*ejpmr, 2021,8(7), 699-701*

**SJIF Impact Factor 6.222**

**EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH**

www.ejpmr.com

Case Study

ISSN 2394-3211

EJPMR

# TENOSYNOVIAL GIANT CELL TUMOR OF HAND: A CASE REPORT

**Dr. Mukesh Kumar[1] and Dr. Ankit Panwar[2*]**

[1]MS General Surgery, Medical Officer, Regional Hospital Bilaspur (HP).
[2]MS General Surgery, Medical Officer, Civil Hospital Rajgarh (HP).

***Corresponding Author: Dr. Ankit Panwar**

MS General Surgery, Medical Officer, Regional Hospital Bilaspur (HP).

**Article Received on 20/05/2021** **Article Revised on 09/06/2021** **Article Accepted on 30/06/2021**

**ABSTRACT**

Tenosynovial giant cell tumors (TSGCT) or giant cell tumors of tendon sheath (GCTTS) are neoplasms that arise in the synovium. They are the most common form of giant cell tumors and second most common soft tissue tumor of the hand next to ganglion cyst. These tumors are more common in adults aged between 30–50 years and are more common in females. Magnetic resonance imaging is the diagnostic tool of choice for both diagnosis and treatment planning. The current standard treatment of choice is complete excision. The main concern about the treatment is related to the high recurrence rates. We present a case report of diagnosis and successful surgical management of a giant cell tumor over the metacarpophalangeal joint of the thumb of right hand of a 38 years old female.

**KEYWORDS:** TSGCT, GCTTS.

## INTRODUCTION

Tenosynovial giant cell tumor (TSGCT) is the second most common soft tissue tumor of the hand after ganglion cysts.[1,2] It is also called pigmented villonodular tenosynovitis (PVNS). TSGCT is a benign fibrous tissue tumor originating from the tendon sheath, bursae and joint synovium. It occurs at any age with peak incidences in the third to fourth decades; women are mostly affected.[3,4] The tumor usually appears as a painless, slowly growing mass on the volar surface of the fingers.[1,3,4] According to clinical and biological manifestations, it is divided into localized form and diffuse form. Also there are two types: intra-articular and extra-articular. Localized form is benign and involve the hand and fingers, while diffuse form is more aggressive and occurs in large joints.[5] GCTTS typically occurs near the distal interphalangeal joint of the index or long finger of the hand.[6] The major risks of GCTTS are recurrence and joint damage, which requires surgical resection. Due to its high recurrence rate, the tumor should be completely removed to reduce the possibility of recurrence. Radiographic and histo-pathological examination must be performed on the tumor, which is determined to be benign and does not require further treatment.

## CASE REPORT

A 38 years old female from Bilaspur district of Himachal Pradesh presented with a two years history of a painful, nodular swelling over the palmer aspect of her right hand near the root of thumb. The swelling was slowly progressive in size. On clinical examination there was a single swelling of size 2 x 2 cm over the palmer aspect of right hand near the first metacarpophalangeal joint. The swelling was firm in consistency, slightly tender and the surface was irregular. The movements of the underlying joint were normal. The patient had no history of smoking and alcohol abuse, and no family member had any history of related diseases.

X-ray examination showed the mass shadow without bone erosion. Due to non-availability of MRI and as per the requirements of the patient, surgical excision was planned. Complete surgical excision of the lesion was performed. (Fig 1) The mass was well circumscribed and sent to the pathology department for histopathological examination. (Fig 2).

Histopathological examination of the lesion (Fig 3&4) revealed localized type tenosynovial giant cell tumor composed of small stromal mononuclear cells with admixed large histiocytoid cells with eccentrically placed nuclei and moderate to abundant cytopasm. It had vague lobular architecture with fibrocollagenous bands separating the lobules. Osteoclastic giant cells and few foamy histiocytes were seen.

Post-operative follow-up was conducted every three months; the patient expressed her gratitude that there was no deformity or numbness. The patient made a full recovery without significant swelling and restriction of movements. The flexion and extension of the metacarpophalangeal joint were normal without any deformity six months after the operation. Meanwhile,

there was no clinical and radiologic evidence of recurrence.

