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Myositis Ossificans: A Rare Case

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Abstract: Myositis ossificans is a benign ossifying soft tissue mass which occurs within the skeletal muscle usually following trauma and is a relatively rare entity, the etiology of which remains unclear. Myositis ossificans can be mistaken for malignant soft tissue sarcoma. Distinctive radiological features along with clinical history and histopathological examination help to arise at a definitive diagnosis. We present a case of myositis ossificans in 65 year old male patient complaining of painful hard swelling over shaft of tibia. X ray picture revealed areas of ossification in the mass with no continuity with the bone. The swelling was excised, which later on diagnosed as Myositis Ossificans. We present this case because of its rarity and to highlight its clinico-pathological features to emphasize the histopathology and avoid mis-diagnosis as sarcoma.
Keywords: Myositis ossificans, Atraumatica.

INTRODUCTION

Myositis ossificans (MO) is a relatively rare, benign, self limiting condition characterized by heterotopic metaplastic non-malignant bone formation in the skeletal muscle and soft tissue which is sometimes followed by trauma. The etiology of MO remains obscure [1-3].

CASE REPORT

A 65 year old male patient presented with 4x3 cm hard painful swelling 5cm proximal to medial malleolus since 2 months. The patient was farmer by occupation. There was no history of trauma, polio, tetanus, burns or paraplegia. X ray picture revealed ossified mass with no connection with adjacent bone. Fine needle aspirate of the lesion was suggestive of benign spindle cell lesion.

Histopathology

Gross- received a single globular gray white hard mass measuring 5x4.5x2cm covered with skin. Cut section revealed a lesion beneath the skin involving part of muscle, which was gray white firm in the centre surrounded by hard gritty areas of ossification.

Microscopy revealed a lesion in the muscle showing 3 distinct zones. Central zone of myxoid matrix mixed with fibroblasts surrounded by proliferative osteoblasts and osteoid matrix, the periphery of the lesion revealed mature bone (Fig. 1 & 2).

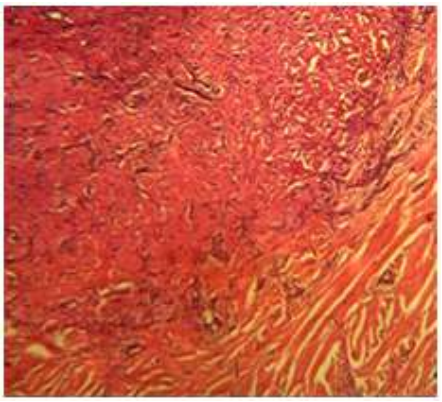

Fig. 1: Lesion within the skeletal muscle with central cellular area & peripheral rim of bone (40x H & E)

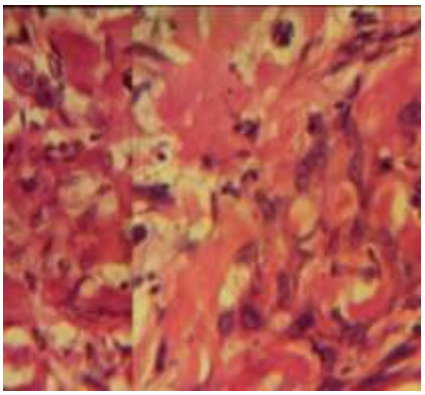

Fig. 2: Lesion showing 3 zones: Central zone- spindle cells in myxoid matrix, Intermediate zone –

deposits of osteoid rimmed by osteoblasts, peripheral rim – mature lamellar bone.(400x H & E)

Considering these histological features along with x ray finding and clinical history the diagnosis was offered as myositis ossificans atraumatica. Six months follow up of this patient is uneventful.

DISCUSSION

MO is a relatively rare condition characterised by development of a neoplastic bone in the skeletal muscle [4].

Synonyms include pseudomalignant osseous tumor of soft tissue, extraosseous localised non-neoplastic bone and cartilage formation, myositis ossificans circumscripta, pseudomalignant myositis ossificans and heterotopic ossification. The term MO is a misnomer as no evidence of inflammation is seen clinically and histopathologically [5].

60-70% cases are associated with history of trauma. Though no definite history of trauma was elicited in our case, patient was farmer by occupation so prone for injury. Patients without history of trauma are referred as pseudomalignant ossification [5]. Etiology of MO is obscure. MO is transmitted as an autosomal dominant trait, however most cases are sporadic [3].

MO is commonly seen in young adults less than 30 years of age with male predominance, though in our case it was observed in the late age. Common sites are shaft of log bone, same finding was noted in our case. In post traumatic cases, peak incidence is noted 4-12 weeks following an injury [6].

Lesion usually presents as painful rapidly growing and hard muscular mass. Similar history was noted in our case. Clinically lesion can be misdiagnosed as soft tissue sarcoma [2, 7].

MO can be classified into 4 types.

- MO progressive
- MO traumatic
- MO associated with neuromuscular and chronic disease
- Non- traumatic MO

Our case can be considered as non traumatic MO. Complications associated with MO are pain, contracture, spasticity and joint impairment [3].

Radiologic features

X ray revealed circumferential calcification with lucent centre and lucent zone which separates the lesion from cortex of adjacent bone [8]. USG, CT and MRI can give precise diagnosis though these investigations were not done in present case.

Histopathology

Histologically these cases can be classified into early, intermediate and late stages.

Early lesions are observed with 3-6 weeks of symptoms while intermediate lesion present with 6-8 weeks duration and microscopically they show central proliferating fibroblasts and myofibroblasts set in myxoid stroma with extreme cellularity merged with middle zone showing deposites of osteoid rimmed by osteoblsts while peripheral zone showing mature lamellar bone. In late stage, the lesion shows central area of fibrosis with thin walled ectatic vessels surrounded by mature lamellar bone ad these lesions present upto 10 years of duration [6]. Our case falls under intermediate stage.

Histological features offer differential diagnosis of MO as Nodular fasciitis and osteogenic sarcoma [2, 6].

In our case FNAC diagnosis offered was benign spindle cell lesion.

Proper clinical history, imaging studies and histopathological diagnosis helps to arrive at a definitive diagnosis.

Management

Surgical excision is indicated only when the lesion is completely ossified because removal of immature bone may lead to local recurrence. Prophylactic Indomethacin and Etidronate can be beneficial in reducing post surgical ectopic calcification [3].

Prognosis

MO has good prognosis. Recurrence after excision is rare [9].

CONCLUSION

MO is a rare clinical entity and can be mistaken clinically as osteogenic sarcoma leading to unnecessary amputation.

A proper history i.e. mass developing within short duration along with imaging studies can give clue for making pre-operative diagnosis. Histopathological examination gives definitive diagnosis.

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