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Case Study
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A Giant cell tumour of extensor tendon sheath in index finger: case study

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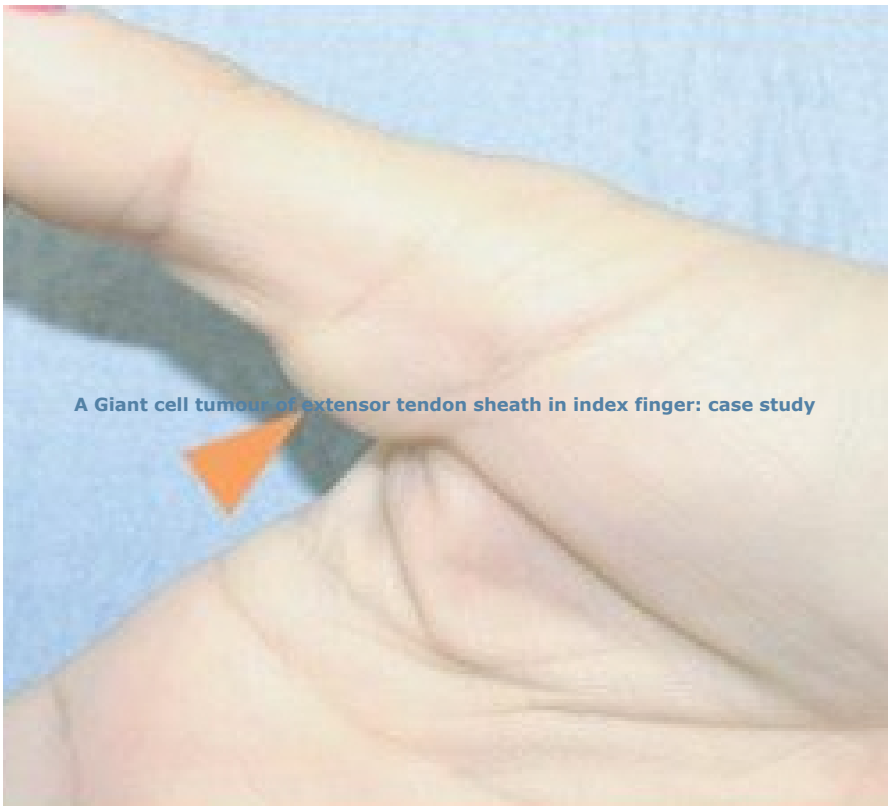

Abstract

Giant cell tumours in the extensor tendon sheath are rare neoplasms that commonly affect the hand and wrist. This case study presents a detailed analysis of a giant cell tumor located in the extensor tendon sheath of the index finger. The patient, a 33-years-old female, came with a painless, progressively enlarging mass at the dorso-ventral aspect of her index finger. The clinical examination and histopathological analysis had performed to confirm the diagnosis of giant cell tumor. After diagnosis, surgical excision of the tumor had performed under local anaesthesia, and the subsequently histopathological examination revealed the presence of multinucleated giant cells, mononuclear cells, and hemosiderin-laden macrophages indicative of Giant cell tumour. The patient experienced a favourable postoperative recovery, with no recurrence observed during the follow-up period of six month. This case emphasizes the significance of thorough histopathological examination in confirming the diagnosis and guiding the treatment strategy. Further research and studies has warranted exploring optimal treatment approaches and long-term outcomes for this rare entity.

Keywords: *Giant Cell Tumour, Tendon Sheath Tumour, Excision*

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Declaration

14% Plagiarism. Authors state no conflict of interest. Non Funded. The conducted research is not related to either human or animals use. All authors have accepted responsibility for the entire content of this manuscript and approved its submission.

Evidence in Context

What Know: Giant cell tumours in the extensor tendon sheath are rare neoplasms that commonly affect the hand and wrist.
What New: Further research and studies has warranted exploring optimal treatment approaches and long-term outcomes for this rare entity.

Introduction

Giant cell tumours of the extensor tendon sheath are uncommon neoplasms that primarily affect the hand and wrist. The multinucleated giant cells, mononuclear cells, and hemosiderin-laden macrophages in the histopathology can identify these tumours.[i] Although they has generally considered benign, their aggressive local behaviour and potential for recurrence necessitate timely diagnosis and appropriate management.

The index finger is second most affected sites for giant cell tumours of the extensor tendon sheath.[ii] These tumours often present as painless, slowly enlarging masses, leading to delayed diagnosis and treatment. The rarity of these tumours and their diverse clinical and radiological presentations further contribute to the challenges in their management[iii].

The objective is to provide the clinical presentation, diagnostic evaluation, treatment strategy, and postoperative outcome in this case. By examining the unique features of this case, main aim was to contribute and update the existing body of knowledge about the giant cell tumours.

This case study is not only highlights the importance of diagnosis, treatment, and outcomes of giant cell tumours in the index finger but also depicted the importance of early recognition and optimal management to prevent complications and preserve hand function.

