International Surgery Journal
Korumilli RK et al. Int Surg J. 2018 Jun;5(6):2375-2377
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20182258

Case Report

Giant cell tumor of tendon sheath: a case series

Ramesh Kumar Korumilli*, Jakkula Srikanth, Sri Harsha Muvva, B. M. Yashwanth Reddy

Department of Surgery, SVS Medical College, KNR University of Health Sciences, Warangal, Telangana, India

Received: 06 April 2018
Accepted: 01 May 2018

***Correspondence:**
Dr. Ramesh Kumar Korumilli,
E-mail: rameshkorumilli@gmail.com

ABSTRACT

Giant cell tumor of tendon sheath is a relatively rare non-malignant soft tissue tumor arising from the synovial cells and is associated with high recurrence rate. Many factors are considered for high recurrence including proximity to distal interphalangeal joints, presence of degenerative joint disease, pressure erosions in the radiograph and increased mitotic activity. But the most common cause for recurrence is incomplete surgical excision. However, it is the second most common tumor in hands after ganglion cysts. Here we present a case series comprising of 3 cases for whom marginal excision was done and they were kept on regular follow up without any recurrence.

Keywords: Giant cell tumor, Hand, Recurrence, Tendon sheath

INTRODUCTION

Chasaignacc was first to describe giant cell tumor of tendon sheath in 18th century.[1] It is a slow growing, begnin and rare soft tissue tumor arising from the synovial cells of tendon sheath. GCT is a common tumor in hands and its incidence in amongst the fingers is as index finger followed by thumb, the long, the ring and then with little finger. It is second most tumor of hands followed by ganglion cysts.[2,3] Giant cell tumor of tendon sheath are associated with a high recurrence rate if proper marginal excision is not done. Possible etiological factors for GCT Trauma, inflammation, metabolic disease and a neoplastic etiology.[4,5] However majority of the case are of unknown etiology. A diagnosis can be made with help of Fine needle aspiration cytology (FNAC) and imaging studies. Marginal excision is the treatment of choice.

CASE REPORT

Case 1

An 18 year old female presented with a painless swelling over the proximal half of right thumb since 6 months. No history of trauma. Examination revealed a single, firm, lobulated, non-tender, non-trans illuminating mass, mobile only in the horizontal plane over the proximal half of the right thumb; skin over the swelling is pinchable.

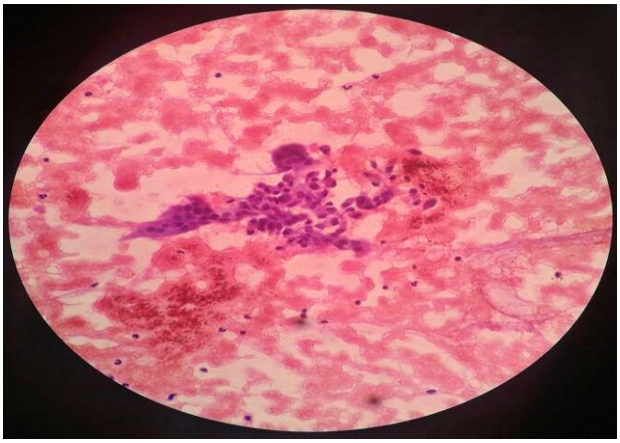

Figure 1: HPE Slide showing giant cells.

Radiological investingation revelaed no indentation of the bone and FNAC suggested GCT of tendon sheath.

Marginal excision was done and the specimen was sent for histopathological examination. HPE confirmed our diagnosis. Patient was on follow up for 2 years and no recurrence noted (Figure 1, 2).

Figure 2: Gross specimen.

Case 2

A 32 year old female came to our OPD with chief complaints of a slow growing, painless swelling in right ring finger since 1 year.

Figure 3: Pre operative picture.

Figure 4: Intra operative picture.

No history of trauma. On examination a 2x2 cms firm swelling in middle phalanx of the right index finger. No restriction of movement in the joint. Swelling has no movement in the vertical plane and restricted mobility in horizontal plan. With the help of FNAC and imaging studies a diagnosis of Giant cell tumor of tendon sheath was made. Marginal excision of the tumor was done and patient kept on regular follow-up (Figure 3, 4).

Case 3

A 45 year old male presented with a firm painless swelling in the left index finger since 7 months. History of trauma is associated with the swelling. On examination 3x2 cms swelling is noted in proximal phalanx of left index finger. Its firm in consistency with restricted mobility and skin over swelling is pinchable. FNAC followed by Marginal excision was done. HPE revealed partially capsulated lesion with larger polygonal cells with vacuolated granular cytoplasm and vesicular nucleus, along with areas showing osteoclastic type of tumor giant cells and many clusters of cholesterol cleft spaces which is confirmative of our diagnosis (Figure 5).

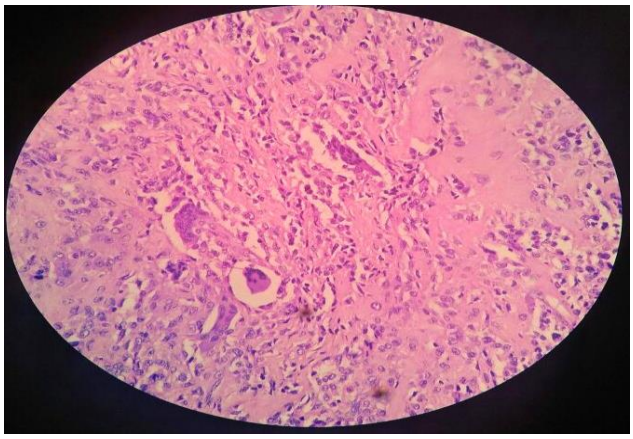

Figure 5: Histopathology slide showing multiple osteoclastic type giant cells.

