ORIGINAL RESEARCH PAPER

Orthopaedics

TENOSYNOVIAL GIANT CELL TUMOR CASE REPORT AND REVIEW

KEY WORDS:

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ABSTRACT

Tenosynovial giant cell tumor (TSGCT) is a rare benign tumor arising from joint synovia, bursae and tendon sheaths. Tenosynovial giant cell tumors are a group of generally benign intra-articular and soft tissue tumors with common histologic features. They can be roughly divided into localized and diffuse types. Localized types include giant cell tumors of tendon sheath and localized pigmented villonodular synovitis, whereas diffuse types encompass conventional pigmented villonodular synovitis and diffuse type giant cell tumor. Localized tumors are generally indolent, whereas diffuse tumors are locally aggressive. Localized forms are most frequent in the hands, and diffuse forms in the knee. MRI is necessary and sometimes sufficient for diagnosis. Treatment strategy is guided by progression, symptomatology and location. Optimally complete resection is the principle of first-line treatment Herein, we report a case of localized tenosynovial giant cell tumor (or localized pigmented villonodular synovitis) with circumferential involvement of flexor and extensor tendons of 4th digit of right foot.

INTRODUCTION

Tenosynovial giant cell tumor (TSGCT) or giant cell tumor of the tendon sheath is a family of lesions usually involving the joint synovia, bursae and tendon sheath. It may be intra- or extra-articular and is classified by clinical presentation and biological behavior as localized or diffuse; the latter is more aggressive, and is also known as villonodular synovitis [1].

While any location is possible, localized forms mainly involve the digits and wrist (85% of cases); foot and ankle, knee, hip or other joint locations are more rare. Diffuse forms mainly involve the large joints: knee, hip, ankle and elbow. Localized forms are systematically benign; diffuse forms are more aggressive and destructive and may exceptionally include a malignant component. This great diversity of anatomic and clinical presentations and biological behaviors underlies the difficulty of therapeutic management.

Report Of A Case

Patient presented with swelling of 4th toe since 8 to 9 months. It was gradually increasing in size which is making activities of daily living difficult and occasionally painful on exertion. Initially swelling was small in size but has increased to involve fourth digit both flexors and extension compartment and clinically near circumferential involvement.

There were no dilated veins, blood vessels and other local signs of malignancy

Management:

using dorsal approach excision of tumour was done Intra operatively, the extent of tumour was found to be involving extensor and flexor compartment also.

Taking care of neuro vascular structures, excision of tumour was performed and sent for biopsy

When And How To Diagnose Tsgct

TSGCTTSGCT is a rare pathology (incidence, 1/1,800,000) affecting young subjects [2]:

4th and 5th decades for the more frequent localized form; and a little earlier (< 40 years) for the diffuse form.