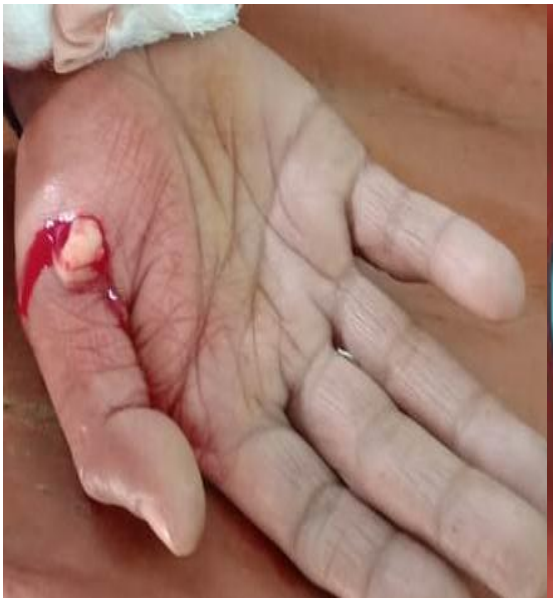

**Fig 1.**

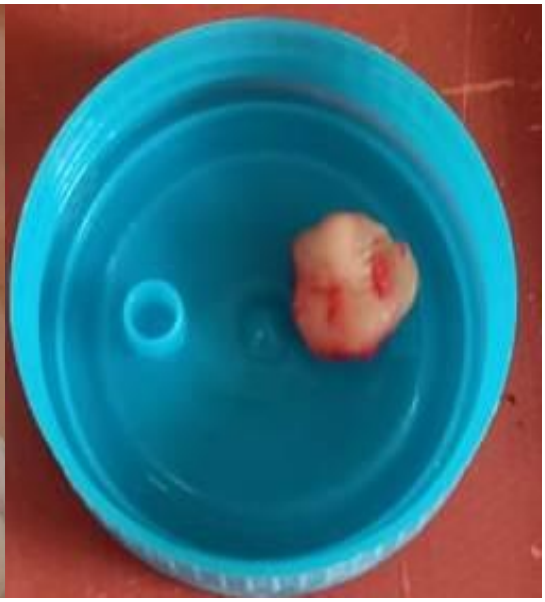

**Fig 2.**

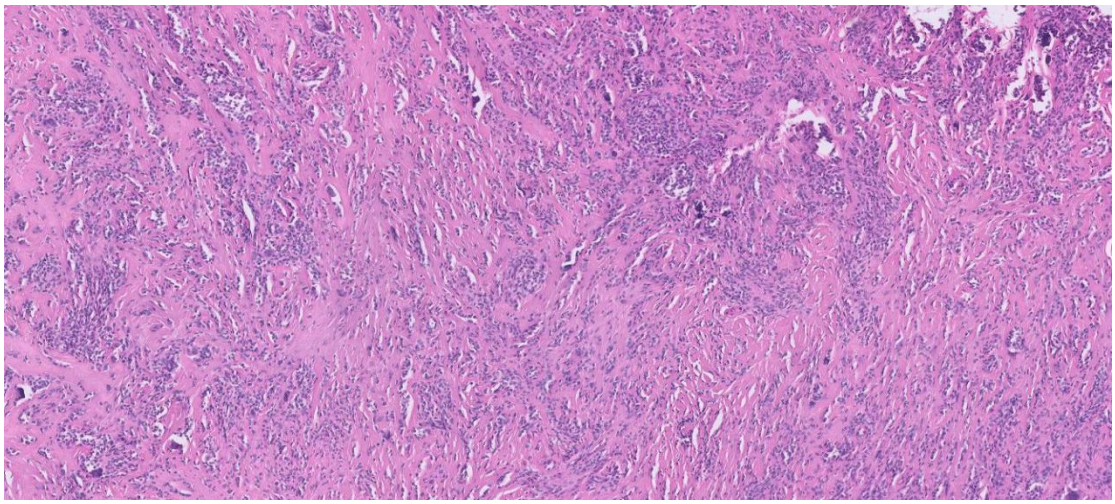

**Fig 3.**

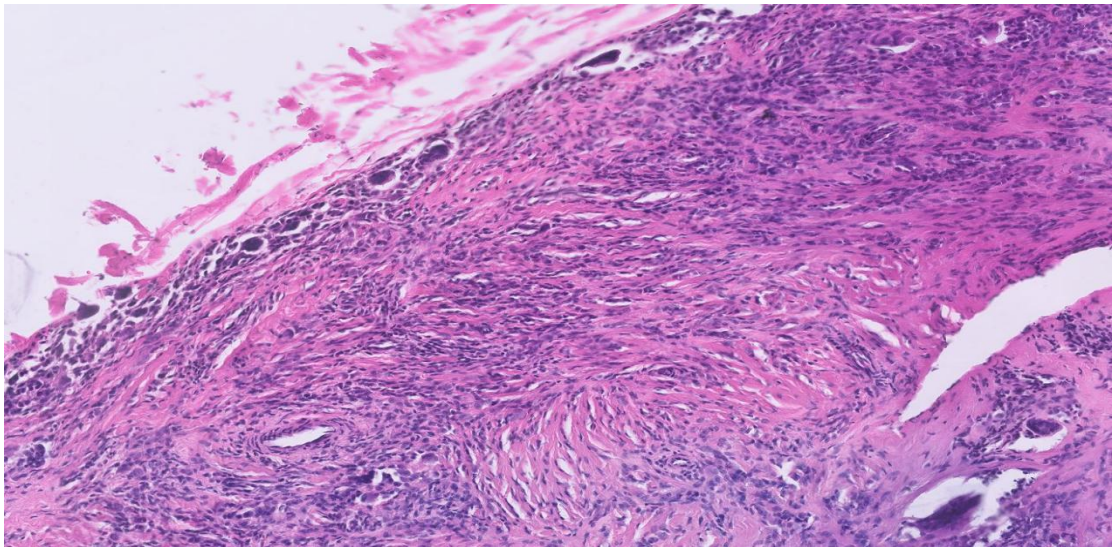

**Fig 4.**

## DISCUSSION

GCTTS (Giant Cell Tumor of Tendon Sheath) is a benign nodular tumor that is found on the tendon sheath of the hands and feet. Also known as pigmented villonodular tumor of the tendon sheath (PVNTS). It is second most common soft tissue tumor seen in the hand, following ganglion cyst. The etiology of GCTTS is uncertain, which may be related to inflammatory reaction process, local lipid metabolism disorder, osteoclastic proliferation, trauma, infection ect.[7] No such etiological factor was found in our case. It is present in 3rd-5th decade of life and is more common in females, as seen in our case the patient was a 35 year old female. It is most common on palmer surface of radial three digits near DIPJ. In our patient the tumor was present near the metacapophalangeal joint of the thumb of right hand. Symptoms are enlarging mass and pain which is worse with activity. Our patient presented with painful nodular mass at the root of right thumb. Physical examination reveals firm, nodular mass that does not transilluminate. In our case also there was firm noduar mass at the PIP joint of right thumb.

On imaging radiographs pressure-type bone erosion can be seen in up to 5% of patients. No such bone erosion was present in our case. Ultrasound is able to demonstrate relationship of lesion with adjacent tendon. MRI may be helpful diagnostically. The appearance of the focal form is generally decreased signal intensity on both T1-and T2-weighted MR imaging. Histology is characterized by proliferating histiocytes, moderately cellular (sheets of rounded or polygonal cells). Hemosiderin (brown color) may be present, but typically less than seen with PVNS. Multinucleated giant cells are common. Differential diagnosis includes ganglion cyst, pigmented villonodular synovitis (PVNS), desmoid tumor, fibroma/fibrosarcoma and glomangioma. Cystic component is present in ganglion cysts. Pigmented villonodular synovitis (PVNS) is histologically identical but it involves larger joints. The major risk of GCTTS is recurrence and joint damage.[8] Treatment is operative marginal excision. Recurrence rate is 5-50%. Recurrence is more common if tumor extends into joints or there is tendon involvement. Local recurrence is usually treated with repeat excision. Single most important factor to prevent recurrence is the complete surgical excision.