JPRAS Open 40 (2024) 145–149

Contents lists available at ScienceDirect

JPRAS Open

journal homepage: www.elsevier.com/locate/jpra

Short Communication

Synovial Cyst of the extensor digitorum superficialis: A case report ☆,☆☆

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ARTICLE INFO

Article history:
Received 12 December 2023
Accepted 24 February 2024
Available online 28 February 2024

Key words:
Synovial cyst
Hand tumors
Surgery
Ganglion cyst
Tenosynovitis

ABSTRACT

Background: A synovial cyst is a herniation of synovial tissue through a joint capsule, often mistaken for a ganglion cyst. The key distinctions are that synovial cysts have a synovial cell lining, while a ganglion cyst is delineated by dense fibrous connective tissue. Typically found near joints, synovial cysts are associated with conditions like osteoarthritis, prevalent in females aged 20 to 50. We present a rare case of a synovial cyst in the extensor digitorum superficialis of the right hand.

Case summary: A 53-year-old Hispanic female visited our hand clinic due to a 3-year history of pain on the back of her right hand. At exploration, a 3 × 3 cm soft tumor was identified. Surgery revealed a clear-yellowish mass within the extensor digitorum superficialis tendon. Following the surgery, synovial cyst was confirmed by pathology and the patient was discharged without complications.

Conclusion: This case highlights the rare presentation of an intratendinous synovial cyst and emphasizes the importance of a com-

☆ We confirm that all authors have read and accepted the author guidelines. This manuscript has not been previously published nor is it under consideration elsewhere. The submission has unanimous approval from all authors.

☆☆ **CARE Checklist (2016) statement:** The manuscript was prepared and revised according to the CARE Checklist (2016) Statement.

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https://doi.org/10.1016/j.jpra.2024.02.014

prehensive understanding of synovial cysts in the differential diagnosis of hand tumors.

Background

A synovial cyst is a herniation of synovial tissue through a joint capsule, lined by synovial cells. It is often confused with a ganglion cyst, leading to the referral of both as synonyms. To difference them, synovial cysts have a synovial cell lining and inflammatory fluid, while a ganglion cyst are delineated by a dense fibrous connective tissue and have a more viscous content made of hyaluronic acid and mucopolysaccharide.[1]

They are usually located in the juxta-articular popliteal region and dorsal wrist and have a higher prevalence in females aged 20 to 50 years.[2] Although ganglion cysts are more frequent than synovial cysts, only 12 cases of ganglion cysts of the wrist and hand extensor tendons have been reported.[3] As for synovial cysts, we encountered only two cases of intratendinous synovial cysts of the wrist and hand extensor tendons: one within the abductor pollicis longus tendon[3] and other in the tendon sheath of the index finger extensors.[4] We present a rare case of a synovial cyst located in the extensor digitorum superficialis of the right hand.

Case presentation

A 53-year-old Hispanic female with a history of hypertension presented to the hand clinic at our hospital, reporting the presence of pain for 3 years on the back of the right hand. Eighteen months after the onset of symptoms, a tumor with a gradual increase in volume developed, accompanied by difficulty in completely closing the hand and itching. She has been treated conservatively, without success.

At clinical examination, a soft tumor was detected on the back of the hand, measuring approximately 3 × 3 cm, with soft consistency, without being attached to deep structures and slightly painful to the touch When opening and closing the hand, cranial and caudal mobilization of the tumor was appreciated, clinically indicating that it was attached to a tendinous component of the extensor apparatus (Figure 1). Based on clinical correlation, our suspicion of a synovial cyst was high, so she was scheduled for surgery.

A horizontal incision of approximately 4 cm was made on the back of the hand, identifying a mobile mass with a clear-yellowish appearance, compatible with the suspected diagnosis. The lesion, located within the 3rd tendon extension of the extensor digitorum superficialis tendon, was identified (Figure 2). An attempt was made to perform a careful dissection; however, the content ruptured intraoperatively. The lesion was extracted and sent to the pathology service, where the suspected diagnosis was confirmed. Following the surgical procedure, the patient was discharged without complications.

Discussion

The exact pathology of a synovial cyst is still unclear. It is believed to be an effusion secondary to internal joint derangement, leading to an increase in intraarticular pressure that forces joint fluid through a one-way valve mechanism into the area of least resistance.[1,3]

While ganglion and synovial cysts may exhibit similar clinical features, it is important to distinguish between them to ensure proper follow-up of synovial cysts, given their frequent association with degenerative conditions that may impact other systems.[1,4]

