



International Journal of Case Reports in Orthopaedics

E-ISSN: 2707-8353

P-ISSN: 2707-8345

IJCRO 2022; 4(1): 136-138

Received: 05-01-2022

Accepted: 15-02-2022

Dr. Pranabesh Sarkar

2nd year DNB PGT, Medica institute of Orthopedic Science, Kolkata, West Bengal, India

Dr. Anirban Chatterjee

Sr Orthopedic Consultant, Medica institute of Orthopedic Science, Kolkata, West Bengal, India

Dr. Vikash Kapoor

Director, Medica institute of Orthopedic Science. Kolkata, West Bengal, India

Dr Sanhita Chatterjee

Sr Consultant and HOD, Histopathology, Medica institute of Orthopedic science, Kolkata, West Bengal, India

Dr. Ejaz Bari

Sr Consultant and HOD, Department of Radiodiagnosis, Medica institute of Orthopedic Science, Kolkata, West Bengal, India

Corresponding Author:

Dr. Pranabesh Sarkar

2nd year DNB PGT, Medica institute of Orthopedic Science, Kolkata, West Bengal, India

Case report - Tenosynovial giant cell tumor in hand in a 15 years old boy

Dr. Pranabesh Sarkar, Dr. Anirban Chatterjee, Dr. Vikash Kapoor, Dr. Sanhita Chatterjee and Dr. Ejaz Bar

DOI: <https://doi.org/10.22271/27078345.2022.v4.i1c.106>

Abstract

Giant cell tumor of tendon sheath is one of the most common tumor of hand in the age group 3rd -5th decades of life. It is common in index finger followed by middle ring and little finger. Here in we present a report of a case of GCTTS in a 15 years old boy who presented in out-patient department with solitary nodule in his right thumb and histologically diagnosed as GCTTS after total excision.

Keywords: Giant cell tumor, tendon sheath, hand

1. Introduction

Giant cell tumor of tendon sheath is the second most common soft tissue tumor of hand after ganglion. It is slow growing tumor causing mild pain or painless. Overall incidence is 1 in 50000 individuals. Mainly affect in 3rd to 5th decades of life with slightly female predominance. 15% of total cases there is typical history of trauma but no causative correlation established. It commonly affects small joints of hands mostly index finger followed by middle, ring, little and thumb. Other joints like elbow, knee, ankle are also affected. Complete local excision is done. Recurrence occurs in 15-20% cases. Re-excision is done in recurrence cases.

2. Case report

A 15 years old right handed boy with athletic built presented in out-patient department with a solitary nodule in base of right thumb that appear 4 months back. Initially it was small in size, gradually increased in size. There was no significant history of trauma. It was not associated with pain and restricted range of motion. On examination a 1cm x 1cm solitary nodule present over ulnar side of base of right thumb. Nodule was mobile not fixed to skin or underlying structure. No local muscle wasting or dermatological changes. MR scan reveals 8.3 x 7.1 x 8 mm (ML x AP x SI) size nodular lesion in the subcutaneous plane medial aspect of the thumb at the level of mid shaft of proximal phalanx. It is hypointense on T1, hyperintense on T2 & STIR. It is abutting the flexor tendon & mid shaft of proximal phalanx, however not infiltrating it. The medial digital neurovascular bundle in relation to it. Complete excision of tumor done under regional block. Under loupe magnification lesion dissected out by combined blunt and sharp dissection. Ulnar digital nerve and vessel which were entrapped in the capsule of the lesion, dissected out and separated from the lesion and resected "en mass" and sent for histopathological examination. Microscopically section show a well circumscribed lesion composed of round to spindle shaped mononuclear cells and hyalinized stroma. Scattered osteoclast like multinucleated giant cell seen. There was no evidence of malignancy.

