

# Myositis ossificans of mobile wad of Henry-Tennis elbow mimic

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## Abstract

Lateral epicondylitis also known as “tennis elbow” is the most common cause of lateral elbow pain. Several pathologies can mimic symptoms of tennis elbow. We present a case of myositis ossificans within the mobile wad of Henry (MWH), which presented with symptoms of tennis elbow and believe this to be the first reported case in literature.

**Key words:** Elbow; myositis; ossificans; tennis

## Introduction

Lateral epicondylitis (LE) also known as “tennis elbow” is one of the most common causes of lateral elbow pain.<sup>[1]</sup> Several pathologies can mimic symptoms of tennis elbow. We present a case of myositis ossificans (MO) within the mobile wad of Henry (MWH), which presented with symptoms of tennis elbow and believe this to be the first reported case in literature.

## Case Report

A 46-year-old male manual worker presented with 4 months history of right lateral elbow pain radiating to the proximal forearm. He was clinically diagnosed as tennis elbow and managed conservatively without significant benefit. Apart from his manual job that involved heavy lifting, the patient recalled no specific trauma.

Subsequently, he noticed a palpable lump in the anterolateral aspect of the proximal forearm, which was investigated with a magnetic resonance imaging (MRI) at the local hospital and referred to our tertiary orthopaedic oncology centre as presumed soft tissue sarcoma.

The limited MRI demonstrated non-specific oedema within the muscles of MWH, predominantly with the extensor carpi radialis brevis (ECRB) muscle belly [Figure 1]. An ultrasound was subsequently performed, which revealed multiple foci of ossification within the muscle belly of the ECRB without any significant increase in signal on Doppler [Figure 2]. The common extensor origin was normal without any sonographic evidence of LE. A radiograph was obtained to confirm the findings that revealed a rim of ossification in the muscles of MWH in keeping with MO [Figure 3].

He was managed symptomatically with analgesics and physiotherapy with a significant decrease in pain at 6 weeks.

## Discussion

The forearm consists of several muscles and an extensive neurovascular network encased in three compartments.<sup>[2]</sup> These include the volar compartment, dorsal compartment, and the MWH. The latter comprises of three muscles:

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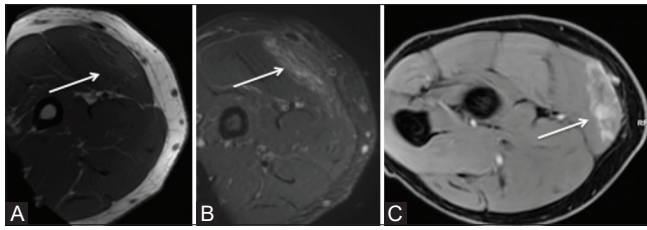
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**Figure 1 (A-C):** Axial T1 (A), STIR (B), and LAVA-FLEX (C) demonstrates edema within the mobile wad of Henry (arrow)



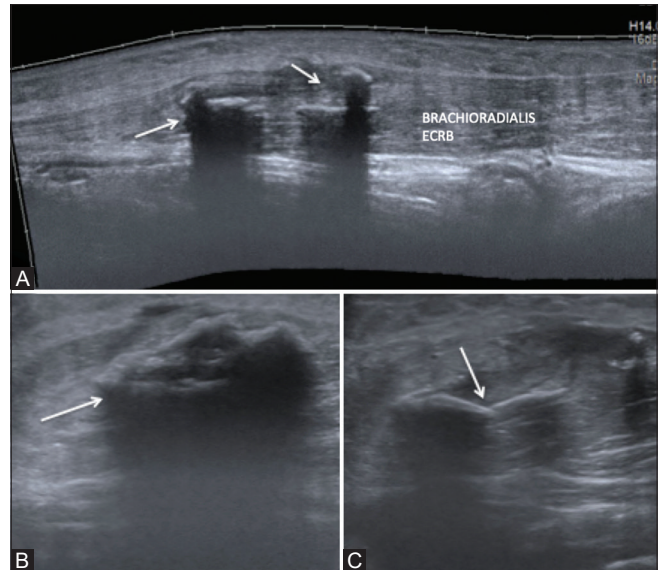
**Figure 3 (A and B):** Anteroposterior and lateral radiographs of the elbow demonstrate rim ossification (arrow) within the soft tissues

the brachioradialis, extensor carpi radialis longus (ECRL), and ECRB [Figure 4].

