

Myositis Ossificans of the Thenar Eminence mimicking a Fracture of an Accessory Trapezium: A Case Report

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Learning Point of the Article:

Myositis ossificans can mimic fractures in the hand, and awareness of this entity, along with careful clinical correlation and serial imaging, is essential to avoid misdiagnosis and unnecessary treatment.

Abstract

Introduction: Myositis ossificans (MO) is a rare condition characterized by heterotopic ossification within muscle tissue, often mimicking more common pathologies. We present a case of MO involving the thenar eminence, initially suspected and managed as an accessory trapezium fracture.

Case Report: A 66-year-old male presented with acute pain and swelling in the base of his left thumb. Initial imaging suggested a possible accessory trapezium fracture, prompting immobilization and conservative management. Subsequent clinical course and imaging over weeks revealed resorption of the calcification on follow-up radiographs, consistent with MO rather than a fracture.

Discussion: This case highlights the diagnostic challenges posed by MO in the upper extremities and underscores the importance of serial imaging and clinical correlation in distinguishing it from other conditions, particularly fractures, to guide appropriate management.

Conclusion: Physicians are encouraged to consider MO as a possible diagnosis for soft-tissue swelling of the hand.

Keywords: Myositis ossificans, Thenar eminence, trapezium, accessory bone.

Introduction

Myositis ossificans (MO) is a benign, solitary, self-limiting, ossifying soft-tissue mass occurring within skeletal muscles [1]. It can be traumatic or atraumatic in origin. Its pathophysiology remains incompletely understood and typically occurs in young, active males [2]. Most frequently, patients present with pain and stiffness following an injury or several minor trauma. However, paresthesia, weakness, lymphedema, and venous thromboembolism have been reported due to displacement or compression of nearby neurovascular structures [3]. MO is most

commonly diagnosed solely on plain radiographs. Nonetheless, computed tomography (CT) can provide a precise diagnosis when calcification patterns are radiographically undetectable [4]. Patients complaining of severe symptoms or those who failed non-operative treatment are candidates for surgical excision aiming for limitation of pain and restoration of function [2,5].

We present the case of a patient with left hand swelling who was found to have MO of the thenar eminence that was mistaken for an accessory trapezium fracture.

Author's Photo Gallery



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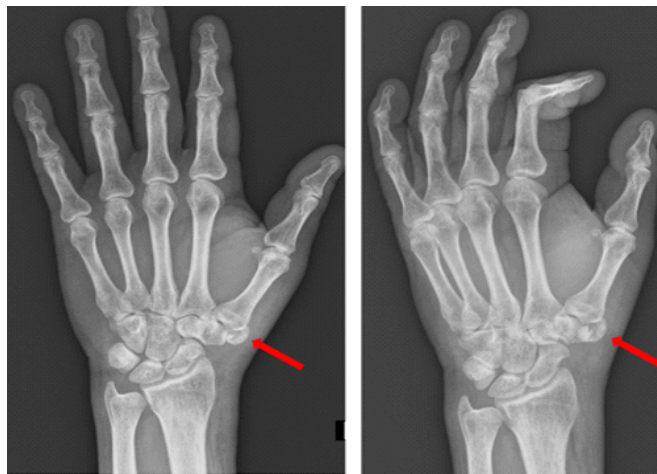


Figure 1: Anteroposterior and oblique views of the left hand showing suspicion of a fracture of an accessory trapezium (red arrow).

Case Report

This is a case of a 66-year-old right-handed male patient, smoker, known to have hypertension, coronary artery disease, and dyslipidemia, taking Aspirin and Plavix. He presented to our clinic for atraumatic left hand swelling and erythema. He reports mechanical pain and limitation of movement of his left thumb. History goes back to 10 days before presentation, when he first started complaining of his symptoms after going to the gym. On presentation, physical exam revealed swelling and erythema of the left thenar eminence, with a painful and limited range of motion of his left thumb. Neurovascular examination was otherwise intact. Standard radiographs of his left hand (Fig. 1) and wrist (Fig. 2) were done, showing a suspicious accessory trapezium fracture. Imaging was then completed by a CT scan revealing the presence of a 14 × 11 × 11mm accessory trapezium noted on the dorsal and medial aspect of the base of the first metacarpal bone, showing fragmentation and cortical lucencies suggestive of a fracture (Fig. 3).

