals. Currently she shows a good range of motion of both the metacarpo-phalangeal and the interphalangeal joint.*

Keywords-*Enchondroma, finger tumour, metacarpal*

INTRODUCTION

Enchondroma is one type of benign cartilage tumour that appears inside the bone. These tumours usually begin and grow in childhood, then stop growing but remain throughout adulthood. They are often found in patients between 10 and 20 years of age. Some cases become dormant or burned out.

These tumors are very common and often occur in the small bones of the hand and feet. In fact, they

are the most common tumor of the hand. They also occur in the long bones of the upper arm and thigh.

In rare cases, multiple tumors can appear as part of a syndrome. These syndromes are Ollier's disease and Maffucci's syndrome.

Single enchondromas can become cancerous, but this is very rare. The rate of change to a cancerous tumor is a little higher in Ollier's disease and Maffucci's syndrome. For the very few that become cancer, when they become malignant, they usually become a chondrosarcoma. Being able to tell the difference between these benign tumors and very low-grade forms of cancerous tumors can be difficult, even for orthopaedic tumor surgeons.[1]

OUR CASE

A 30 yr old female patient presented with swelling over right hand thumb since last five months. The swelling was painless and occasional pain felt without any specific pattern. There was restriction of terminal range of movement along with pain at carpometacarpal joint but no restriction at metacarpo-phalangeal joint. The swelling was of size 10x8x2 mm extending from base of the thumb up to the metacarpophalangeal joint and was hard in consistency. The neurovascular examination was however normal.

XRAY FINDINGS

X-ray of right hand AP Oblique view showed sharply defined scalloped margins: mild endosteal scalloping, expansion of the overlying cortex present, no periosteal reaction and no soft tissue mass.

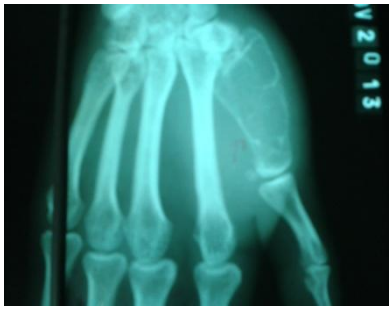

Figure 1. Pre op X-ray

TREATMENT DONE

The patient was operated under regional block in supine position. The hand was kept in anatomical positionand using the dorsal approach after retracting extensor pollicis longus tendon the first metacarpal was exposed. The growth was excised without disturbing articular margins & cavity was filled with cancellous bony strut auto graft derived from iliac crest and this reconstruction was fixed with k-wire. The excised mass was then sent for histopathological examination.

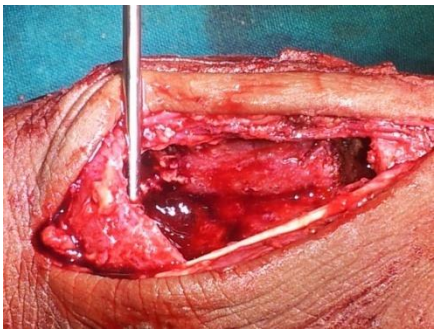

Figure 2. Intra op picture

Figure 3. After bone grafting

HISTOPATH EXAMINATION

It confirmed the diagnosis of an enchondroma.

RESULT

The patient was followed up at 2-month, 4month, 6 month and 1 year intervals. Currently she shows a good range of motion of both the metacarpo-phalngeal and the interphalangeal joint.

Figure 4. Post op X-ray of the patient.

REVIEW OF LITERATURE

Sridhar H et al studied a case where there was a malignant transformation of an enchondroma of the metacarpal. This shows that an enchondroma of the metacarpal bone is not a thing to be trifled with. [2]

Cha SM in 2013 and colleagues showed that for the treatment of enchondroma in the metacarpal and proximal phalanx, alcohol instillation immediately after curettage was as effective as extensive curettage using a high-speed burr. [3]

Fajardo M et al pointed out that Haemorrhagic epithelioid and spindle cell haemangioma could be misdiagnosed as a metacarpal enchondroma. Hence it is one of the differential diagnoses that one must be aware of. [4]

Matysiakiewicz J and colleagues in 2010 studied 170 patients and showed a recurrence in 17 patients (11%). He too observed one case of malignant transformation to chondrosarcoma. [5]

McVey MJ and Kettner NW. Recommended treatment for a pathologic fracture through an enchondroma in the hand is casting, which allows fracture healing. Curettage of the lesion without packing of the resultant cavity is then recommended. In this case, casting and fracture healing took place without any treatment directed at the enchondroma. Their patient was advised of the rationale for undergoing the removal of the enchondroma. Removal was recommended to prevent fracture recurrence from structural weakening, which would be likely due to the unusually high level of mechanical stress from the professional demands of manual treatment. [6]

CONCLUSIONS

With the help of our beautiful photographs we mainly intend to show that a general orthopaedic surgeon must be aware of such a condition and the diagnosis mustn't slip past notice. In general when enchondromas are treated surgically, it is usually with scraping out and filling of the cavity with bone graft or other filling substances. Although they can recur, most of them will not. Tumours with pathological fractures are scraped out to let the fracture heal. If the tumour is an aggressive one with gross bone destruction and with a mass it could be a chondrosarcoma.

Malignant tumors are either scraped out or the entire bone around the lesion must be removed. This decision is made depending on the grade of the

tumor. The grade of the tumor is determined by imaging studies and biopsy.

Methods of treating tumors that look like simple enchondromas on x-ray studies, but are painful, can be controversial. Some surgeons recommend that the tumor be scraped out.

Other surgeons think that these tumors do not require surgical removal. This is because they are not likely to be the cause of the pain in the area and so should be observed with regular x-rays.

Unfortunately, a biopsy will not often help in these cases. Even specialized bone pathologists can have trouble determining the difference between a benign enchondroma and a low grade chondrosarcoma.

ACKNOWLEDGEMENT

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