

CASE REPORT

Giant Cell Tumor lesion of Tendon Sheath of Finger in Pediatric Age Group: A Rare Case Report

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Abstract: -

Giant cell tumor of tendon sheath (GCT-TS) of soft tissues are benign soft-tissue tumours which arise from tendon sheath and periarticular soft tissues of small joints. GCT-TS occurs most commonly in the hand (77 %) and less so in the ankle and foot (3%). Here we have described a paediatric case of a 9 year old male patient presented with 9 months history of gradually increasing swelling of right ring finger on palmar aspect. The surgical resection of the tumor done. The histopathological features and prognosis of the giant cell tumor of tendon sheath is described in this case report.

Key words: Benign, Excisional biopsy, Giant cell tumor, Hemosiderin, Osteoclast like giant cells.

Introduction: -

Giant cell tumor of tendon sheath (GCT-TS) is also designated as nodular tenosynovitis, localised villonodular synovitis, fibrous histiocytoma of the synovium, xanthogranuloma and benign synovioma. Giant-cell tumor of the tendon sheath is the second most common benign space-occupying lesion presenting in the hand (2-5%) after ganglion [1,2,3]. It is a rare, benign, soft tissue tumor [5,6,7]. GCT-TS occurs most commonly in the flexor tendons of the hands, followed by the ankles, toes, and knees [3]. This tumor usually presents as a painless, firm in consistency, mobile, well delineated soft tissue mass which grows slowly and can remain the same size for many years [4]. This article highlights the atypical occurrence of giant cell tumor along the flexor digitorum profundus tendon sheath.

Case report: -

A 9 year old male patient presented with 9 months history of gradually increasing swelling of right ring finger on palmar aspect.

On examination, a firm, non tender, non compressible swelling on volar aspect of proximal and middle phalanx of right ring finger was present. The swelling was mobile in both directions. The terminal movements of interphalangeal joint were restricted. The radiograph of right ring finger shows soft tissue swelling on volar aspect of middle phalanx without any bony involvement. FNAC of the swelling reveals scattered group of mononuclear cells with occasional osteoclast like giant cells. The patient underwent surgical excision of swelling via volar Z skin incision over the tumor. A nodular tumor with clear margins was found and easily excised. The patient was followed up for 2.5 years which shows no signs of recurrence and the patient had full range of painless movements over interphalangeal joints of right ring finger.

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Fig 1:- showing swelling over middle phalanx of right ring finger

Soft tissue shadow at the base of middle phalanx of right ring finger



Fig 2:- showing radiographic image of soft tissue shadow at the base of middle phalanx of right ring finger

Grossly, the excisional biopsy specimen measured around 2 cm, which is well circumscribed and lobulated. Cut specimen appears yellow and brown areas due to presence of xanthoma cells and hemosiderin pigments. Histopathology of the excisional biopsy showed a well-encapsulated tumor composed of mononuclear cells and osteoclast type of giant cells along with thick fibrous septa running through the tumor. Foamy cells, hemosiderin-laden macrophages, and cholesterol clefts were also seen which confirm the diagnosis of giant cell tumor of tendon sheath



Fig 3:- showing exposure of tumor through Z shaped incision via volar approach



Fig 4:- showing exposure of nodular tumor with clear margin



Fig 5:- showing excised nodular tumor with clear cut margins

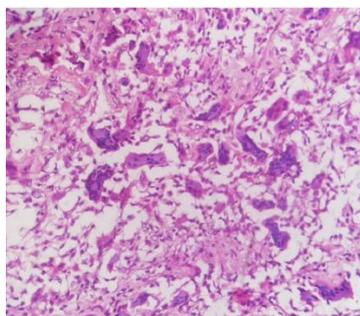


Fig 6:- showing large polygonal cell with vacuolated cytoplasm admixed with abundant osteoclastic giant cells in low power field

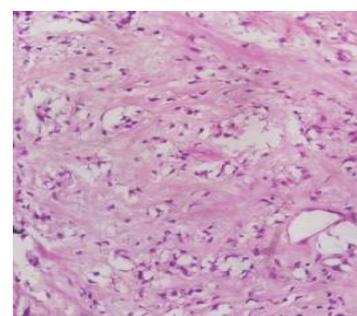


Fig 7:- showing large osteoclastic giant polygonal shaped cells admixed with fibro collagenous stroma

Discussion: -

Giant cell tumor of tendon sheath is also called as benign synovioma, localized nodular tenosynovitis, tenosynovial giant-cell tumour, fibrous histiocytoma of synovium, histiocytic giant-cell tumour, pigmented villonodular synovitis, xanthomatous giant-cell tumour, xanthoma of the synovium, xanthogranuloma, xanthosarcoma, fibrous xanthoma, fibroma of tendon, myeloid endothelioma, endothelioma, villous arthritis, sclerosing haemangioma, fibrohaemangiosarcoma, giant-cell fibrohaemangioma, and localized nodular synovitis [2-5,10].

GCT-TS of soft tissues are benign soft-tissue tumours which arise from tendon sheath and periarticular soft tissues of small joints. GCT-TS occurs most commonly in the hand (77%) and less so in the ankle and foot (3%). The causal association of GCT-TS with trauma is still remains unclear. The most accepted etiopathogenesis of GCT-TS is reactive or regenerative hyperplasia suggested by Jaffe et al. It is three times more common in females than in males. The age group affected is young to middle aged group. In most cases, the lesion presented as a slow-growing, painless, firm mass. Skin over the swelling is freely movable. There is no slip sign. Transillumination test is negative. Decreased range

of movement in the adjoining joints due to mechanical obstruction and bony erosion is caused by the swelling. Neurological symptoms like numbness over the finger tips are not of common finding in cases of GCT-TS [11].

Grossly the tumour mass appears small, well circumscribed solid with brownish cast. Microscopically, there are giant cells with polymorphic infiltrate of small histiocytes and multinucleated giant cells embedded in dense fibrous tissue with or without haemosiderin deposits [12]. GCT-TS is reportedly known for its local rate of recurrence of up to 45% after excision [5]. Adjuvant radiotherapy is recommended if there is a high risk of recurrence or when there has been incomplete excision of a histologically aggressive tumour with involvement of bone [8]. It may recur after excision and has the potential of turning into a malignant lesion, but it rarely metastasize [9]. The differential diagnosis remains foreign body granuloma, necrobiotic granuloma, tendinous xanthoma, infection, ganglion cyst, lipoma, knuckle pad, epithelial sarcoma, epitheloid formation [12].

Conclusion: -

Giant cell tumor of the tendon sheath is a rare, benign tumour of hand. Nevertheless, giant cell tumour of the tendon sheath should not be eliminated from the index of suspicion in nodular swellings of the hand. The basic aim of management should be early diagnosis with operative excision.

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