The patient was therefore treated by a short arm thumb spica cast for 6 weeks.

At 6 weeks follow up, the patient was pain-free and asymptomatic. A follow-up X-ray (Fig. 4) was done, showing resorption of the fractured accessory trapezium that was evident solely through remnants.

The resorption of the supposed accessory bone prompted us to take a second look on the CT scan, with a second radiologist concluding to a well-corticated bony structure with a mature bony matrix suggestive of MO (Fig. 5).

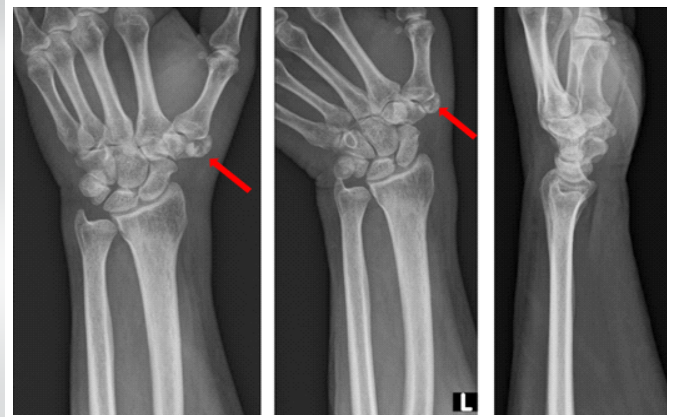


Figure 2: Anteroposterior, lateral and scaphoid views of the left wrist showing suspicion of a fracture of an accessory trapezium (red arrow).

Discussion

Accessory ossicles of the wrist originate from an anomaly in fusion of the secondary ossification centers [6]. More than 20 accessory ossicles exist in the wrist with an incidence of 9.6%, with the most common being os triangulare and os ulnostyloideum. Trapezium secundarium, or accessory trapezium, has an incidence of 0.3% and is typically located between the bases of the first and second metacarpal bones at

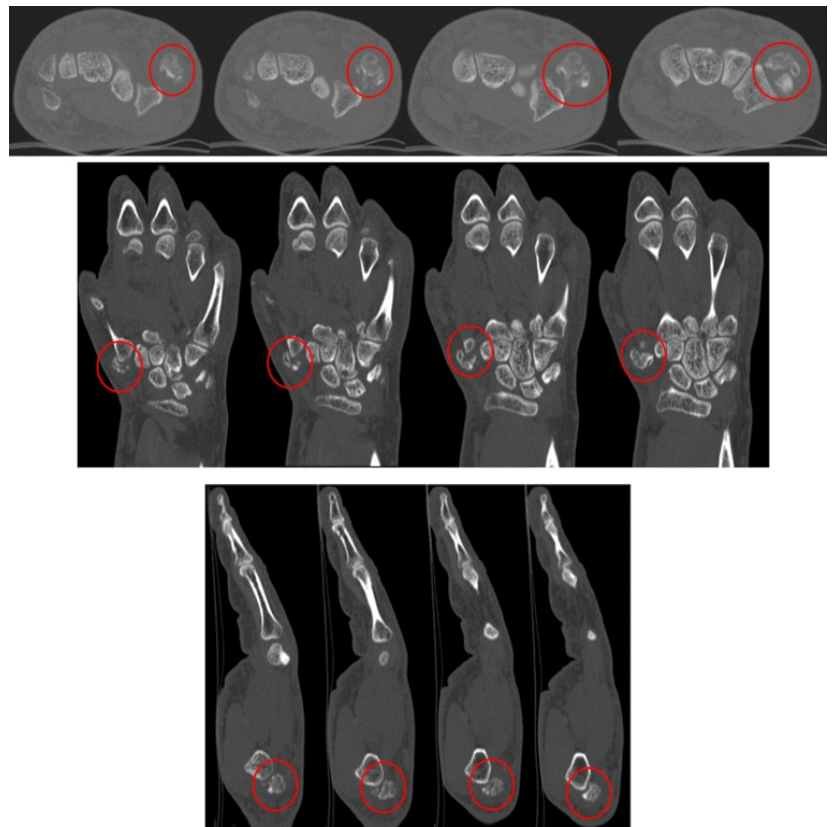


Figure 3: Axial, coronal and sagittal computed tomography reformats of the left hand showing fragmentation and cortical lucencies mimicking a fracture an accessory trapezium (red circle).