[2,9,10] In hand tumors, the surgeon should not only remove the lesion, but also should consider the reduction of functional loss by reconstruction. Post-operative observation of the patient's hand movements or any deformity is important. In our patient flexion and extension activities were normal and there was no deformity. A follow-up of 3 years and more may be considered sufficient to rule out future recurrences. Prognosis is good as there are no reports of metastasis in literature.

## CONCLUSION

This case represents a rare case of GCTTS at the hand.. These are the neoplasms that arise in the synovium. Radiological investigations help in making the diagnosis and in planning the treatment. Recurrence is the single most important issue that preoccupies both the patient and the treating surgeon. Because of its high recurrence rate, the complete surgical excision remains the gold standard for treatment. The function of the hand should be reconstructed, to minimize the loss of function, if necessary.

## REFERENCES

1. Lucas DR. Tenosinovial giant cell tumor: case report and review. Arch Pathol Lab Med, 2012; 136: 901–6.
2. Darwish FM, Haddad WH. Giant cell tumour of tendon sheath: experience with 52 cases. Singap Med J, 2008; 49: 879–82.
3. Gouin F, Noailles T. Localized and diffuse forms of tenosynovial giant cell tumor (formerly giant cell tumor of the tendon sheath and pigmented villonodular synovitis). Orthop Traumatol Surg Res, 2017; 103: S91–7.
4. Di Grazia S, Succi G, Fraggetta F, Perrotta RE. Giant cell tumor of tendon sheath: study of 64 cases and review of literature. G Chir, 2013; 34: 149–52.
5. H. Al Farii, S. Zhou, R. Turcotte, The surgical outcome and recurrence rate of tenosynovial giant cell tumor in the elbow: a literature review, J. Shoulder Elbow Surg, 2019; 28(9): 1835–1840.
6. J.S. Hwang, V.A. Fitzhugh, P.D. Gibson, J. Didesch, I. Ahmed, Multiple giant cell tumors of tendon sheath found within a single digit of a 9-year-old, Case Rep Orthop, 2016; 2016: 1834740.
7. N. Kerfant, T. Bardin, E. Roulot, Multiple giant cell tumors of the tendon sheath : separate volar and dorsal lesions involving three digits of the same hand following repetitive trauma, J Hand Microsurg, 2015; 7(1): 233–235.
8. J.B. Stiehl, D.A. Hackbarth, Recurrent pigmented villonodular synovitis of the hip joint. Case report and review of the literature, J. Arthroplasty, 1991; 6(Suppl): S85–S90.
9. Al-Qattan MM. Giant cell tumours of tendon sheath: classification and recurrence rate. J Hand Surg Br, 2001; 26: 72–5.
10. Fotiadis E, Papadopoulos A, Svarnas T, Akritopoulos P, Sachinis NP, Chalidis BE. Giant cell tumour of tendon sheath of the digits. A systematic review. Hand, 2011; 6: 244–9.