3. Discussion

Giant cell tumor arises spontaneously in hand. Some people feel after minor trauma [13]. In our case there was no history of trauma. Main affected age group 3rd to 5th decades of life GCTTS at 1st decades is not so common. John S. Hwang *et al*, 2016 release a case report where 9 years old boy was affected. GCTTS is second most common soft tissue tumor of hand [1]. In hand index finger is affected most followed by middle, ring, little and thumb. Hence the thumb is affected [Fig.1]. Sometimes it mimics with some other lesion like lipoma, synovial sarcoma, synovial cyst, ganglion [7]. There are some factors like trauma, metabolic, inflammatory that causes GCTTS. Although the World Health Organization (WHO) classifies as benign so-called fibro histiocytic tumor, there is debate regarding

whether it is true neoplasm or a pseudo neoplastic inflammatory response to soft tissue trauma [10]. It is currently accepted as a neoplasm, a hypothesis supported by the presence of clonal chromosomal aberration (translocation involving chromosome 1p11-13) [11]. In radiography there may be some osseous indentation or bony erosion or neurovascular bundle compromise due to pressure effect of the tumor. In this cases recurrence level is high [2].

MRI is the investigation of choice [14]. Dr Mohamed Saber et al, low intensity on both T1 -weighted and T2-weighted image in GCTTS. But in our patient there is heterogenous signal intensity. Heterogeneity of MRI signal depend on fibrosis, hemosiderin deposition and inflammatory condition [14]. Here in MRI reveals the medial digital neurovascular bundle in relation to it. During operation we found ulnar

digital nerve and vessel entrapped by the capsule [Fig.7]. Under loupe magnification the capsule separated finely from the neurovascular bundle [Fig.8]. MRI helps in differentiating giant cell tumor of tendon sheath from other soft tissue lesion like lipoma, synovial sarcoma, malignant the whole mass removed “en mass” with its thick capsule [Fig. 9] MRI is very helpful to know the preoperative extend of tumor of its plane. Whole tumor was covered with thick capsule. According to Al-Qattan classification it was type Ia [2]. Fig. 7 and Fig. 8 shows ulnar digital nerve entrapment of tumor and after removal of tumor. Fig.10 and fig. 11 shows spindle shaped mononuclear cells and hyalinized stroma, Scattered osteoclast like multinucleated giant cell and does not shows any malignant neoplasm. There is no recurrence 3 months after surgery.



Fig 1: Right thumb solitary swelling



Fig 2: right thumb solitary swelling



Fig 3: X-ray



Fig 4: MRI T2 hyperintense

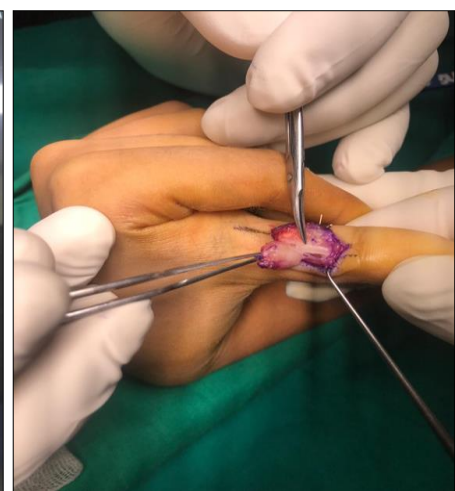


Fig 7: solitary nodule with capsule (intra-operative)