Case Details

A 33-years-old female came with a painless mass on dorso-ventral of index finger since last 8 month. Onset of the swelling was spontaneous with no history of trauma. Swelling causes impaired movement of index finger with gradually increasing in size.

By local examination, 2.0 X 3.0 x 1.5 cm^3 firm swelling had noted at dorso-ventral surface of index finger (Figure 1) of Right hand, which extends from middle phalanges to base of distal phalange. Local temperature as well skin contour had found normal. Skin punch test was positive with no underlying attachment and swelling was easily movable. Swelling was uniform, smooth, and well defined with two lobes (interconnected both lobes: dorso-ventral). Movement of finger saw swelling movements. Peripheral sensation has found very normal.

By clinical examination, provisional diagnosis has made of "Giant cell tumour of tendon sheath."

Methodology

Excision of Swelling under local anaesthesia had planned to remove swelling after obtaining fitness for surgical procedure. Patient had priorly informed regarding possibility of recurrence of the swelling and consent regarding the same had taken from the patient as well from the relative.

After excision of swelling, for confirmation excised tissue had sent for Histo-pathology.

Pre-operative Procedure: All regular pre-operative procedure had carried out.

Operative procedure

An excisional biopsy of the underlying swelling had performed under local anaesthesia. Linear incision had performed on the dorsum swelling (Figure 2). For proper haemostasis, tourniquet had applied at the base of finger made up of gauze piece. Soft tissue blunt dissection with artery forceps had done and the tumour had seen adhered to the underlying extensor digitorum tendon of ring finger along with other lobe at ventral aspect. Excision of both the lobes of tumour done completely (Figure 3). The closure had done in layers and the tourniquet had released.

Post-operative care:

Histopathology reports depicted monomorphic round to spindle cells having round and scanty cytoplasm, with osteoclast type giant cells in collagenized stroma, which suggested teno-synovial giant cell tumor of tendon sheath (Figure 4).[i]

Postoperatively follow-up had held every six months, and a full recovery had noticed without any significant restriction of movement of the finger. The patient was able to perform her daily activities. No evidence of recurrence had noted on clinical examination.

Discussion

This article presents a detailed examination of a rare case of a giant cell tumor within the extensor tendon sheath of the index finger. This case study provides valuable insights into the clinical presentation, diagnostic process, and treatment modality.

Summary of the Case Study:
The case study focuses on a patient who presented with a gradually enlarging mass on the dorso-ventral part of their index finger. The article provided a thorough description of the clinical presentation along with diagnostic workup, which involved histopathology study. Finally, the study explores the surgical intervention employed to successfully remove the tumor and restore hand function.

Significance of the Study:
Giant cell tumours of the extensor tendon sheath are exceedingly rare, and their occurrence within the index finger is even more infrequent. Consequently, this case study holds significant importance as it adds to the limited body of literature available on this topic. The study contributes to the collective knowledge base, enabling future healthcare providers to recognize and manage similar cases more effectively.

Diagnostic Challenges:
One of the key aspects of the case study is the exploration of diagnostic challenges associated with giant cell tumours of the extensor tendon sheath. As these tumours often present as painless masses, they can be easily misdiagnosed or mistaken for other benign conditions. Here, importance of early diagnosis and early intervention and importance of complete excision to avoid recurrence of diseases was also justified.

The case study emphasizes the significance of a multidisciplinary approach involving pathologists, and surgeons to arrive at an accurate diagnosis.

Treatment Considerations:
The article highlights the surgical intervention employed in the case study, which involved complete excision of the tumor. The authors discuss the importance of complete resection to prevent recurrence and preserve hand function. However, the article does not extensively delve into alternative treatment modalities, such as adjuvant therapies or minimally invasive techniques, which could be an avenue for further research and discussion.

Clinical Implications:
The case study has several clinical implications that warrant attention. Firstly, it emphasizes the need for thorough evaluation and consideration of giant cell tumours in patients presenting with painless masses in the hand. Secondly, it highlights the significance of accurate diagnostic techniques to differentiate giant cell tumours from other pathologies. Lastly, the study underscores the importance of complete surgical excision and postoperative care to optimize patient outcomes. The findings of this case study can guide clinicians in making informed decisions when managing similar cases and contribute to improving patient care.

Conclusion

The case study on a giant cell tumor of the extensor tendon sheath in the index finger provides valuable insights into the clinical presentation, diagnostic challenges, and treatment considerations for this rare condition. By documenting the patient's journey from presentation to successful surgical excision, the authors contribute to the existing knowledge base and highlight the importance of multidisciplinary collaboration in managing such cases. This study has important implications for clinical practice, enabling healthcare providers to enhance their diagnostic accuracy and optimize treatment outcomes for patients with similar conditions.

Conflict of interest: There are no conflicts of interest.

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Patient Consent Declaration statement: The authors certify that they have obtained all
appropriate patient consent forms. In the form the patients have given their consent for their
images and other clinical information to be reported in the journal. The patients understand that
their names and initials will not be published, and due efforts will be made to conceal their
identity, but anonymity cannot be guaranteed.

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