

Carpo-Metacarpal Joint Dislocation of the Thumb-Conservative Treatment



Haidar Jouni*

Department of Orthopedics, Hiram Hospital, Lebanon

Submission: January 04, 2023; Published: January 18, 2023

*Corresponding author: Dr. Haidar Jouni, Department of Orthopedics, Hiram Hospital, PO Box 245, Tyr, Lebanon

Abstract

Introduction: Isolated thumb carpometacarpal joint dislocation is a rare lesion that accounts for less than 1% of all hand injuries. We present traumatic isolated thumb carpometacarpal joint dislocation case. Patient treated conservative by closed treatment under local anesthesia, he had a good functional outcome and showed no signs of thumb carpometacarpal instability or arthritis. Isolated thumb carpometacarpal dislocation is a rare lesion that can cause joint instability or arthritis, which interferes with the normal function of the hand and can lead to articular degenerative changes. The best management of this lesion is still controversial, since there is lack of evidence in the literature showing superiority of one treatment over the other.

Case Report: The study revolves around the case of a 27-year-old sport man, who was treated under local anesthesia, and the case was followed up for a period of more than a year. Through a medical examination of the movement of the thumb and radiographs, it showed a good condition of the finger without signs of posttraumatic arthritis or instability.

Conclusion: Isolated dislocations can be successfully managed by closed reduction and immobilization with finger splint immobilization, while many cases with unstable dislocations requiring surgical intervention.

Keywords: Thumb; Trapeziometacarpal dislocation Carpo-Metacarpal Dislocation

Introduction

The first carpometacarpal joint is a saddle-shape joint with two degrees of freedom, nonorthogonal and nonintersected axes is responsible for the extraordinary mobility and important function of the thumb This joint allows the thumb's different movements: flexion/extension, abduction/adduction, axial rotation, and circumduction. If this dislocation is misdiagnosed or inadequately treated, it can lead to chronic mechanical instability, hand disability, and degenerative changes of joint [1].

Isolated dislocations of the thumb, carpometacarpal joint (TM) is a rare injury that accounts for less than 1% of all hand injuries. without associated fracture -Bennet fracture-is a very rare injury [2] with few reports in the literature. Associated injuries reported in the literature include dislocation with associated fracture as bennet fracture of the base of the metacarpal. Isolated fractures of the trapezium. There are many opinions about the method of treatment, some of them suggest surgery, including ligament reconstruction and others closed treatment with or without

Kirchner fixation [3,4]. However, it depends on stability of joint and age of patient as well as daily activity, if the joint is stable after a closed reduction, immobilization in a thumb finger splint, can result in a satisfy result.

Case Report

27-year-old man patient presented in the emergency department of a regional referral hospital complaining of pain and deformity of the right thumb, following an alleged road traffic accident (vehicle motor accident). The patient was unable to move the right thumb and had a prominence over the dorsal aspect of the right hand. X-ray A_P and L_L of the right hand revealed a dorsal dislocation of the carpo-metacarpal joint of the right thumb without any associated fracture (Figure 1A & 1B). The patient underwent a closed reduction of the dislocation under local anesthesia, the TM joint was found stable, and hence it was decided to treat the dislocation with finger splint immobilization. He was followed up every week for the first 3 weeks with weekly

radiographs which confirmed good stable reduction of the TM joint. At 6 weeks the finger splint was removed, and the patient was referred to the physiotherapist. Patient regained full range

of movements of the thumb. Radiograph after one year of trauma follow up showed well reduced and stable TM joint without any signs of arthritis or instability of ligament.

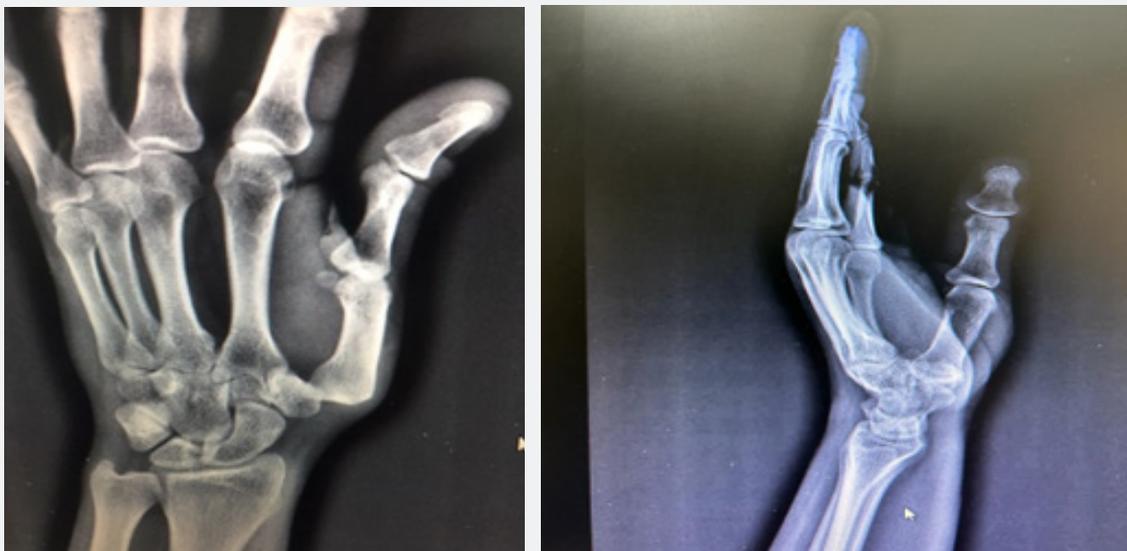


Figure 1A: A_P and L_L radiograph of the hand showing the dorsal dislocation of the TM joint and with stable condition.