Figure 4: X-ray of the left thumb obtained 6 weeks later showing almost complete resolution the ossific densities previously seen. Minimal calcific density is present (thin arrow).

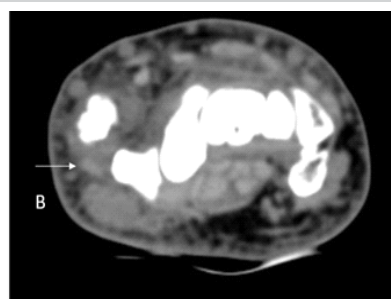
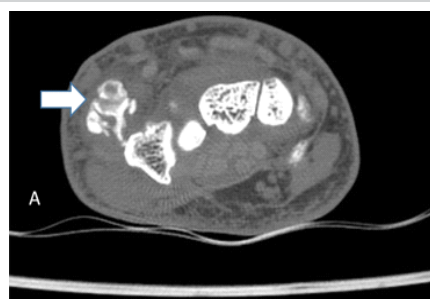


Figure 5: Axial computed tomography scan of the wrist (a: Bone window; b: Soft-tissue window) showing multiple (thick arrow) well-corticated bony structures with a mature bony matrix in the soft-tissues medial to the first extensor group (thin arrow).

the superomedial aspect of the trapezium [7]. These ossicles are usually asymptomatic and are generally found as incidental radiologic findings. Nonetheless, they become symptomatic when they cause impingement (compressing or displacing adjacent structures), or upon trauma. They may also cause exercise-related pain [7,8,9]. There are only a handful of cases of accessory carpal bones ever reported. In fact, the very few cases of accessory ossicles of the wrist were found in association with other wrist abnormalities (carpal coalition, osteonecrosis...) [10,11]. Not only is there a scarcity of cases involving accessory ossicles of the wrist in the literature, but no cases of accessory ossicle fractures have been yet described.

In our patient, the accessory bone was in fact located at the dorsomedial aspect of the trapezium between the first and

second metacarpals. However, the rarity of such cases, combined with the resorption of the accessory trapezium on follow-up X-rays, prompted us to consider differential diagnoses such as MO.

MO is a localized and self-limiting form of heterotopic ossification involving muscles. It most commonly affects the quadriceps, gluteus, and the brachialis muscles [12]. The hand is an uncommon site for MO; only a handful of cases have yet to be reported [5,13,14,15,16]. Radiographic diagnosis is made when these lesions appear with a densely calcified peripheral rim (zoning phenomenon) with a lucent center on plain radiographs and CT scan [2]. Magnetic resonance imaging may be the best modality to evaluate soft-tissue masses; however, MO appears as a heterogeneous mass with extensive surrounding muscle edema [17]. Non-operative treatment is advised and includes brief immobilization and cryotherapy. Surgical excision is indicated in the presence of severe pain and refractory cases [2].

Our patient presented for severe pain and swelling of the left thenar eminence following possible repetitive trauma (gym activities). Imaging showed hallmarks of MO features (zoning phenomenon with a lucent center) detected on CT scan in a rather uncommon location. Moreover, his symptoms were alleviated by immobilization and rest. The resorption of the calcification on follow-up radiographs highlighted the self-limiting feature of MO and its favorable prognosis.

Therefore, after an extensive review of the literature, we reported a case of a MO of the thenar eminence of the left hand which was originally mistaken for a fracture of an accessory trapezium. With this in mind, physicians are encouraged to consider MO as a possible diagnosis for soft-tissue swelling of the hand.

Conclusion

MO of the hand is rare and is, in most cases, asymptomatic. However, it can cause pain, stiffness, and compression symptoms. We reported a rare finding of a MO presenting in the Thenar eminence of a 66-year-old male patient that was treated conservatively, leading to its resorption after 6 weeks of follow-up.

Clinical Message

In patients presenting with acute hand pain and soft-tissue swelling, especially when imaging findings are atypical or evolve over time, clinicians should consider myositis ossificans in the differential diagnosis. Serial imaging and reassessment can prevent misdiagnosis as a fracture and help ensure appropriate, conservative management.

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

Conflict of interest: Nil **Source of support:** None

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