Volar metacarpophalangeal joint dislocation of the little finger

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LA Hughes, A Freiberg, Volar metacarpophalangeal joint dislocation of the little finger. Can J Plast Surg 1993;1(3):145-147. A case of volar dislocation of the metacarpophalangeal joint of the little finger was managed by open reduction, initially volar and subsequently dorsal before reduction could be maintained. This unusual injury represents a difficult management problem which can lead to a less than optimal outcome.

Key Words: Dislocation, Metacarpophalangeal joint, Volar

Dislocation de l’articulation métacarpo-phalangienne palmaire de l’auriculaire

RÉSUMÉ : Un cas de dislocation de l’articulation métacarpo-phalangienne palmaire de l’auriculaire a été traité par réduction ouverte, palmaire initialement, puis dorsale, avant que la réduction ne puisse être maintenue. Cette blessure inhabituelle pose un défi thérapeutique qui peut entraîner des résultats sous-optimaux.

Volar dislocations of the metacarpophalangeal (MCP) joints are rare (1). A review of the English literature revealed that only nine cases have been reported thus far (2). No one, therefore, has extensive experience with this unusual injury and the subject is only briefly covered in some major hand surgery texts (3).

Guidelines to appropriate management are scanty to nonexistent, with the recourse being to review the experience of others from the previous case reports. A case of volar dislocation of the MCP joint of the little finger is presented.

CASE REPORT

A 63-year-old male presented to the emergency room after being struck by a bus while riding his bicycle. He struck his left hand on the ground, sustaining an abrasion on the dorsum and the ulnar aspect of the hand. On examination there was an obvious deformity of the MCP joint of the little finger, with shortening of the digit and loss of ‘knuckle prominence’. Radiographs confirmed the presence of a volar dislocation of the MCP joint (Figure 1).

Attempts at closed reduction were made in the emergency room under a hematoma block but these were unsuccessful. The patient was taken to the operating room the following day, and under a regional block a volar open approach was used to achieve reduction. This was accomplished after freeing the base of the proximal phalanx from the surrounding tissues, including the transverse fibres of the superficial transverse metacarpal ligament. An ulnar gutter plaster of Paris slab was applied for external support.

Unfortunately, the post reduction radiographs revealed similar appearances to the preoperative films except for the presence of a plaster cast.

The following day the patient was taken back to the

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Figure 1 Volar dislocation of the metacarpophalangeal joint of little finger. Radiographs taken on presentation
operating room and this time was administered a general anesthetic. The MCP joint was then reduced, closed and two K-wires were inserted percutaneously under fluoroscopic control across the joint to maintain reduction.

Six weeks postoperatively the wires were removed and repeat x-rays showed that there was a 'volar dislocation of the MCP joint of the fifth digit'. The reduction, which was maintained by K-wire stabilization for six weeks, was immediately lost on removal of the wires.

The patient was taken back to the operating room for the third time one week later. A dorsal approach was used to expose the MCP joint. The operative findings included a volar plate which was avulsed distally and draped dorsally over the fifth metacarpal head (Figure 2). The volar plate was then excised and reduction easily achieved by traction and manipulation. The joint was stabilized with three K-wires for three weeks (Figure 3).

At follow-up three weeks later the K-wires were removed and radiography confirmed that the reduction was maintained. The patient was started on an intensive hand therapy program involving splints and exercises, but never regained full function. He has residual stiffness and significant limitation of motion at the MCP joint one year post injury, and radiographs confirm degenerative joint changes (Figure 4).

**DISCUSSION**

Complete complex volar dislocations at the MCP joints can be difficult problems. The literature has not provided clear guidelines as to effective management of this unusual injury, which can lead to significant morbidity.

The appropriate operative approach is controversial, ie, volar or dorsal (4), but based on the experience of this case we suggest a dorsal approach (5). It seems that volar plate entrapment is the main pathomechanical problem in these cases, and thus closed reduction is not likely to be successful.
(6,7). Other structures implicated as causes of irreducibility include the collateral ligaments and the dorsal capsule (6).

An early dorsal operative approach with volar plate reduction or excision, followed by appropriate occupational and physiotherapy, may lead to a more successful outcome in these complex injuries.

CONCLUSION

Our experience with a difficult and, at times, humiliating injury to the MCP joint – a volar dislocation – has been presented. In reviewing the literature, previous reports have cited similar experiences to ours. There is no consensus, however, with regards to the appropriate steps to be observed in the management of these patients. The authors are of the view that an early open, dorsal approach is the key to optimizing the final result in these patients.

REFERENCES


CALENDAR OF EVENTS

DECEMBER 1-5, 1993
American Association for Hand Surgery annual meeting
Cancun Mexico
Contact: AAHS. Telephone (312) 644-0828.

DECEMBER 8-10, 1993
British Association of Plastic Surgeons winter meeting
London, England
Contact: Mrs Helen Roberts, BAPS, The Royal College of Surgeons, 35-43 Lincoln’s Inn Fields, London WC2A 3PN, England

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Contact: PSEF, the Southeastern Society of Plastic and Reconstructive Surgeons, and St Joseph’s Hospital

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Contact: Joyce Norris. Telephone (305) 859-8250.

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UCLA aesthetic symposium
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Contact: Jannita Navarette. Telephone (310) 222-2760.

MARCH 5-8, 1994
Eleventh annual Dallas rhinoplasty symposium
Dallas, Texas
Contact Rose Bayes. Telephone (214) 688-2166

MARCH 24-26, 1994
Symposium of aesthetic surgery of the face
San Francisco, California
Contact: Delores Levin. Telephone (415) 861-8040

MAY 21-24, 1994
International symposium on plastic surgery
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Sponsored by SDEF and the Italian Society of Plastic and Reconstructive Surgeons

OCTOBER 15, 16, 1994
Twenty-first annual meeting of the Canadian Society for Aesthetic (Cosmetic) Plastic Surgery
Contact Mrs P Hewitt, Canadian Society for Aesthetic (Cosmetic) Plastic Surgery, 4650 Highway #7, Woodbridge, Ontario L4L 1S7. Telephone (416) 831-7750.