Fig 8: ulnar digital nerve and vessel

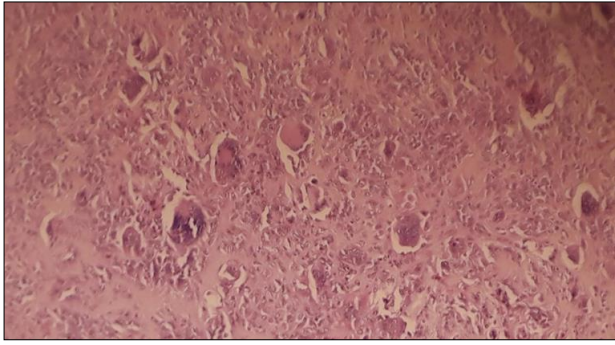


Fig 9: Solitary nodule



Fig 10: microscopically round spindle shaped mononuclear cell



Fig 11: Scattered osteoclast like multinucleated giant cell

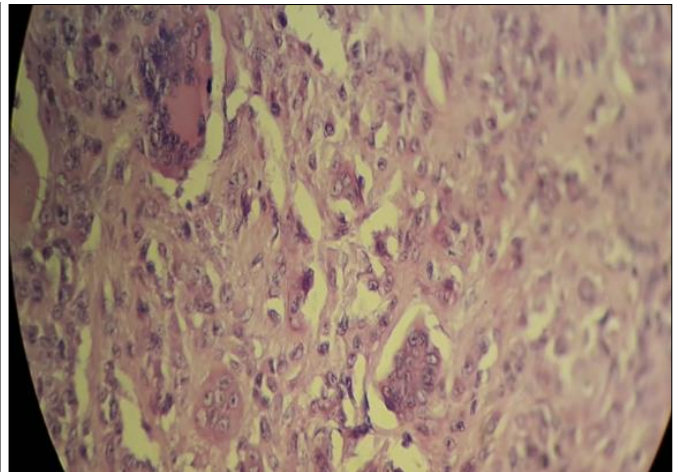


Fig 12: Three months follow up

4. Conclusion

GCTTS should be kept as differential diagnosis in soft tissue tumor of hand. Total excisional biopsy is the diagnostic and curative. But recurrence should be rule out by regular follow up.

5. Reference

1. Ushijima M, Hasimoto 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 common digit group, *Cancer*. 1986;57(4):875-884.
2. Al-Qattan MM. "Giant cell tumor of tendon sheath: classification and recurrence rate "-*Journal of hand surgery*. 2001;26(1):72-75.
3. John Hwang S, Valerie Fitzhugh A. Multiple Giant Cell Tumor of Tendon Sheath Found within a single Digit of a 9-Year-old"-case report in *Orthopedic*, 2016, 4.
4. David Lucas R. MD. Tenosynovial Giant Cell Tumor. Case report and review-*Arch Pathol Lab Med*. 2012;136:901-906. Doi:10.5858/arpa.2012-0165-CR
5. Dr. Mohamed Saber, *et al*. Tenosynovial giant cell tumor.
6. Hakan Ozben, Tamer Coskun. Giant cell tumor of tendon sheath in the hand: analysis of risk factor for recurrence in 50 cases". *BMC Musculoskeletal disorder*. 2019;20:457.
7. Ding Yi, *et al*. Tenosynovial Giant Cell Tumors Lacking Giant Cells: report of Diagnostic Pitfalls. *Annals of clinical and laboratory science*. 2014;44(2):222-227
8. Di Grazia S, Succi G. Giant cell tumor of tendon sheath: study of 64 cases and review of literature". *G. Chir*. May-June 2013;34(5/6):149-152.
9. Mukund Naresh Dhaniwala. A case report of Giant cell tumor of the flexor tendon sheath in index finger". *Journal of Orthopedic case report* 2019 November-December;9(6):78-81.
10. Vijay Goni. Unusual presentation of more common disease /injury "Giant cell tumor of peroneus brevis tendon sheath – A case report and review of literature. *BMJ Case Reports* 2012. Doi:10.1136/bcr.01.2012.5703
11. Rebuzzi, *et al*. Multiple syatemic treatment option in a patient with malignant tenosynovial giant cell tumor. *Wolter Kluwer Health*, 2020;31(1).
12. Zhenming LV, Jie Liu. Giant cell tumor of tendon sheath at the hand: A case report and review of literature. *Annals of medicine and surgery*. 2020;58:143-146.
13. Suresh SS, Hosam Zaki. Giant cell tumor of tendon sheath: Case seris and review of literature".*J Hand Microsurg*. July-December 2010;2(2):67-71.
14. Li Ch, Lui TH. giant cell tumor of the peroneous brevis Sheath ".*Journal of Orthopedic case report*. 2015 Oct-Dec;5(4):68-70.