DISCUSSION

Giant cell tumor of tendon sheath (GCTTS) is an extra-articular, localized and painless soft tissue swelling which has a longer duration. It is also called as fibrous histiocytoma of tendon sheath, Xanthogranuloma, and benign synovium.[6] Giant cell tumor of tendon sheath is commonly seen in third, fourth and fifth decades of life with a male to female ratio of 2:3.[7,8] Overall incident of GCT is one in 50,000 individuals. GCT is a common tumor in hands and its incidence in amongst the fingers is as follows index finger (29.7%) followed by thumb (12.9%), the long (24.6%), the ring (16.8%) and then with little (16%) finger. Possible etiological factors for GCT Trauma, inflammation, metabolic disease and a neoplastic etiology.[4,5] Many factors are considered as causing recurrence, including proximity to the distal interphalangeal joints, presence of degenerative joint

disease, pressure erosions in the radiographs and increased mitotic activity.[9] However the most widely accepted cause of recurrence is incomplete surgical excision of the tumor.

Byers classified GCTTS into two types i.e localized nodular which commonly occurs in hands and diffuse type which is more common in joints.[10] Diffuse variety is commonly associated with recurrence. Differential diagnosis include Ganglion cyst, pigmented villonodular synovitis, desmoids tumor, firboma, fibrosarcoma, glomangioma, knuckle pads and synovial sarcoma.

Sonography detects whether the tumor is solid or cystic and describes the relationship of the lesion to the surrounding structures. Information regarding the extent of contact with underlying tendon is possible with sonography.[11] X-ray helps us to identify if there is any underlying bone or joint involvement. FNAC of the tumor helps in making an accurate pre-operative diagnosis and thus facilitates a well planned surgical approach. On microscopy GCTTS shows multinucleated giant cells, polyhedral histiocytes, fibrosis, lipid laden cells and hemosiderin deposits. Mitosis and high cellularity were also seen in GCTTS however their relation to recurrence is debatable.[12,13]

Complete surgical excision remains the mainstay of treatment, assisted either with an operating microscope or a magnifying loupe. The recurrence rates after excision ranges from 7 to 45%.[14] Meticulous excision of giant-cell tumours of tendon sheath reduces the incidence of recurrence. Radiotherapy has been suggested after inadequate excision and in patients with high mitotic activity to prevent recurrence.[15]

CONCLUSION

Even though GCTTS is a benign tumor it is associated with higher recurrence rate. So, it is very important to make an accurate pre-operative diagnosis which helps in planning an appropriate surgical procedure thus decreasing the chances of recurrence.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Verheyden JR, Damron TA, Murray DG, Giant cell tumour of tendon sheath on Medscape. Available at eMedicine 2002. Accessed on 20th December 2013.
2. Darwish FM, Haddad WH. Giant cell tumour of tendon sheath: experience with 52 cases. Singapore Med J. 2008;49(11):879-82.
3. Uriburu IJF, Levy VD. Intraosseous growth of giant cell tumors of the tendon sheath (localized nodular tenosynovitis) of the digits: report of 15 cases. J Hand Surg Am. 1998;23:732-6.
4. Lowyck H, De Smet L. Recurrence rate of giant cell tumors of the tendon sheath. Eur J Plast Surg. 2006;28:385-8.
5. Reilly KE, Stern PJ, Dale JA. Recurrent giant cell tumors of the tendon sheath. J Hand Surg Am. 1999;24:1298-1302.
6. Fletcher CD, Krishnan K, Unni KK, Mertens F. World Health Organization Classification of Tumors, Pathology, and Genetics of tumors of Soft Tissue and Bone Lyon, France: IARC Press;2002:112-4.
7. Walsh EF, Mechrefe A, Akelman E, Schiller AL. Giant cell tumor of tendon sheath. Am J Orthop. 2005;34:116-21.
8. Schultz RJ and Kearns RJ. Tumors in the hand. J Hand Surg. 1983;8:803-6.
9. Rao AS, Vigorita VJ. Pigmented villonodular synovitis (Giant-Cell tumor of the tendon sheath and synovial membrane): a review of 81 cases. J Bone Joint Surg. 1984;66A:76-94.
10. Ikeda K, Osamura N, Tomita K. Giant cell tumour in the tendon sheath of the hand: importance of the type of lesion. Scand J Plast Reconstr Surg Hand Surg. 2007;41:138-42.
11. Middleton WD, Patel V, Teefey SA, Boyer MI. Giant cell tumors of the tendon sheath: an analysis of sonographic findings. Am J Roentgenol. 2004 Aug;183(2):337-9.
12. Messoudi A, Fnini S, Labsaili N, Ghrib S, Rafai M, Largab A. Giant cell tumors of the tendon sheath of the hand: 32 cases. Chirurgie de la Main. 2007 Jun;26(3):165-9.
13. Liu PT. Radiological reasoning: acutely painful swollen finger. American Journal of Roentgenology. 2007 Mar;188(3_supplement):S13-7.
14. Docken WP. Pigmented villonodular synovitis: a review with illustrative case reports. Sem Arthrit Rheum. 1979;9:1-22.
15. Kotwal PP, Gupta V, Malhotra R. Giant cell tumour of the tendon sheath- is radiotherapy indicated to prevent recurrence after surgery? J Bone Joint Surg. 2000;82B:571-3.

Cite this article as: Korumilli RK, Srikanth J, Muvva SH, Reddy BMY. Giant cell tumor of tendon sheath: a case series. Int Surg J 2018;5:2375-7.