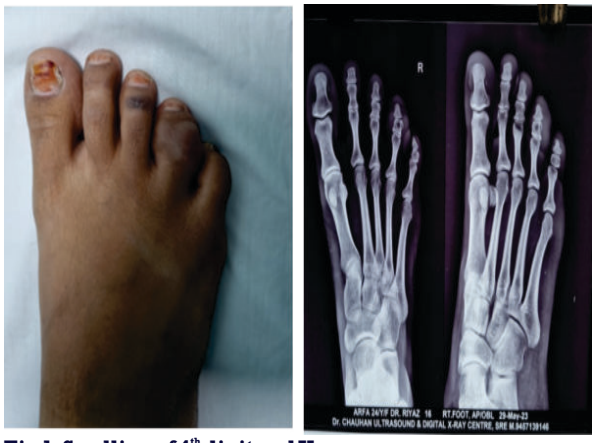


Fig 1: Swelling of 4th digit and Xray

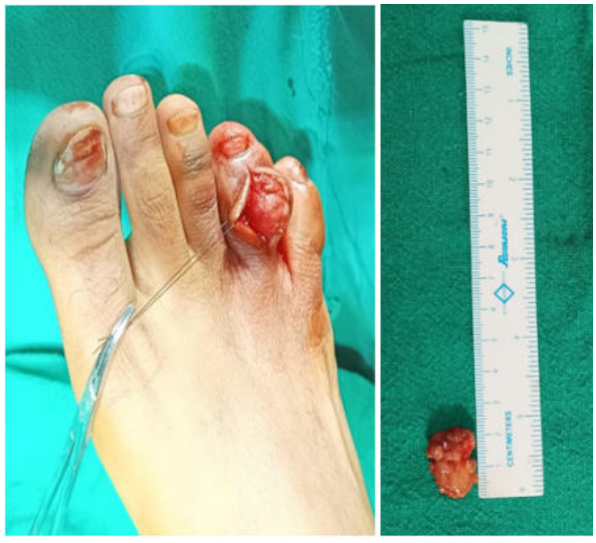
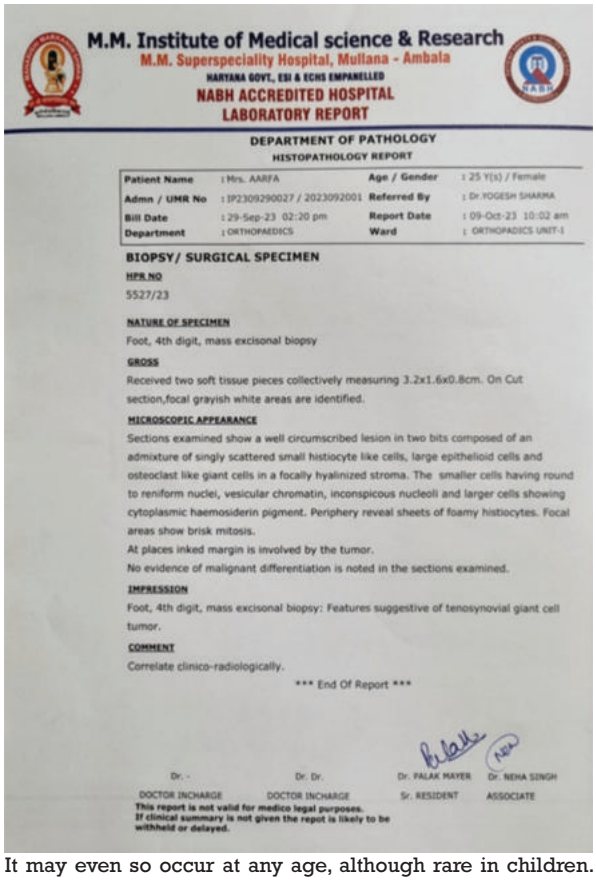


Fig 2: Intraoperative image and gross specimen

Fig 3:Tenosynovial Giant cell tumour on biopsy report



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HARYANA GOVT., ESI & ECHS EMPANELLED
NABH ACCREDITED HOSPITAL
LABORATORY REPORT

DEPARTMENT OF PATHOLOGY
HISTOPATHOLOGY REPORT

Patient Name	: Mrs. AARFA	Age / Gender	: 25 Y(s) / Female
Admn / UHR No	: IP2309290027 / 2023092001	Referred By	: Dr.YOGESH SHARMA
Bill Date	: 29-Sep-23 02:20 pm	Report Date	: 09-Oct-23 10:02 am
Department	: ORTHOPAEDICS	Ward	: ORTHOPAEDICS UNIT-I

BIOPSY/ SURGICAL SPECIMEN

HPR NO
5527/23

NATURE OF SPECIMEN
Foot, 4th digit, mass excisonal biopsy

GROSS
Received two soft tissue pieces collectively measuring 3.2x1.6x0.8cm. On Cut section,focal grayish white areas are identified.

MICROSCOPIC APPEARANCE
Sections examined show a well circumscribed lesion in two bits composed of an admixture of singly scattered small histiocyte like cells, large epithelioid cells and osteoclast like giant cells in a focally hyalinized stroma. The smaller cells having round to reniform nuclei, vesicular chromatin, inconspicous nucleoli and larger cells showing cytoplasmic haemosiderin pigment. Periphery reveal sheets of foamy histiocytes. Focal areas show brisk mitosis.
At places inked margin is involved by the tumor.
No evidence of malignant differentiation is noted in the sections examined.

