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Cytodiagnosis Of Synovial Sarcoma, A Rare Case Report

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Abstract: *Synovial sarcoma is a rare malignant neoplasm accounting for 8% of all mesenchymal tumours. We hereby report a rare case of unsuspected biphasic synovial sarcoma of dorsal and ulnar aspect of left hand, which was diagnosed on fine needle aspiration cytology. Cytology smears revealed biphasic pattern comprising of spindle cells and epithelial cells. Cytodiagnosis of biphasic synovial sarcoma was suggested. Diagnosis was confirmed on histopathology.*

Key words- *Synovial sarcoma, Fine Needle Aspiration Cytology, Mesenchymal tumor*

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I Introduction

Synovial sarcoma is a rare malignant mesenchymal tumour comprising of 8% of all malignant mesenchymal tumours.[1] Fine needle aspiration cytology is commonly used for the diagnosis of soft tissue tumours; but very few reports describing cytological findings of synovial sarcoma have been there in the literature[2] Here we report a fine needle aspiration findings in a case of biphasic synovial sarcoma of hand, which was confirmed on histopathology.

II Case Report-

A 19-year old male presented to the surgery outpatient department with the complaints of swelling over left hand since 1 year. On local examination swelling was present over dorsal and ulnar aspect of left hand,measuring 5x4 cm, circumscribed, cystic & nontender(Figure1) Overlying skin was normal. Clinical diagnosis was ? Ganglion. MRI showed a well defined, lobulated mass with altered signal intensity area in intramuscular plane on the dorsal and ulnar aspect of left hand, measuring 5.6x5.4x3.5cm(Figure2). MRI findings were suggestive of neoplastic lesion. Fine needle aspiration of the mass revealed bimodal pattern comprising of spindle cells and epithelial cells(Figure3). Spindle cells were arranged in clusters and strands showing elongated nuclei with inconspicuous nucleoli, fine nuclear chromatin and scanty tapering cytoplasm. There was lack of anisonucleosis, pleomorphism. Epithelial cells were round with central/eccentric nuclei& scanty cytoplasm and arranged in glandular pattern or sheets. Cytodiagnosis of biphasic synovial sarcoma was suggested. Wide local excision was done and diagnosis of synovial sarcoma was confirmed on histopathology. Wide local excision was done. Specimen received in multiple pieces. Gross findings-Tumor mass was lobulated with fleshy appearance on cut surface. Histopathology showed classical bimodal pattern, composed of spindle cells arranged in interlacing, intersecting pattern and epithelial cells in glandular pattern(Figure4).

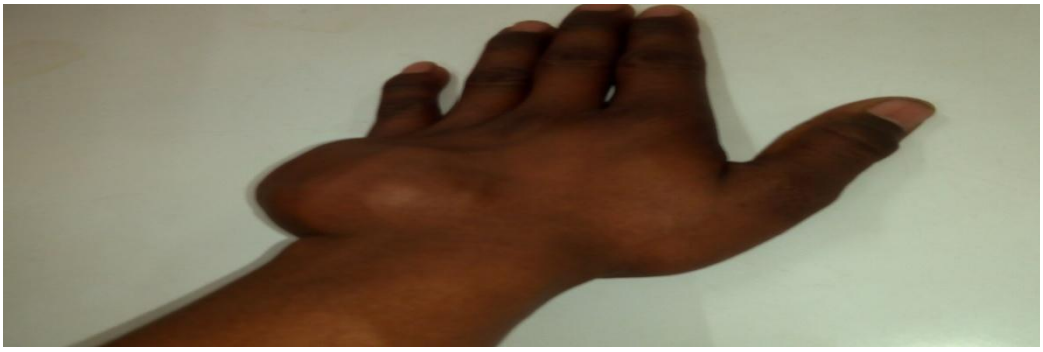

Figure1- Clinical photograph showing circumscribed swelling on dorsal and ulnar aspect of left hand.

