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Case Report

Fibro-osseous pseudotumor of the digit

Sanjiv Kumar[1]*, Tushar Rai[1], Sudhir Singh[1], Reetu Verma[2]

[1]Department of Orthopaedic Surgery, Era's Lucknow Medical College & Hospital, Lucknow, U.P., India
[2]Department of Anaesthesiology, KGMU, Lucknow, U.P., India

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***Correspondence:**
Dr. Sanjiv Kumar,
E-mail: Sanjeevkumar98@gmail.com

ABSTRACT

Fibro-osseous pseudotumor of the digit is a very rare benign lesion however it may be a cause of concern as it forms differential diagnosis to aggressive bone forming tumors like extraskeletal osteosarcoma. Till date only a few cases have been reported in the literature. We came across a case of 7yr old female presented with complains of post traumatic progressively growing hard swelling present on the palmar surface of the hand at the hypothenar region for last 6 months. Investigations i.e. X-rays, MRI and CT scan were done along with other blood investigations to rule out other common diseases such as exostosis or myositis ossificance or extraskeletal osteosarcoma. Excisional biopsy of the lesion confirmed the diagnosis of fibro-osseous pseudotumor of the digit.

Keywords: Fibro-osseous pseudotumor, Benign lesion, Digit

INTRODUCTION

Fibro-osseous pseudotumor of the digit is a rare benign lesion of subcutaneous tissue which is thought to be a reactive process as a result of repeated trauma.[1] Ossifying lesions of soft tissue are fairly uncommon. However they may be a cause of concern to the clinicians as aggressive bone forming tumors like extraskeletal osteosarcoma is one of the differential diagnosis.[2] Fibro-osseous pseudotumor of the digit is also noteworthy due to its odd location, i.e. tips of fingers and toes[2]. Till date only a few cases have been reported in the literature. There is slight female predilection. Early diagnosis and treatment (resection) of fibro-osseous pseudotumor is important due to three reasons as this is a rare entity, potential for misdiagnosis and overtreatment is high. No case till date of malignant transformation of fibro-osseous pseudotumor has been reported, but since a definite link between long standing chronic inflammatory or irritative lesions and neoplasia exists, early excision is necessary.

CASE REPORT

A 7 year old female presented in department of orthopaedics surgery with complains of a progressively growing swelling present on the palmer surface of the hand at the hypothenar region for last 6 months. There was history of trauma six months back. Initially the swelling was soft in consistency but with time it enlarged in size and also became hard. On clinical examination, a hard mobile swelling of approximately 3 x 2 cm was palpable on the ulnar boarder of the palmer surface of the hand. This swelling was located under the hypothener muscles of hand. No such other swelling was present elsewhere in the body, also there was no family history of such swelling was present. Investigations i.e. X-rays, MRI and CT scan were done along with other blood investigations to rule out other common diseases such as exostosis or myositis ossificance. Radiological investigations revealed a fairly circumscribed, ossified mass on the hypothenar region of the hand .The mass did

not seem to be associated with periostium and no cortical changes of underlying carpel or metacarpal bones were seen. MRI also revealed a well circumscribed calcified mass of 2.5 x 2 x 2 cm dimensions present under the hypothenar group of muscle of the hand.

When no conclusive diagnosis was made, we planned for the surgical excision of the swelling. Through a medial approach we excised a bony mass of size 3 x 2 x 2 cm which was lying freely between periosteum of 5th metacarpal bone and the hypothenar muscles of hand. This growth was hard in consistency with smooth surfaces. We closed the wound in layers and the sample was then sent for histopathological examination which stated gross finding as bony hard piece with small reddish hard area and white firm area seen on cutting the sample and microscopic finding as the mass consist of irregular loosely arranged fibroblast and myxoid matrix enclosing a number of irregular bone trabeclule which are rimmed by uniform osteoblast. No evidence of malignant changes seen and confirmed the diagnosis of fibro-osseous pseudo tumor of the digit.

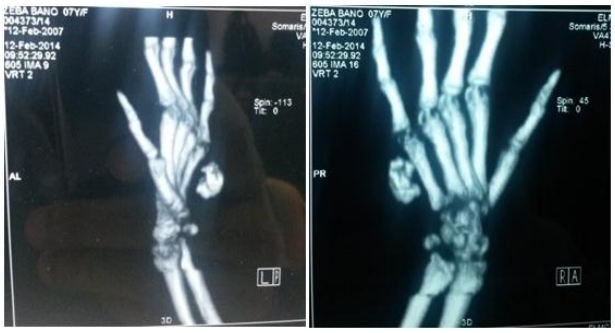

Figure 1: 3D computerized tomography shows a loose, well calcified, smooth mass seen over volar aspect on the medial side of left hand.

