



GIANT CELL TUMOR OF TENDON SHEATH – A CYTO HISTO CORRELATION

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Abstract

Giant cell tumor of the tendon sheath (GCTTS) is a slowly progressing benign tumor arising from synovial cells of tendon sheaths. Chas-saignac first described the soft tissue mass in 1852. Hand is more frequently involved than any other part of the body. In fact it is a rare primary tumor of hand but is second most common among the soft tissue tumors of the hand. They occur more commonly on the palmar side of the hand. The age distribution is 8 to 80 years but is more common between 30 to 50 years. Female:male ratio is 3:2. They are usually non tender. Movements are usually not interfered and rarely erode the bone.Here we present a case of GCTTS in a 35 year old female patient over the right hand index finger which was diagnosed cytologically and histologically. History of recurrence also present in the present case.

Keywords: Giant cell tumor of tendon sheath,index finger,cyto histo correlation.

Introduction

Giant cell tumor of tendon sheath (GCT-TS) is a benign solitary tumor arising from the tendon sheath of the limbs. They occur more in the upper limb than the lower limb. The presentation is rare with only very few cases reported in the literature so far. It typically presents as a localised tumor arising from the complex of the tendon sheath of small joints of the hand and feet. GCT-TS of soft tissue is considered to be the counterpart of GCT of bone. They are benign soft-tissue tumors of the limbs which arise from the complex of tendon sheath and periarticular soft tissues of small joints. It has been reported to occur most commonly in the hand (77 %) and less so in the ankle and foot(3%).Here we present a case of GCT of tendon sheath involving right index finger with a recurrence history.

Case report:

A 35 year old female came to othopaedics department with complaints of painless nodular swelling over the right hand index finger since 1year.Three years back patient had similar complaints and it was diagnosed as GCT TS outside.She took local treatment outside and now she give similar complaints. Provisional diagnosis of GCT TS of the right index finger was made. MRI was done and diagnosed it as GCT of tendon sheath(Figure 1). On examination multiple, firm, non-tender, nodular swellings were present on the



right index finger. They were free from the skin but fixed to the flexor tendon sheath. Sensations and movements of the finger were normal. FNAC was done using 10ml syringe with 23 gauge needle and aspirated hemorrhagic material. FNAC show many multinucleated giant cells with occasional binucleate cells and few scattered cells with pleomorphic and hyperchromatic nuclei with prominent nucleoli (Figure 2). On FNAC we diagnosed it as GCT-TS of right hand index finger. Amputation of the finger was done upto the second metacarpal level and sent for histopathological examination. We received right index finger of size 3x1.5cm along with nail. Cut section show multiple cystic spaces along with grey yellow areas (Figure 3). On histopathology also it was diagnosed as GCT TS of right index finger showing multiple multinucleated giant cells along with singly scattered tumor cells (Figure 4).

Discussion

Giant cell tumors of soft tissues are slow growing tumors and are of two types, diffuse type (rare) and localized type (common). 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. This case report focuses on the common localized form of the giant cell tumor of the tendon sheath that is often found in hand and feet. These tumors winds around the flexor tendon, tendon sheaths, the digital nerves and the extensor tendons and may involve three fourths of the circumference of the involved digits. These growths are benign and usually present as multiple, firm, non tender swellings on the palmar side of the hand. Movements are not affected and the skin is not involved.

Despite the undetermined etiology, the clinical presentation, diagnosis, and surgical treatment of GCTTS are described. The tumor is most commonly diagnosed in the fourth and fifth decades of life (range, 4-82 years),^{1,2} with women affected more commonly than men (64.3% women).^{3,4,5} Although GCTTS most commonly presents in a digit of the hand, it may also present in the palm, wrist, foot, knee, ankle, elbow, or hip.³

GCTTS is most commonly found in the distal interphalangeal (DIP) joint^{3,5,6} and the proximal phalanx.³ Some authors describe an association with rheumatoid arthritis,⁵ while others describe an association with osteoarthritis;³ however, these findings are not replicated across large numbers of studies.

Treatment for giant cell tumor is local excision. Care must be taken to preserve the flexor tendons, extensor tendons, digital arteries, and nerves if possible. Because of the usual presence of a pseudocapsule, the tumor can often be removed en bloc. All surrounding tissues should be examined for satellite lesions, and such lesions and connections to these lesions should be excised. Rather than opening the entire site, satellite lesions can often be removed using a teasing technique,⁵ which utilizes gentle, slow dissection. If erosion of

the bone has occurred, curettage to remove the cortical shell is advised.⁴ Flexor and extensor tendons invaded by the tumor should be repaired.

Recurrence is a major concern in GCTTS, with rates of up to 44% being reported.⁶ In the case of recurrence, marginal excision of the tumor should be repeated. Functionality of the involved digit should be considered and may result in the decision to amputate for large tumors that interfere with function. In our case also history of recurrence is noticed.

Radiotherapy has been indicated as an adjuvant therapy for the prevention of recurrence. GCTTS is a rare, benign tumor of hand. Nevertheless, GCTTS 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. The following differential diagnosis such as foreign body granuloma, fibroma of tendon sheath, infection, ganglion cyst, rheumatoid nodule should be eliminated before confirming the diagnosis of GCTTS.

We present this case to highlight the role of FNAC in diagnosing certain rare tumors like GCTTS and the recurrence of the tumor if it is not properly treated.



Figure 1: MRI showing GCTTS involving volar and medial aspect of right index finger causing mass defect in the form of thinning and fracture of distal end of middle phalanx.