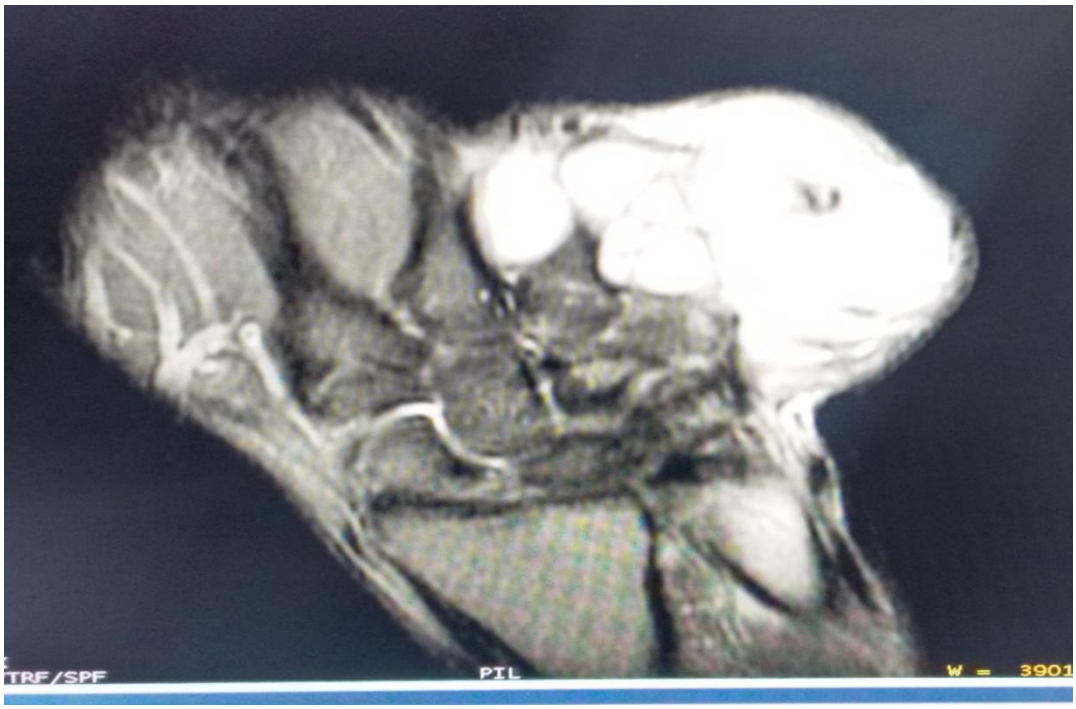

Figure2 MRI scan showing lobulated mass with altered signal intensity area in intramuscular plane of hand.

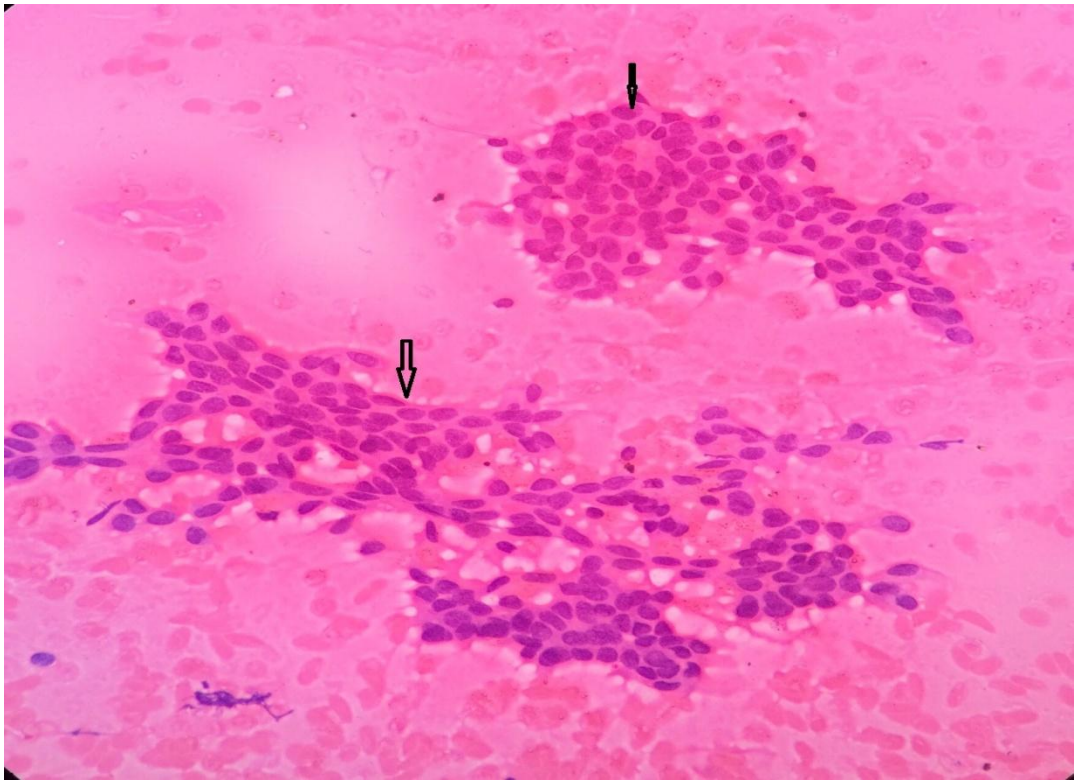

Figure3- Fine needle aspiration showing spindle cells in clusters(Open arrow) and epithelial cells in sheets and glandular pattern(Closed arrow) [H&E stain, X400]

