Original Research Paper

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GIANT CELL TUMOR OF TENDON SHEATH – A CASE SERIES

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ABSTRACT This study presents a case series of Giant Cell Tumor of Tendon Sheath (GCTTS) from Vydehi Institute of Medical Sciences and Research Centre, Bangalore. Four cases were surgically treated and followed up for three months to one year, revealing no recurrence. GCTTS, though benign, commonly recurs post-surgery. Proper excision and regular follow-up are vital for effective management. Various diagnostic modalities and differential diagnoses are discussed, emphasizing the importance of complete excision to prevent recurrence. The study contributes to understanding GCTTS's clinical presentation, diagnosis, and management, providing valuable insights for orthopedic practice. **Introduction:**Giant cell tumor of the tendon sheath (GCTTS) is a benign soft tissue lesion commonly found in the flexor aspect of the hand and wrist. Despite surgical removal, the tumor often recurs. This study reviews four cases treated with excision and followed for three months to one year. **Materials and Methods:**This observational study examines four cases of GCTTS treated surgically. Postoperative monitoring lasted from three months to one year. **Observations:** None of the cases in our series experienced recurrence during the follow-up period, which contrasts with literature reporting recurrence rates of 10-40%. **Conclusion:** Regular follow-up care and complete excision are crucial for GCTTS due to its high recurrence rate. Recurrence is primarily influenced by incomplete excision and residual satellite nodules.

KEYWORDS :

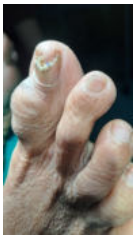
INTRODUCTION

Giant cell tumor of the tendon sheath (GCTTS), also called fibrous histiocytoma of the synovium and pigmented nodular synovitis, was first described by Chassaignac in 1852. It is a benign, slow-growing tumor typically found in the hand, second only to ganglion cysts, and most common in people aged 30-50, particularly women. GCTTS often presents as a painless swelling and has an overall incidence of 1 in 50,000 individuals. Etiological factors include trauma, inflammation, and metabolic diseases, though many cases have an unknown cause. Diagnosis relies on fine needle aspiration cytology (FNAC) and imaging, with marginal excision being the preferred treatment.

Case Reports

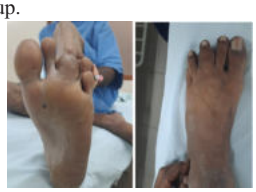
Case 1

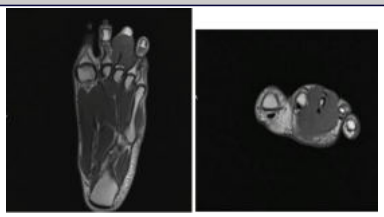
A 55-year-old female had a painless swelling on the right great toe for 1.5 years, painful on exertion. The swelling, located on the dorsal aspect of the great toe at the interphalangeal joint, was firm and non-tender. Histopathology revealed mononuclear cells with osteoclast-type giant cells. No recurrence was noted during one year of follow-up.

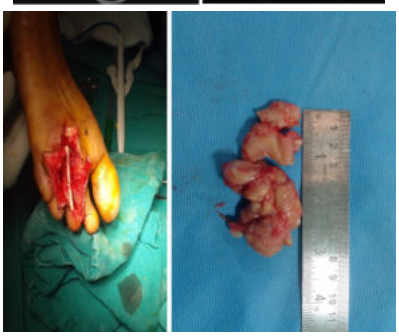


Case 2

A 30-year-old male reported pain and swelling in the 3rd toe for 4 years, initially painless but painful for the past year, associated with trauma. Examination showed a firm swelling in the left 3rd toe with restricted mobility. MRI revealed a lobulated lesion. Histopathology confirmed the diagnosis of GCTTS. No recurrence was observed at the 3-month follow-up.

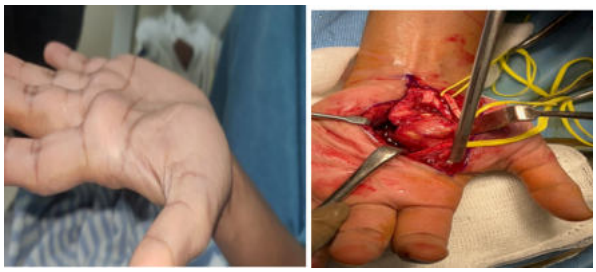






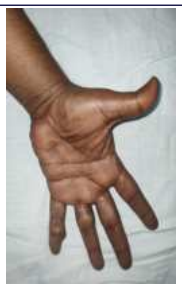
Case 3

A 49-year-old female presented with a painless, non-progressive swelling in the left hand. Examination revealed a firm, immobile swelling in the thenar aspect. MRI showed a lobulated lesion. FNAC and histopathological examination confirmed GCTTS.



Case 4

A 49-year-old male presented with pain and swelling in the left 5th finger for 2 months. Examination revealed a localized, hard swelling in the distal phalanx. Histopathology showed mononuclear cells with osteoclast-like giant cells. Regular follow-up was maintained.



DISCUSSION

Khan et al. highlighted the MRI features of GCTTS in the hand, noting the low signal intensity on T1 and T2 weighted images due to hemosiderin and collagenous stroma. The study underscores MRI's role in accurately diagnosing and managing GCTTS.[1]

Ueno et al. presented a case of GCTTS in a child, emphasizing the importance of considering GCTTS in pediatric differential diagnoses and the necessity of complete excision to prevent recurrence.[2]

Weiss and Goldblum's chapter in "Enzinger and Weiss's Soft Tissue Tumors" discusses benign tumors and tumor-like lesions of synovial tissue, including GCTTS. It provides comprehensive clinical, histological, and radiological descriptions and emphasizes the importance of complete surgical excision.[3]

Jaffe, Lichtenstein, and Sutro's article in Arch Pathol explores pigmented villonodular synovitis, bursitis, and tenosynovitis, discussing their relation to tenosynovial lesions and providing insights into the pathology of these conditions.[4]

Granowitz et al.'s article in Clinical Orthopaedics examines the pathogenesis and long-term outcomes of pigmented villonodular synovitis (PVNS), discussing etiology, clinical presentation, treatment, and recurrence.[5]

The diagnosis of GCTTS involves clinical, radiological, and pathological assessments. X-rays may show soft tissue densities and possible bony cortical erosion. Sonography helps in determining the tumor's nature and relationship to surrounding structures. MRI is essential for differentiating GCTTS from other soft tissue lesions, characterized by low signal intensity on T1 and T2 weighted images. FNAC aids in diagnosis. Microscopically, GCTTS includes spindled and polygonal stromal cells, multinucleated osteoclastic giant cells, hemosiderin-laden macrophages, and foamy histiocytes, with an absence of mitosis, necrosis, and high cellularity. Complete excision is vital to prevent recurrence, especially when tendons or joint capsules are involved.

CONCLUSION

GCTTS should be considered in differential diagnoses for hand or foot swellings. Excision achieves optimal cosmetic results, though incomplete dissection increases recurrence likelihood, typically occurring around two years postoperatively. Recurrence factors include adjacent degenerative joint disease, specific joint locations, and radiographic evidence of osseous pressure erosion.

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