

**THUMB METACARPOPHALANGEAL PURE DORSAL DISLOCATION: A CASE REPORT****Mohamed Badr Errachid\*, Ismail Kebbjaj, Moncef Boufettal, Reda Lah Bassir, Kharmaz, M. O. Lamrani and M. S. Berrada**

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**ABSTRACT**

Dorsal dislocations of the metacarpophalangeal joint of the thumb are less common than the index finger and much more frequent than palmar dislocations. We present a case report about dorsal dislocation of the metacarpophalangeal thumb joint in a 17-year-old boy with successful closed reduction and satisfactory long-term followup. Reduction maneuvers must be strictly respected to avoid conversion to bloody reduction: a slight metacarpophalangeal extension followed by application of digital pressure on the base of the first phalangeal in the palmar and distal direction associated with possible movement of the thumb in subtle rotations as the reduction progresses to overcome the interposed tissues. These tissues are palmar plate, the flexor pollicis longus of the thumb and sesamoid bones incarceration in articular joint can be induced during false reduction maneuver if proceeded with excessive hyperextension or traction. The search for generalized ligament laxity and damage to the collateral ligaments of the metacarpophalangeal joint should be systematic.

**KEYWORD:** Dorsal, metacarpophalangeal, dislocation, traction, thumb.**INTRODUCTION**

Dorsal dislocations of the metacarpophalangeal joint of the thumb are less common than the index finger and much more frequent than palmar dislocations.<sup>[1,2]</sup> Reduction maneuvers must be strictly respected to avoid conversion to bloody reduction. The goal of our work is to emphasize the rarity of this type of dislocation, and above all to clearly describe the reduction maneuver that must be followed verbatim to avoid switching to a bloody reduction.

**OBSERVATION**

In October 2020, we received in the emergency room of CHU de rabat a 17-year-old patient, victim of a sports accident with a bullet on the hyperextended thumb, causing pain with total functional impotence of the thumb. The clinical examination revealed a deformation of the metacarpophalangeal joint of the thumb (figure 1 and 2), with dorsal prominence of the base of the first phalangeal associated with an adduction of the first metacarpal, with direct subcutaneous palpation of these elements, without skin opening. Frontal and lateral radiography (figure 3) views have revealed a complex dislocation of the metacarpophalangeal joint with complete loss of parallelism. The patient received local anesthesia followed by the following reduction

maneuver: a slight metacarpophalangeal extension was performed followed by application of digital pressure on the base of the first phalangeal in the palmar and distal direction. The dislocation was clinically reduced (joint normal on inspection, the patient was able to flex and extend his thumb after reduction) (figure 4 and 5) confirmed by postoperative radiography. Post-reduction ligament testing of the metacarpophalangeal joint of the thumb in forced valgus and forced varus in extension and flexion at 30 ° was normal. The patient presented with hyperextension of the elbow and contralateral thumb. The thumb was restrained in a flexion splint. The patient was seen again after 3 days, the collapse of the periarticular edema was noticed, allowing the conversion of the plaster splint still in the flexion position for 3 weeks. The patient benefited from several rehabilitation sessions with full recovery 45 days after the trauma.



**Figure 1: clinical frontal view of dorsal thumb metacarpophalangeal dislocation**



**Figure 2: clinical lateral view of of dorsal thumb metacarpophalangeal dislocation.**



**Figure 3: frontal radiographic view demonstrating thumb metacarpophalangeal dislocation.**



**Figure 4 and 5: clinical presentation of reduced thumb metacarpophalangeal dislocation.**

## DISCUSSION

Dorsal dislocation of the metacarpophalangeal joint of the thumb is rare, its typical direction is dorsal. Palmar dislocation is very rare. There are only a few cases reported in the literature and all have required open reduction.<sup>[1-2]</sup> The main anatomical structure responsible for the stability of the metacarpophalangeal joint of the thumb is the palmar plate associated with the collateral ligaments which can be ruptured during dislocation.<sup>[7]</sup> The typical mechanism is forced hyperextension.<sup>[3]</sup> The chance of successful closed reduction is lower the more complex the dislocation with interposition of sesamoids in the joint<sup>[3]</sup> and the erroneous reduction maneuver converting a simple dislocation into an irreducible complex dislocation<sup>[3]</sup> The anatomical elements whose articular incarceration is responsible for the irreducibility of the dislocation are the palmar plate, the flexor pollicis longus of the thumb and one or both of the sesamoid

bones.<sup>[2-4-5-6]</sup> Strict compliance with the reduction maneuver is of paramount importance, we start with a slight gentle and careful hyperextension just for unlocking, followed by direct pressure from the base of the proximal phalanx in the palmar and distal direction with possible movement of the thumb in subtle rotations as the reduction progresses to overcome the interposed tissues. What must absolutely be avoided in the maneuver is longitudinal traction or excessive hyperextension which can induce incarceration of the abovementioned anatomical elements in the joint and requiring an open reduction. It is essential to perform both a ligament testing of the collateral ligaments of the metacarpophalangeal joint of the thumb to complete the lesion assessment of the dislocation, as well as a search for generalized ligament laxity promoting dislocations.

## CONCLUSION

Metacarpophalangeal dislocation of the thumb is a rare dislocation, often dorsal requiring urgent reduction, first closed by strictly following the maneuvers described to avoid iatrogenic incarceration of anatomical elements in the joint leading to bloody reduction.

The search for generalized ligament laxity and damage to the collateral ligaments of the metacarpophalangeal joint should be systematic.

## Consent

The patient has given their informed consent for the case to be published.

## Competing Interests

The authors declare no competing interest.

## Authors 'Contributions

All authors have read and agreed to the final version of this manuscript and have equally contributed to its content and to the management of the manuscript.

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