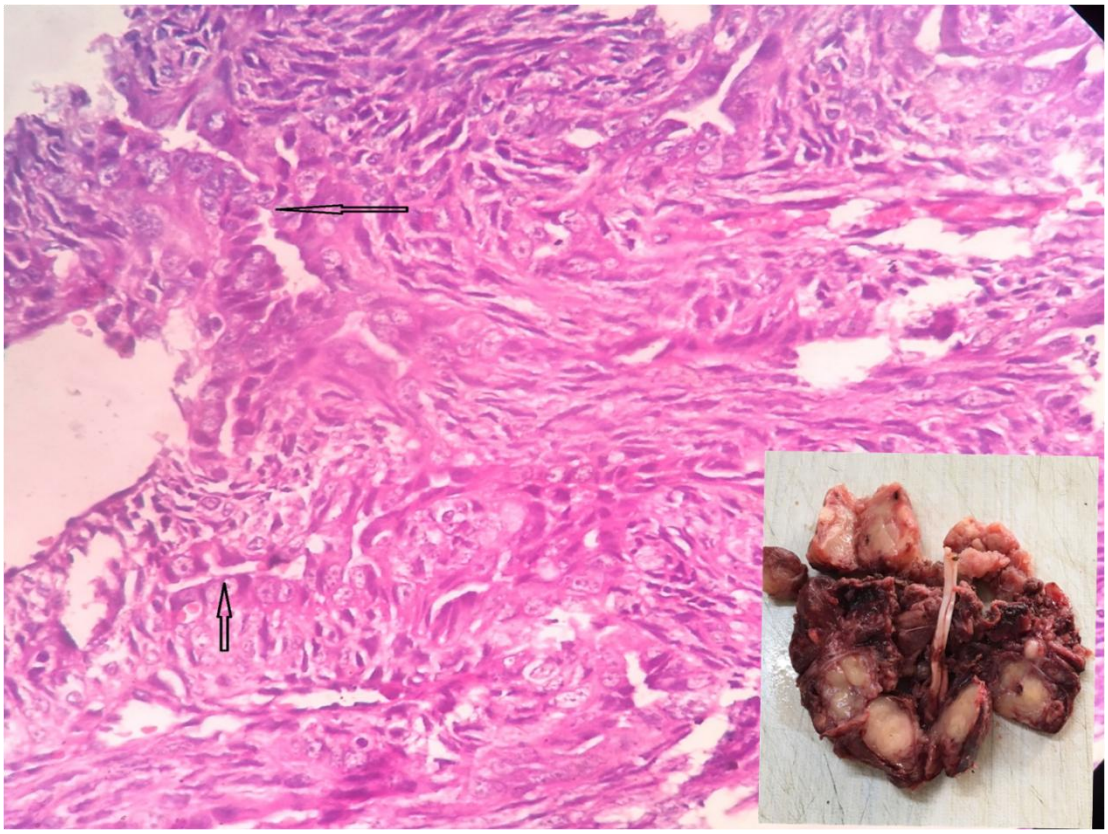

Figure 4- Histopathology revealed classical bimodal pattern(Open arrows showing glandular arrangement of epithelial cells. Inset showing Gross specimen multinodular mass, 5x4x4 cm, C/s fleshy, grayish white with areas of haemorrhage.

III Discussion

Synovial sarcoma accounts for approximately 8% of all soft tissue sarcomas.[1] It presents in adolescents and young adults. It manifests as rapidly growing large palpable and painful mass.[2] Khademi et al described a case of biphasic synovial sarcoma in parapharyngeal region.[3] Sood S et al reported a rare case of biphasic synovial sarcoma of anterior chest wall.[4]

In biphasic synovial sarcoma, the neoplastic spindle cells are generally more numerous and frequent than the epithelial cells, making distinction from monophasic synovial sarcoma or other spindle cell soft tissue tumors difficult. Although synovial sarcoma may be diagnosed by fine-needle aspiration cytology, clinical correlation, especially in monophasic types, is necessary to minimize errors in sarcoma classification. [5]

Aisner SC et al demonstrated the utility of aspiration cytology in diagnosing both unsuspected and recurrent synovial sarcoma.[6]

Authors suggested that the presence of epithelial cells is necessary for the diagnosis of biphasic synovial sarcoma. But this finding is rarely seen on cytology.[4] We report this case for the rare diagnosis on the basis of cytology. There was no clinical and radiological correlation. Radiological diagnosis was only neoplasm, not mentioned about benign or malignant neoplasm. But cytological findings of bimodal pattern, in a lesion were diagnostic of synovial sarcoma. So only on the basis of cytology, we suggested the diagnosis of synovial sarcoma. Diagnosis was confirmed on histopathology.

FNAC plays a major role in diagnosing synovial sarcoma pre-operatively. Cytodiagnosis of synovial sarcoma can be a challenging task owing to the varied cytomorphological appearences, possibly depending on whether the tumour is monophasic , biphasic or poorly differentiated. A specific diagnosis is possible when there is adequate cellularity and distinct biphasic pattern. It is rapid, easy and safe method for early diagnosis of synovial sarcoma.

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