Figure 1B: A_P and L_L radiograph at 12 months follows up showing stable and good anatomical alignment and congruent joint.

Discussion

Thumb it is a saddle joint concave in one direction and convex in the other. Both trapezial and metacarpal surfaces have double inverse curvature in the shape of a saddle joint. Thumb Has a

unique role in the function of the hand, and a normal thumb is one of the most important fingers in the hand, and we use it to play music, hold things, express our feelings, and work without the thumb is almost impossible. TM joint plays a vital role in movements of the thumb flexion/extension, abduction/adduction,

opposition / reposition. Any derangement of the biomechanics of the thumb can lead to defective hand function. An injury which is occasionally reported is carpo-metacarpal dislocation of the thumb, can lead to long standing hand disability if not properly treated.

Isolated carpometacarpal dislocation of the thumb is a very rare injury [2], accounting for less than 1% of all hand injuries. Isolated TM dislocations almost always displace dorsally, but there are reports of volar dislocations [5] Most thumb dislocations are dorsal and are classified as simple stable after closed treatment under local or regional anesthesia, and complex unstable required open reduction and internal fixation. Many associated injuries have been reported as bennet or trapezium fracture. The dorsal ligament complex is the largest and thickest and most important ligamentous restraint [6,7] and if this ligament is cut, the major stabilizer is lost, and a carpometacarpal dislocation ensues [7]. If the metacarpal is further flexed, the anterior oblique ligament is stripped from the base of the metacarpal resulting in complete dislocation.

In terms of treatment, there are options varying from closed reduction under local or regional anesthesia and casting, percutaneous fixation, ligamentous repair, capsular placcation followed by K wire fixation. Miljkkovic and Milankov has named this injury as the "Bennett fracture without a fracture" implying that the injury is unstable after closed reduction as in a Bennett fracture. Closed reduction and immobilization with the thumb in abduction and kept for 4- 6 weeks is the preferred treatment if the joint is stable [1,3,6], and if the thumb carpometacarpal joint is unstable, it is indication for open reduction with K wires, with or without capsulorrhaphy.

Though many ligamentous reconstructive procedures have been described using the tendons around the wrist, conservative management may still give equally good results. However recurrent instability is a concern and ligament reconstruction should be considered in unstable cases. Our case was stable after reduction and conservative management with thumb splint finger gave good functional result. Marcotte and Trzeciak too reported

that the isolated dorsal MCP joint dislocation remains stable after closed reduction [8]. Patients with TM dislocation showing no signs of instability after a closed reduction can be managed conservatively [3,6].

Conclusion

We report a rare case of isolated trapeziometacarpal joint TM joint dislocation. Post reduction the joint was stable and conservative management with finger splint immobilization gave good clinical result.

Clinical Message

Thumb carpometacarpal joint dislocations, if stable after a closed reduction could be managed with finger splint immobilization, good functional results. Surgery reserved only for dislocations that are unstable before and after reduction.

References

1. Bosmans B, Verhofstad MHJ, Gosens T (2008) Traumatic thumb carpometacarpal joint dislocations. *J Hand Surg* 33(3): 438-441.
2. Drosos GI, Kayias EH, Tsioros K (2004) "Floating thumb metacarpal" or complete dislocation of the thumb metacarpal. A case report and review of the literature. *Injury* 35(5): 544-547.
3. Edwards A, Pike J, Bird J (2000) Simultaneous carpometacarpal joint dislocations of the thumb and all four fingers. *Injury* 31(2): 116-118.
4. Okita G, Anayama S, Sato N, Haro H (2011) Surgical reconstruction using suture anchor for dislocation of the carpometacarpal joint of the thumb: a case report. *Arch Orthop Trauma Surg* 131(2): 225-228.
5. Farzan M, Siassi M, Espandar R (2002) Thumb carpometacarpal joint volar dislocation: a case report. *Acta Medica Iranica* 40(1): 52-54.
6. El Ibrahimy A, Amar F, Chbani B, Daoudi A, Elmrini A, et al. (2009) Dislocation of the carpometacarpal joint of the thumb associated with trapezium and Bennett's fractures. *Hand* 4(2): 191-193.
7. Okita G, Anayama S, Sato N, Haro H (2011) Surgical reconstruction using suture anchor for dislocation of the carpometacarpal joint of the thumb: a case report. *Arch Orthop Trauma Surg* 131(2): 225-228.
8. Marcotte AL, Trzeciak MA (2008) Nonoperative treatment for a double dislocation of the thumb metacarpal: a case report. *Arch Orthop Trauma Surg* 128(3): 281-284.



This work is licensed under Creative Commons Attribution 4.0 License
DOI: [10.19080/OROAJ.2023.21.556054](https://doi.org/10.19080/OROAJ.2023.21.556054)

Your next submission with Juniper Publishers will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats

(Pdf, E-pub, Full Text, Audio)

- Unceasing customer service

Track the below URL for one-step submission

<https://juniperpublishers.com/online-submission.php>