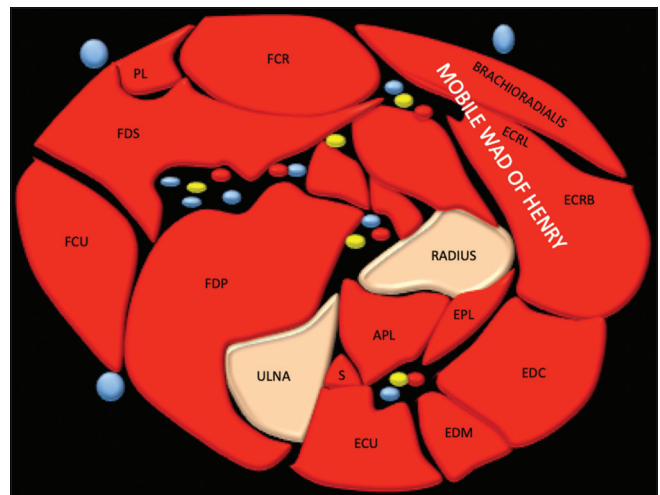
The brachioradialis originates over the proximal two-thirds of the lateral supracondylar ridge of the humerus, while both ECRL and ECRB originate over the distal lateral supracondylar ridge.<sup>[2]</sup> The brachioradialis inserts just proximal the radial styloid. The ECRL and ECRB insert on the second and third metacarpal base, respectively.

The lateral epicondyle is an osseous projection located in the lateral aspect of the distal end of the humerus, and its lateral and anterior surfaces are the sites of origin of the superficial extensor muscle group of the forearm and the lateral ligament complex. The common extensor tendon attaches to the lateral epicondyle and consists of the tendons of the ECRB, extensor digitorum communis (EDC), extensor digiti minimi (EDM), and humeral head of the extensor carpi ulnaris muscles (ECUMs). The superficial component of common extensor origin is formed by EDC and deep portion is formed by ECRB.<sup>[3]</sup>

LE known as tennis elbow, is generally a self-limiting condition often seen in tennis players, throwing athletes, and manual workers.



**Figure 2 (A-C):** Longitudinal panoramic view (A) and axial (B and C) showing ossification (arrow) within the muscles of the mobile wad of Henry. ECRB: extensor carpi radialis brevis



**Figure 4:** Animation of the axial image of the elbow showing the muscles especially the mobile wad of Henry

The diagnosis is usually clinical and requires no imaging. Patients present with pain radiating along the lateral aspect of the elbow forearm. Most patients respond to conservative treatment including rest, physical therapy, anti-inflammatory drugs, and steroid injections.<sup>[3]</sup> Imaging is essential in refractory cases and an alternative diagnosis should be excluded, especially before contemplating any invasive or surgical therapies.<sup>[3]</sup>

The sonographic appearance of the common extensor origin comprises parallel hyperechoic fibres without focal discontinuity.<sup>[3]</sup> There is loss of normal fibrillar pattern with hypoechoic areas which may be associated with increased signal on doppler in LE. Tears within common extensor origin should also be analysed as it can result in failure of treatment.<sup>[3]</sup>

There are plethora of conditions that can mimic LE, which include cervical radiculopathy,<sup>[4]</sup> posterior intraosseous nerve entrapment (radial tunnel syndrome),<sup>[5]</sup> elbow overuse to compensate for adjacent joint disease (such as frozen shoulder),<sup>[11]</sup> degenerative changes and osteochondral defect of the capitellum,<sup>[6]</sup> anconeus muscle inflammation and oedema,<sup>[7]</sup> posterolateral elbow instability,<sup>[11]</sup> infection,<sup>[8]</sup> and inflammatory diseases such as rheumatoid arthritis.<sup>[9]</sup>

MO is an inflammatory pseudotumor of the muscle that may be mistaken clinically and histologically for a malignant soft tissue tumor.<sup>[10]</sup> MO varies in presentation, but most commonly seen as an inflammatory, rapidly growing, and painful muscular mass. The patient may not recall the history of trauma. Imaging features depend on the time of imaging. The typical radiographic appearance of MO is circumferential calcification with a lucent centre and a radiolucent cleft, a string sign that separates the lesion from the cortex of the adjacent bone. Ossification usually begins to become apparent on plain radiographs within 2-6 weeks, and the lesion reaches the classic well-circumscribed peripherally calcified appearance by two months.

The sonographic features of MO include increased signal on Doppler of the involved muscle in the initial stages with well-defined foci of ossification in the lateral stages of MO. MO is considered one of the skeletal “don’t touch lesion”.

In our case, there was MO with florid soft tissue oedema involving the MWH with ossification on ultrasound and classic radiographic features of MO. We feel that this is the first reported case of MO of MWH mimicking LE clinically and should be considered in the differential diagnosis of lateral elbow pain.

## Conclusion

LE is a common clinical presentation. Imaging is important especially in the atypical presentation or refractory cases. In our case, MO in the MWH presented as a mimic of LE.

In MO, MRI findings can be confusing and lead to erroneous assumptions of soft tissue sarcoma and even unnecessary biopsy. Therefore, the use of other modalities such as, in our case, ultrasound and plain radiograph is essential to confirm the diagnosis. MO should be considered as a differential diagnosis in LE particularly in the presence of soft tissue mass.

## Compliance with ethical standards

### Informed consent

Informed consent was obtained from all individual participants included in the study.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/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.

### Ethical approval

All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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