



(CASE REPORT)



Pure open irreducible dislocation of the interphalangeal joint of the thumb: About two cases

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Abstract

Introduction: Thumb interphalangeal joint dislocations, although rare, have a significant impact on grip function. In case of irreducible dislocation, the interposition in the volar plate complicates immediate reduction. Open-air interventions are then necessary to allow a solid repair and rapid recovery.

Observation: We report the observation of two young patients who presented with open thumb trauma in whom after clinical and radiological investigation, the diagnosis of irreducible dislocation was retained.

Results: One year postoperatively, patients were clinically evaluated and showed a significant reduction in pain as well as full recovery of movement, strength, and functional abilities.

Discussion: Pure open dislocation of the interphalangeal joint of the thumb is rare, with cases of irreducibility often reported. Anatomic factors such as the volar plate and flexor pollicis longus interposition may contribute to irreducibility, as can the presence of an imprisoned sesamoid bone. Although cases of irreducibility associating these three lesions are rare, their management varies between authors, with some recommending repair of the ligament complex, while others opt for immobilization after reduction, depending on the stability of the ligament joint.

Conclusion: Thumb interphalangeal dislocations are uncommon, and open cases are even rarer. Immediate reduction is often difficult due to irreducibility, thus requiring surgical intervention to achieve optimal functional recovery.

Keywords: Dislocation; Irreducible; Open; Interphalangeal; Thumb

1. Introduction

Dislocations of the interphalangeal joint of the thumb are rare and disabling injuries because they interrupt the grip function. In case of irreducible dislocation, the interposition in the majority of the palmar plate prevents emergency reduction from being obtained. Open reduction procedures are then proposed with the aim of obtaining a solid repair allowing rehabilitation to begin quickly. We report two observations of irreducible open dislocations of the interphalangeal joint of the thumb reduced openly. Patients were evaluated clinically 12 months after surgery and noted pain relief with full recovery of range of motion, strength and activities.

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2. Case

2.1. Observation 1

This is a 32-year-old patient, with no particular history, admitted for open trauma to the right thumb occurring following a traffic accident. The clinical examination on arrival noted a wound on the palmar surface of the thumb zone 2, linear following the flexion folds, half-circumferential, of 3 cm with exposure and exteriorization of the distal end of the thumb head of the proximal phalanx palmar with a skin recoloring time of less than 3 seconds. Frontal X-ray of the hand showing total and permanent loss of contact of the interphalangeal joint of the thumb with dorsal displacement (figure 1).



Figure 1 Initial clinical appearance and radiograph showing a dorsal dislocation of the interphalangeal joint of the thumb

An emergency reduction attempt was made in the operating room under anesthesia. On exploration, lateralization of the flexor pollicis longus tendon was observed, the joint capsule was torn. We proceeded by replacing the flexor pollicis longus tendon then reducing the dislocation by external maneuver by hyper-extension, traction and flexion. We repaired the capsule and reinserted the volar plate with 90/30° flexion/extension. A provisional ascending centromedullary arthrodesis of the interphalangeal joint of the thumb using a Kirschner wire was performed (figure 2).



Figure 2 Incarceration of the flexor longus and radiograph showing the pinning

The pin removal was carried out after 2 weeks and the patient began functional rehabilitation. The postoperative course was simple. The evolution after 2 months was marked by a good functional evolution of the thumb.

2.2. Observation 2

24-year-old patient, with no particular history, admitted for open trauma to the right thumb occurring following an assault. The clinical examination on arrival noted a conscious patient with a Glasgow score of 15/15. On locomotor examination, we noted a wound on the palmar aspect of the thumb zone 2, linear following the folds of palmar flexion of the interphalangeal, of approximately 4 cm with dorsal displacement and ascension of the distal phalanx. Bending was impossible. We noted a skin recoloring time of less than 3 seconds. He had a frontal X-ray of the hand showing a total and permanent loss of contact between the base of P2 and the top of P1 with ascension of P2 and posterior displacement (figure 3).



Figure 3 Clinical appearance and X-ray

An attempt at reduction in the emergency room was made without success. The decision to reduce to open operating room was opted for. After consent and transport of the patient to the operating room under loco-regional anesthesia, the dislocation was reduced by external maneuver using hyperextension, traction and flexion. We noted stability of the interphalangeal joint with flexion/extension at 90/30°. A temporary posterior splint was placed. The splint was removed after 2 weeks and the patient began functional rehabilitation. The postoperative course was simple. The evolution after 1 month was marked by a good functional evolution of the thumb (figure 4).



Figure 4 X-Ray after reduction

3. Results

One year after surgery, patients underwent clinical evaluation, revealing notable pain relief as well as full restoration of range of motion, muscle strength, and functional abilities.

4. Discussion

Pure open dislocation of the interphalangeal joint of the thumb is a rare lesion both in current practice and in the literature. Irreducible dislocation of the interphalangeal joint of the thumb has been reported to be the result of several injured anatomical elements [3]. The palmar plate can be responsible for irreducible lesions [7][8], the interposition of the flexor pollicis longus between the ulnar condyle of the proximal phalanx and the base of the distal phalanx. [1][3]. A third element can interfere during reduction, a sesamoid bone trapped in the interphalangeal joint responsible for irreducibility [9]. Cases of irreducibility by combination between the sesamoid bone and incarceration of the palmar plate have been described in the literature, the association is three lesions is almost absent [10][11]. In our series, no cases of sesamoid bone incarceration were found. There are several points of view regarding the management of the collateral ligament complex, the volar plate and the sesamoid bone. Neither Gerard ni al., [12]. Salamon and Gelberman [7] did not repair the ligament while Kitagawa and Kashimoto [9] repaired the collateral ligament complex using a “sliding” suture. Immobilization after reduction has been recommended by several authors [9, 10, 11]; it is not necessary if the joint is stable [8].

5. Conclusion

Interphalangeal dislocations of the thumb are rare entities both in current practice and in the literature. The open nature of the dorsal dislocation is an exceptional injury. Emergency reduction is delicate given the nature of irreducibility. Immediate reduction in the operating room enabled a satisfactory functional result to be obtained.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflict of interest.

Statement of informed consent

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

Contribution of the authors

All authors participated in the development of this work. All authors also declare that they have read and approved the final version of the manuscript.

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