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Fine Needle Aspiration Diagnosis of a Rare Case of Myositis Ossificans

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ABSTRACT:Myositis ossificans is a localized self limiting, reparative lesion composed of reactive hypercellular fibrous tissue and bone. It is characteristically encountered in young adults, commonly in males.The most common locations are elbow, thigh, buttock and shoulder.The rapid growth of these lesions associated with pain can be easily confused with malignant lesions like osteosarcoma ,soft tissue sarcoma and pseudosarcomatous lesions like nodular fasciitis and proliferative fasciitis.Awareness of its cytological features in correlation with clinical and radiological findings helps in diagnosing this rare entity.

Key words: Myosotis ossificans,distinguish from malignant and pseudosarcomatous lesions

I. INTRODUCTION:

Myositis ossificans is a localized self limiting, reparative lesion composed of reactive hypercellular fibrous tissue and bone. It is characteristically encountered in young adults, commonly in males.The most common locations are elbow, thigh, buttock and shoulder.[1]The rapid growth of these lesions associated with pain can be easily confused with malignant lesions like osteosarcoma,soft tissue sarcoma and pseudosarcomatous lesions like nodular fasciitis and proliferative fasciitis.[2] Fine needle aspiration cytology of this lesion is very rarely reported. Here we present FNAC features of a rare case of Myositis Ossificans in a young male.

II. CASE REPORT:

A 31 year old male presented to the hospital with painful swelling over left thigh since one month. Patient had history of trauma one month back. Ultrasound revealed a well defined calcified intramuscular collection of size 4.6x3.2x2.9 cms in medial aspect of left thigh with organized contour at periphery and central liquid part likely organized blood clot. MRI +MR Angiography revealed it to be a lobulated lesion suggestive of hematoma with significant muscle edema and fluid tracking along muscle planes. No definite bony lesion was noted. USG-FNA was done from this site. Smears received were stained with May Grunwald Giemsa and Papanicolaou stains.

III. RESULTS:

FNA smears were of low cellularity and revealed few fragments of spindle mesenchymal cells in a myxoid metachromatic matrix. Spindle cells showed oval to spindle nuclei with bland chromatin, minimal pleomorphism and elongated cytoplasm(Fig 1). Also seen were many osteoclastic giant cells with 5-25 nuclei(Fig 2). In addition, singly dispersed and small groups of cells with eccentric round uniform nuclei and moderate to abundant cytoplasm were seen. At places nucleus seems to be protruding from cytoplasm.These cells were consistent with osteoblasts(Fig 3). Occasional degenerated muscle fragments were seen. No necrosis or mitotic figures were identified.

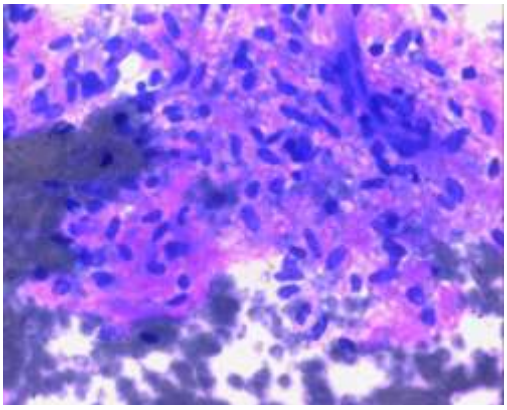

FIG 1

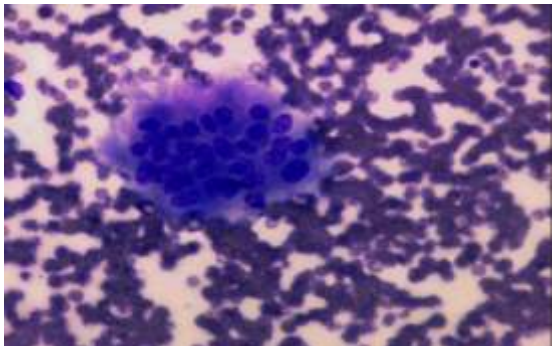

FIG 2

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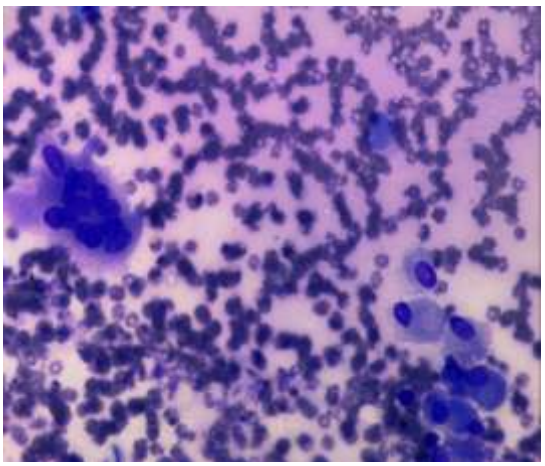

FIG-3

Considering the clinical history, radiological findings and FNAC findings, the cytological diagnosis of myositis ossificans was made.

IV. DISCUSSION:

Myositis Ossificans is a localized,self – limiting, reactive condition. It predominantly occurs in deep soft tissues. Fifty percent of patients have history of trauma in prior 4 - 6 weeks. Myositis Ossificans frequently mimics a malignant lesion clinically because of rapid growth associated with pain.[1] Myositis Ossificans passes through several histologic phases. In early phase it can be mistaken for fibrosarcoma and pseudosarcomatous lesions like nodular fasciitis and proliferative fasciitis.[2] Fibrosarcoma shows cellular smears with atypical spindle cells with coarse chromatin and often prominent nucleoli. Necrosis and atypical mitosis are commonly seen in fibrosarcoma. Nodular fasciitis shows cellular smears with myofibroblasts in a myxoid matrix with inflammatory cells. Proliferative fasciitis usually shows mononuclear giant cells with moderate to marked pleomorphism not seen in myositis ossificans. Intermediate phase is characterized by osteoid deposition and the emergence of zonation can be confused with osteosarcoma. Radiology can be helpful as Myositis Ossificans is separate from the bone and swelling remains in the muscle.[3] The distinguishing cytological features of Myositis Ossificans from osteosarcoma are low cellularity, lack of nuclear atypia and pleomorphism and the presence of degenerating muscle fibres, presence of benign fibroblasts and myofibroblasts. Late phase can be characterized by maturation of lesion with establishment of lamellar bone and marrow fat.[4] To the best of our knowledge, only 10 cases of Myositis ossificans have been reported on FNAC.

V. CONCLUSION:

Myositis Ossificans frequently mimics malignant lesions clinically, radiologically and cytologically. Awareness of its cytological features in correlation with clinical and radiological findings helps in diagnosing this rare entity.

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