# Closed Reduction and Treatment of 2 Volar Thumb Metacarpophalangeal Dislocations: Report of 2 Cases

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Volar dislocation of the metacarpophalangeal joint of the thumb may be irreducible by closed means. We describe 2 patients with volar dislocation of the thumb metacarpophalangeal joint treated with closed reduction and casting. *(J Hand Surg 2011;36A:665–669. Copyright © 2011 by the American Society for Surgery of the Hand. All rights reserved.)*

**Key words** Volar thumb dislocation, metacarpophalangeal joint, closed reduction.

VOLAR DISLOCATION OF the thumb metacarpophalangeal (MCP) joint is an uncommon injury. Only 17 cases of volar dislocation of the thumb MCP joint have been reported in the English and international literature.[1–15] Closed reduction is usually unsuccessful because of interposition of the dorsal capsule, volar plate, or incarcerated extensor tendons.[1,6,9] Open reduction was required in 15 of the 17 cases. We present 2 cases of volar thumb MCP joint dislocation caused by hyperflexion force to the MCP joint of the thumb. Both were treated with closed reduction and casting with good clinical and subjective results, although radiographs showed residual volar MCP subluxation.

## CASE REPORT 1

A 54-year-old, right-handed man was involved in a tractor rollover and sustained a left thumb volar MCP dislocation when his thumb was hyperflexed. On secondary survey, the patient had obvious deformity of the MCP joint of his thumb. The patient had preserved distal vascularity with normal capillary refill and intact 2-point discrimination. He also had a palpable extensor pollicis longus (EPL) without radial or ulnar subluxation of the EPL or extensor pollicis brevis (EPB). With attempted MCP extension, the patient did not have paradoxical MCP joint flexion–interphalangeal (IP) extension. An x-ray was obtained and confirmed volar dislocation of the thumb MCP joint without interposed sesamoids or associated fracture (Fig. 1).

We placed a digital block and injected 0.5 mL lidocaine into the MCP joint of the left thumb. We performed a closed reduction maneuver by hyperflexing the MCP joint with direct pressure on the volar base of the proximal phalanx to gently push the phalanx over the metacarpal head. The patient's radial collateral ligament was stable. He had 10° of side-to-side difference with ulnar stress of the MCP joint with a solid end point. No Stener lesion was palpable. The patient was placed into a thumb spica splint and post-reduction x-rays confirmed reduction.

The patient was maintained in a thumb spica splint for 3 weeks. At 3-week follow-up, he had good thumb position without instability of the thumb MCP joint. He had mild stiffness of the MCP joint. Sensation and vascularity were intact. X-rays at this visit confirmed maintenance of reduction out of the splint with mild volar subluxation (Fig. 2). A custom-molded splint was made and the patient started aggressive range of motion (ROM) exercises 6 times daily out of the splint. He discontinued the custom splint at 5 weeks with activities as tolerated. The patient is employed as a long-haul truck driver and did not keep his 6-month follow-up appointment because he was having no limitations or pain. Consequently, no 6-month examination or x-ray

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**FIGURE 1:** Volar MCP dislocation left hand (patient 1).

**FIGURE 2:** X-ray at 6-week follow-up (patient 1).

was possible. We conducted a phone interview and the patient reported no pain or stiffness in the left thumb. His Disabilities of the Arm, Shoulder, and Hand (DASH) score at 6 months was 1.

## CASE REPORT 2

A 76-year-old, right-handed man with multiple medical problems had a syncopal episode and sustained a right thumb volar MCP dislocation when his thumb was hyperflexed. He presented to the emergency department, where he was noted to have an obvious deformity of the MCP joint of the thumb. The thumb was sitting in a hyperflexed position and the patient was noted to have a 0.5-cm laceration over the dorsal aspect of the proximal phalanx. He had a palpable EPL without radial or ulnar deviation. The patient did not have paradoxical MCP joint flexion or IP extension with attempted MCP extension. The patient had normal capillary refill and intact 2-point discrimination. We obtained an x-ray and confirmed volar dislocation of the thumb MCP joint without interposed sesamoids or associated fracture (Fig. 3).

We placed a digital block and performed a closed reduction maneuver by hyperflexing the MCP joint with direct pressure on the volar base of the proximal phalanx to gently push the phalanx over the metacarpal head. The laceration was copiously irrigated with 2 L of normal saline and 1 nylon suture was placed under sterile conditions to approximate the tissue. The patient was placed into a thumb spica splint, and postreduction x-rays confirmed reduction. The patient was admitted to the hospital for medical evaluation and received 1 g cefazolin every 8 hours for 24 hours.

The patient was maintained in a thumb spica splint for 1 week. At 1-week follow-up, the patient had good thumb position. His radial collateral ligament was stable and he had 15° of side-to-side difference at 30° of flexion with a defined end point. No Stener lesion was