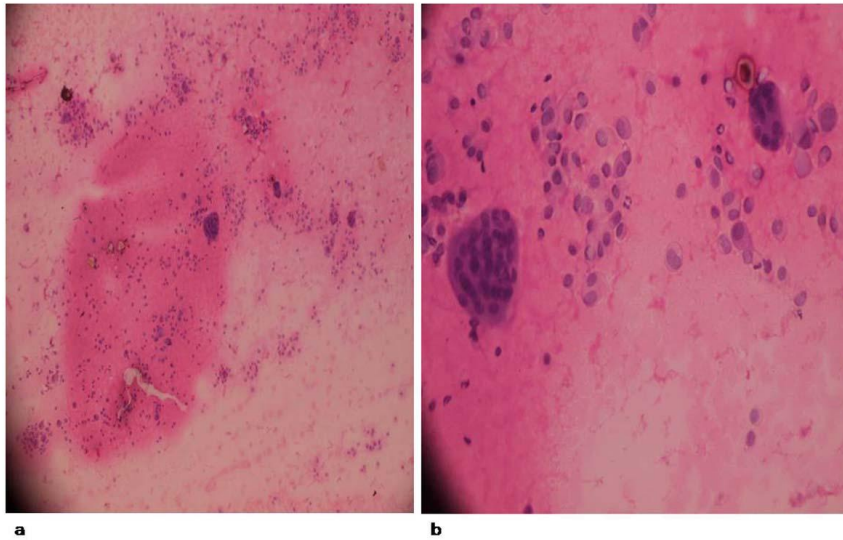


Figure 2: FNAC smears showing many multinucleated giant cells,with binucleate cells and scattered single cells with prominent nucleoli.(Fig a,H&E,x10.Fig b,H&E,x40)



Figure 3:Amputated right index finger (Fig a),cut section showing multiple cystic spaces along with grey white areas.(Fig b).

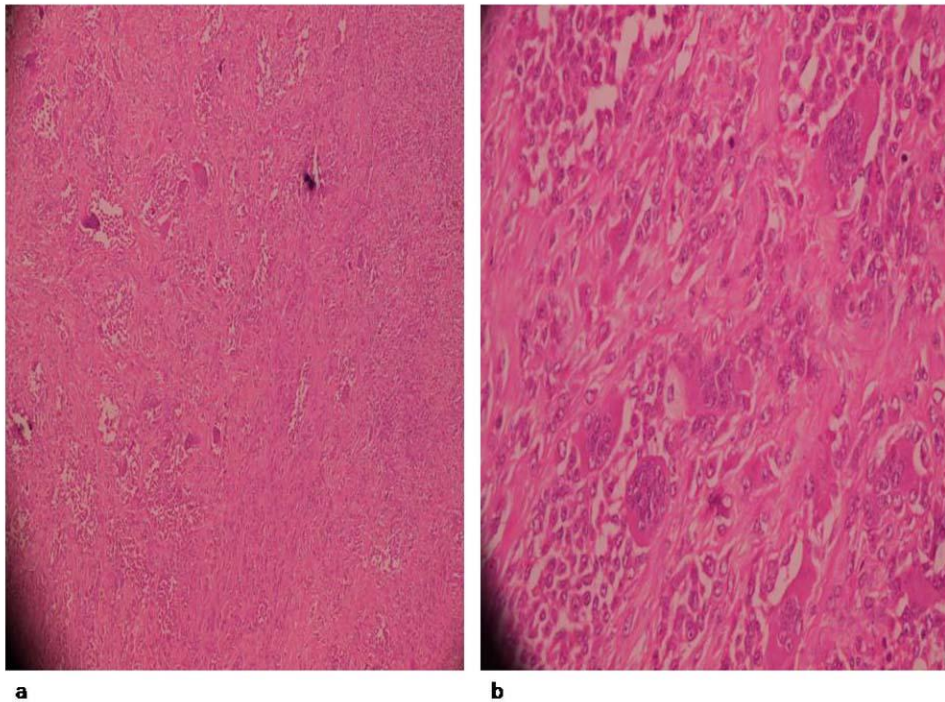


Figure 4: Histopathology showing multiple multinucleated giant cells and scattered single tumour cells (Fig a,H&E,x10.Fig b,H&E,x40).

References

1. Ushijima M, Hashimoto H, Tsuneyoshi M, Enjoji M. Giant cell tumor of the tendon sheath (nodular tenosynovitis). A study of 207 cases to compare the large joint group with the common digit group. *Cancer*. 1986;57(4):875-84.
2. Beekman F. Giant-cell tumors of the tendon sheaths. *Ann Surg*. 1915;62(6):738-45.
3. Jones FE, Soule EH, Coventry MB. Fibrous xanthoma of synovium (giant-cell tumor of tendon sheath, pigmented nodular synovitis). *J Bone Joint Surg Am*. 1969;51(1):76-86.
4. Walsh EF, Mechrefe A, Akelman E, Schiller AL. Giant cell tumor of tendon sheath. *Am J Orthop (Belle Mead NJ)*. 2005;34(3):116-21.
5. Glowacki KA. Giant cell tumors of tendon sheath. *J Hand Surg Am*. 2003;3(2):100-7.
6. Middleton WD, Patel V, Teefey SA, Boyer MI. Giant cell tumors of the tendon sheath: analysis of sonographic findings. *AJR Am J Roentgenol*. 2004;183:337-9.