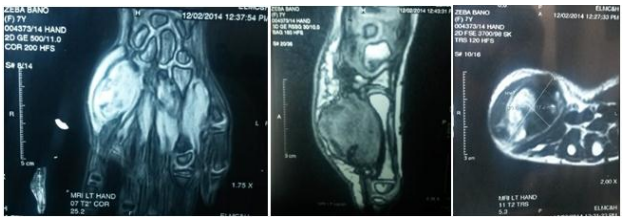

Figure 2: MRI showing a loose calcified mass of size 2.2 x 2 x 2 cm present between 5th metacarpal bone and the hypothenar muscles of hand without any central necrosis or signs of heterotrophic calcification/myositis ossificans.

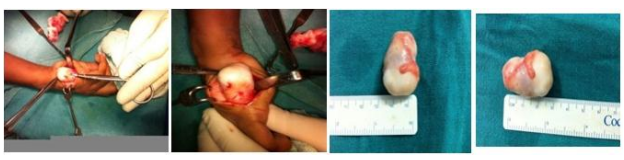

Figure 3: Intra-operative image showing the bony hard mass delivered through medial approach.

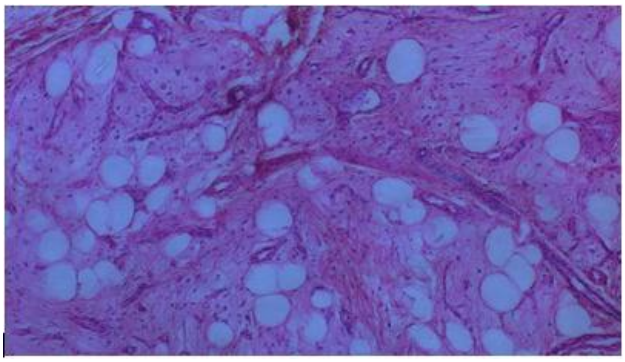

Figure 4: Histopathological slide showing irregular loosely arranged fibroblast and myxoid matrix enclosing a number of irregular bone trabeclule which are rimmed by uniform osteoblast.

DISCUSSION

Fibro-osseous pseudotumor of the digit is a rare benign ossifying lesion which had been called in the past by various names like florid reactive periostitis, parosteal fasciitis and fasciitis ossificans.[1] Dupree and Enzinger described it as a reactive rather than neoplastic lesion.[3] Fibro-osseous pseudo tumour has also been reported to present as a subungual tumour.[2] Pathogenesis of fibro-osseous pseudotumor is thought to be related to repeated trauma to the area; however a specific history of antecedent trauma was revealed in a small number of cases.[3] In our case there is history of trauma 6 months back, though there is no history of recurrent trauma.

Main pathologic differentials to this entity are myositis ossificans, subungal exostosis and extraskeletal osteosarcoma. Fibro-osseous pseudotumor is closely related to myositis ossifians and some authors regard it as a cutaneous counterpart of myositis ossificans. However, myositis ossificans usually occur after trauma, in the deeper aspect of proximal soft tissues, and histopathologically show a typical zonation pattern.[1] Extraskeletal osteosarcoma should always be ruled out, however it shows destructive stromal invasion, obvious cytologic atypia and immature ostoid directly formed by tumor cells. Prognosis of fibro-osseous pseudotumor is good with complete excision being curative without evidence of local recurrence as was seen in our case. Although histopathologic differentials are limited, but we suggest an algorithimic approach to diagnose fibro-osseous soft tissue lesions. First the stromal component should be evaluated for evidence of malignancy including nuclear atypia, pleomorphism, mitotic activity and growth pattern. If the stromal component of the tumor appear malignant, then the differentials include osteosarcoma and other dedifferentiated sarcomas with heterologous differentiation. Florid reactive periostitis of the tubular bones of the hands and feet and parosteal fasciitis are identical lesions.[4,5] On the other hand, if the stroma appear fibroblastic type then osseous component should be further uncovered for maturation and

osteoblastic rimming. With mature osteoid and prominent osteoblastic rimming, the main differential would be fibro-osseous pseudotumor and myositis ossificans. Distal and superficial location with absence of zonation pattern will favor the diagnosis of fibro-osseous pseudotumor while deep lesions in proximal location and zonation pattern will suggest the diagnosis of myositis ossificans. Even though there are no signs of malignancy in these case, chances of recurrence are still there so complete excision should be carried out i.e. revision surgery would be difficult or impossible.[6]

Fibro-osseous pseudotumor is a rare benign reactive condition diagnosis of which requires immense precision as it can clinically mimic unungal exostosis and can sometimes be misinterpreted clinically and radiologically as myositis ossificans. We suggested an algorithmic approach for the histopathologic interpretation of soft tissue fibro-osseous lesions.

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