IMPRESSION
Foot, 4th digit, mass excisonal biopsy: Features suggestive of tenosynovial giant cell tumor.

COMMENT
Correlate clinico-radiologically.

*** End Of Report ***

Dr. - DOCTOR INCHARGE | Dr. Dr. DOCTOR INCHARGE | Dr. FALAK MAYER Sr. RESIDENT | Dr. NEHA SINGH ASSOCIATE

This report is not valid for medico legal purposes.
If clinical summary is not given the repot is likely to be withheld or delayed.

It may even so occur at any age, although rare in children. Nodular forms are more frequent in females (2:1), whereas female predominance is slight in diffuse forms. Clinical presentation is relatively nonspecific, but TSGCT should be considered in the absence of evidence for any other synovial pathology. Localized forms predominate in the digits (85%), near to the synovial sheaths or interphalangeal joints, and more often on the palmar than the dorsal side. Other locations comprise wrist, foot and ankle, knee and, very rarely, hip or elbow [3]. The intra-articular localized form are mostly frequent in the knee. Diffuse forms are mainly intra-articular, in the knee (75% of cases), hip, ankle or shoulder, although all synovial joints may be involved: temporomandibular, spinal inter-apophyseal joints, etc. Involvement is usually of a single-joint or single locus; rare multi-focal cases have been reported, generally bilateral concerning the same joint (knee or ankle) or multifocal forms reported especially in children [4,5]. Extra-synovial soft-tissue forms mainly concern the knee, thigh or foot, in periarticular tissue although intramuscular and subcutaneous forms also exist. Interview reveals trauma in half of cases, although causality is unclear. Symptom progression is slow; intervals between first signs and diagnosis are long: 10 months to 3 years. However, acute forms have been reported, related to torsion and necrosis of a pediculated nodule. Functional signs are relatively nonspecific:

in extra-articular and tendon sheath forms, there is a very slowly progressing, painless mass that may cause skin tension in the fingers or toes, making footwear uncomfortable;

in articular forms, there is discomfort, with repeated swelling and restricted range of motion.[6];

asymptomatic forms or pseudo-degenerative presentations have been diagnosed, particularly in the knee. Clinical examination finds a soft palpable mass in superficial locations, sometimes associated with heat and periarticular effusion or edematous swelling.

The localized or diffuse lesion signal indicates the form of the TSGCT: variable tissue hemosiderin loading accounts for weak or intermediate signal on T1 and spin-echo T2-weighted sequences. The signal is enhanced on gadolinium injection. Gradient echo sequences are very useful for detecting hemosiderin deposits showing in low signal, even after injection [6]. Ultrasonography is now widely used; it does not replace MRI, but can be indicative, showing a mass of variable aspect but with suggestive location. TSGCTs appear hypervascularized on Doppler ultrasound [7], which optimally guides synovial biopsy.

What Surgical Procedure?

Presentation differs with location. The forefoot is the most frequent site, with mainly localized forms. Treatment is similar to that in the hand: maximal resection of pathological tissue, by open surgery in symptomatic and progressive forms. As in other locations, surgery should seek to limit iatrogenic risk in what is a benign pathology in which natural progression can show regression after partial surgery. When lesions are accessible, arthroscopy is preferable providing treatment without recurrence in the few reported cases[8,9]. In diffuse forms, usually associated with extra-articular involvement, open surgery is required, at least in primary treatment. Fusion may be necessary in case of destructive cartilage and/or bone lesions [8].

CONCLUSION

TSGCT is a benign entity, with relatively nonspecific symptomatology and slow progression. Diagnosis always requires histologic confirmation. Treatment is never urgent, and indications and modalities should be discussed according to symptomatology, progression and location. When indicated, primary surgical resection should be as complete as possible

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