ORIGINAL RESEARCH PAPER

Pathology

GIANT CELL TUMOUR OF TENDON SHEATH- A CYTOLOGICAL ASPECT

KEY WORDS: giant cells, soft tissue, tendon sheath, cytology

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ABSTRACT

Giant cell tumour of tendon sheath (GCTTS) is a unique soft tissue lesion of the hands and feet. It is the second most common tumour of the hand after ganglion. The pathogenesis of GCTTS is not known. This tumour is known to recur after excision. The primary knowledge of its existence and knowledge of its cytological features are important for a correct diagnosis. We present a case of GCTTS in right hand thumb of a 57-year-old male.

INTRODUCTION

Giant cell tumours of tendon sheath (GCTTS) or tenosynovial giant cell tumour is a slow growing neoplasm. It can occur at any age however the peak incidence is seen at third to fifth decade.[1] The origin and pathogenesis of the lesion remain undetermined. Several hypotheses have been proposed in this regard that include metabolic, neoplastic and inflammatory processes as probable etiological factors. [2] Although GCTTS most commonly presents in a digit of the hand, it may also present in the palm, wrist, foot, knee, ankle, elbow, and hip. [2] Fine needle aspiration cytology (FNAC) is an easy, quick, accurate, cost –effective and minimally invasive technique for diagnosis of GCTTS. Complete surgical removal is the treatment of choice. Here we present a case of GCTTS involving right hand thumb which was diagnosed on FNAC.

Case report

A 57 year old male patient presented with a soft tissue mass on the dorsal aspect of right thumb since two months. The swelling was measuring 1.2 X 1 cms, firm in consistency, non-tender, skin over the mass was pinchable. FNAC was done using 10-ml syringe with 23-G needle and aspirated hemorraghic material. The aspirates were cellular and contained a dual population of cells, consisting of mononuclear spindle cells and multinucleated osteoclast type of giant cells. The tumour cells were arranged as cohesive clusters, sheets as well as single cells. These cells were round to elongated exhibiting single bland nuclei and second group of multinucleated osteoclast type giant cells showed numerous round nuclei. Keeping in view cytologic findings, a diagnosis of GCTTS was made.

DISCUSSION

Giant cell tumours of soft tissues are slow-growing tumours and are of two types, diffuse type and localized type. [1,4] The diffuse type is rare and usually affects the lower limbs especially around the knee, followed by ankle, foot and occasionally affects the hand. The diffuse form is often locally aggressive with recurrence after excision.[5] This case report focuses on the common localized form of the giant cell tumour of the tendon sheath that is often found in hand and feet.

GCTTS usually presents as a soft tissue mass and diagnosis by FNAC is needed. In diagnosing GCTTS, it is necessary to consider other cytological lesions which have multinucleated giant cells- giant cell tumor of soft tissues/ bone, aneurysmal bone cyst, infectious granulomatous process and pleomorphic sarcoma.[6]

In giant cell tumour of soft tissues/ bone, the multinucleated giant cells have more nuclei usually >40 and the polygonal cells are more histiocytic compared to GCTTS. Aspiration of aneurysmal bone cyst is more bloody with less cellularity. In infectious granulomatous process, the cells forming granulomas are more cohesive than the GCTTS. Pleomorphic sarcoma shows marked cytologic atypia with frequent mitosis. The clinical correlation also helps in distinguishing these lesions with GCTTS. However rarely so, inadequate sampling from smaller tumours or due to faulty techniques, and selective sampling from topographic clusters of any individual component may lead to wrong interpretation.

The management of GCTTS is based on surgery which is difficult and should be performed correctly to avoid recurrences. The diagnosis of GCTTS should be evoked when there is evidence of digital swelling.

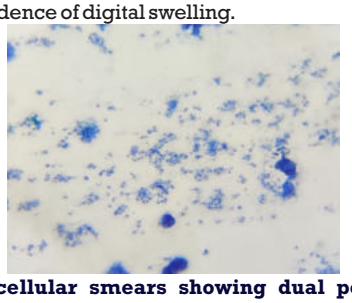

Figure 1-cellular smears showing dual population of multinucleated giant cells and mono nuclear stromal cells (papanicolouae stain X 40)

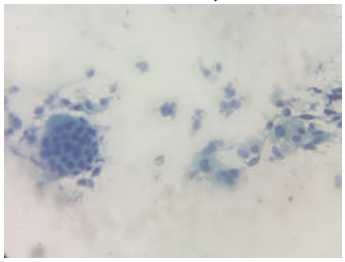

Figure-2- osteoclastic giant cell (papanicolouae stain X 400)

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