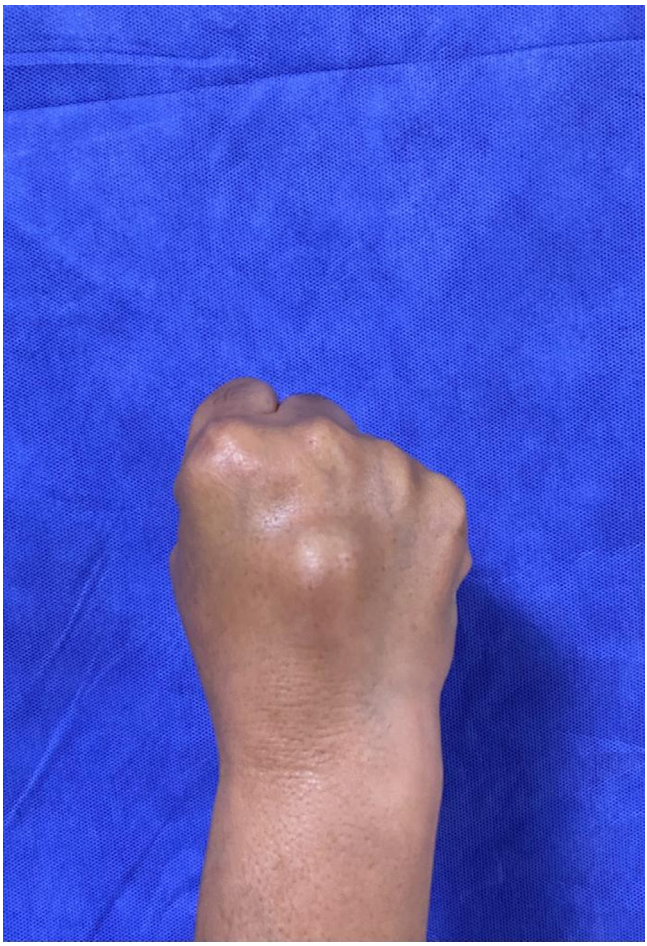

Figure 1. Exploration of the dorsal aspect of the hand with a closed fist unveils the dimensions of the synovial cyst nestled within the tendon.

The treatment for both synovial cysts and ganglion cysts is similar, involving conservative management such as cyst aspiration or surgery. Surgery becomes the definitive treatment for both pathologies when pain, weakness, and limitation of motion interfere with daily activities[2]

Surgery is performed under general anesthesia or regional block of the brachial plexus. A transverse skin incision is made over the palpable ganglion. Then the surgeon carefully isolate the cyst, trying not to rupture it. If the cysts are not extremely adherent to adjacent soft tissue, the cysts are mobilized down to the joint capsule for further excision. If it is extremely adherent, the cyst could be ruptured to make the dissection easier.[5] If reconstruction is needed, transferring a slip from the adjacent tendon could be useful.[4] The most common complication of cysts is the recurrence, being from 8 to 40% in dorsal ganglion cysts[5] and between 17% and 20% in dorsal synovial cyst.[2] This is strongly associated with incomplete resection, so follow up is very important.[4]

This case highlights the rare presentation of an intratendinous synovial cyst in the extensor tendons of the hand. It emphasizes the significance of having a comprehensive understanding of synovial cysts in the differential diagnosis of hand tumors due to the degenerative implications associated with this pathology. Surgery remains as the gold standard treatment aiming for complete excision of both type of cysts. The unclear etiology of synovial cysts and their potential association with tenosynovitis warrant further investigation.

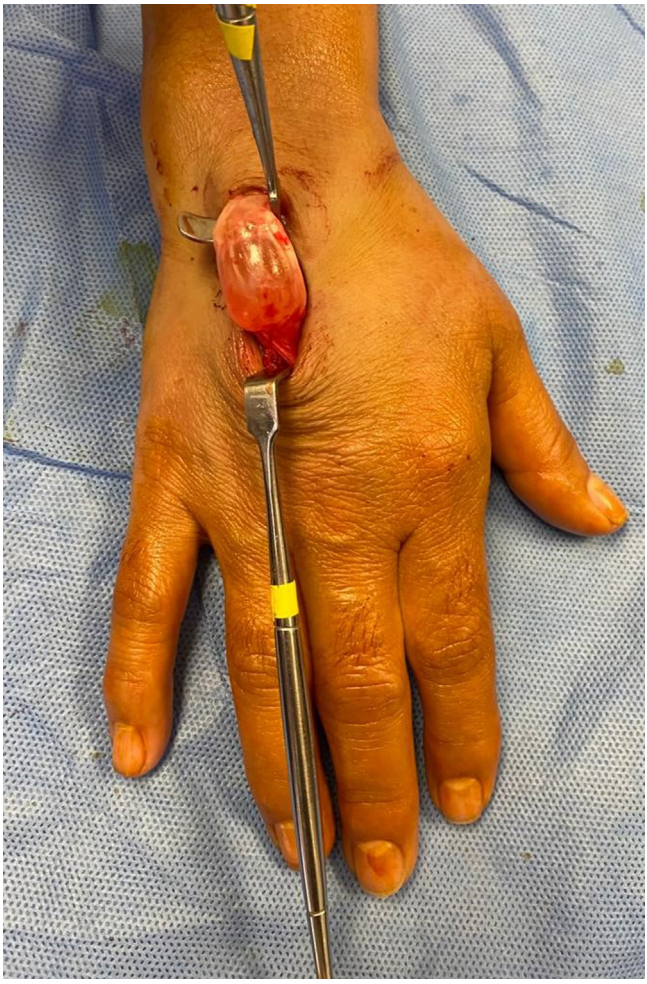

Figure 2. Surgical excision of the tumor in the extensor digitorum superficialis tendon.

Author contributions

Javier Meza-Hernandez MD: Contributed to the conception and design of the study, drafted the article, and gave final approval of the version to be submitted; Ivan González-Cantú: Contributed to the conception and design of the study, drafted the article, and gave final approval of the version to be submitted; Jacob Jimenez-Jimenez: Contributed to the acquisition of data, drafted the article, and gave final approval of the version to be submitted; Lino Ramirez-Sosa: Contributed to the acquisition of data, drafted the article, and gave final approval of the version to be submitted; Rogelio Martínez-Wagner: Analyzed and interpreted the data, critically revised the article for important intellectual content, and gave final approval of the version to be submitted.

Funding

The article did not receive any financial support for its publication in the scientific journal.

Ethical approval

Not required

Declaration of competing interest

All the Authors have no conflict of interest related to the manuscript.

Acknowledgments

To all surgical team at General Hospital “Dr Manuel Gea Gonzalez”.

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