

that of the population at large, so these patients should not be deprived of the benefits of restorative surgery [5].

In conclusion, this case shows that a microvascular operation with a radial forearm free flap was performed to reconstruct the cheek of a patient suffering from psychosis. If postoperative flap-related complications were to have appeared in the present case, it could have been difficult to manage the problems, considering that the patient's mental state was unstable. Therefore, the authors chose a radial forearm free flap over any type of perforator flap. Despite the psychiatric problems of the patient, the aesthetic and functional outcome was relatively successful. The authors recommend that active microsurgical restoration could be successfully performed using a multidisciplinary approach with psychiatrists to reconstruct post-traumatic facial defects in severely psychotic patients. It should be noted that surgical and psychiatric follow-up arrangements must be carefully planned before discharge.

## References

1. Kang HG, Park MC, Lim H, et al. Modified folding radial forearm flap in soft palate and tonsillar fossa reconstruction. *J Craniofac Surg* 2013;24:458-60.
2. Tuncel U, Aytac S. Reconstruction of full-thickness cheek defects with using free osseocutaneous radial forearm flap. *J Craniofac Surg* 2012;23:e357-9.
3. Bramness JG, Gundersen OH, Guterstam J, et al. Amphetamine-induced psychosis: a separate diagnostic entity or primary psychosis triggered in the vulnerable? *BMC Psychiatry* 2012;12:221.
4. Cruickshank CC, Dyer KR. A review of the clinical pharmacology of methamphetamine. *Addiction* 2009; 104:1085-99.
5. Lin CH, Wei FC, Chen CT, et al. Microsurgical tissue transplantation or replantation in patients with psychoneurological impairment. *Plast Reconstr Surg* 2001;108:1211-7.

## Thumb Carpometacarpal Dislocation and Open Dorsal Metacarpophalangeal Instability: A Variation of the Floating Thumb

Jose Couceiro, Alberto Sanchez, Carlos Pernal, Marcos Sanmartin

*Hand Surgery Unit, Orthopaedics Department, POVISA Hospital, Vigo, Spain*

**Correspondence:** Jose Couceiro  
Hand Surgery Unit, Orthopaedics Department, POVISA Hospital, Calle Salamanca 5, Vigo 36211, Spain  
Tel: +34676230437, Fax: +34986413144, E-mail: couceirox@gmail.com

No potential conflict of interest relevant to this article was reported.

Received: 17 Sep 2013 • Revised: 17 Oct 2013 • Accepted: 26 Oct 2013  
pISSN: 2234-6163 • eISSN: 2234-6171  
<http://dx.doi.org/10.5999/aps.2014.41.2.190> • Arch Plast Surg 2014;41:190-192

Copyright © 2014 The Korean Society of Plastic and Reconstructive Surgeons  
This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

With only five individual cases previously reported in the literature [1,2], the simultaneous dislocation of the carpometacarpal (CMC) and metacarpophalangeal (MCP) joints of the thumb without a fracture, also known as the floating thumb metacarpal, is an extremely rare injury.

We present a variation of this uncommon condition that was characterized by the presence of an open dorsal MCP instability and a concomitant CMC dislocation with no associated fractures. To the best



**Fig. 1.**  
Left thumb carpometacarpal joint dislocation observed in X-rays.



**Fig. 2.** The metacarpophalangeal joint was easily dislocated when force was applied to the fingertip (lateral view).



**Fig. 3.** The metacarpophalangeal joint was easily dislocated when force was applied to the fingertip (frontal view).

of our knowledge, this is the first reported case of such a combination.

Our patient is a 59-year-old male who suffered direct trauma to the thumb after a fall on the sidewalk while drunk. He presented with pain and deformity at the base of the thumb and a 3-cm laceration on the volar aspect of the MCP joint.

X-rays revealed a dorsal thumb CMC dislocation (Fig. 1). When examined under anesthesia, the MCP joint was also found to be dorsally unstable (Figs. 2, 3).

The patient was taken to the operating room, where the CMC dislocation was reduced by closed manipulation and stabilized with two intermetacarpal Kirschner wires. The MCP injury was irrigated, and a significant tear of the volar plate was found to be the source of the instability; it was repaired with running stitches. An intra-articular Kirschner wire was used to further stabilize the joint (Fig. 4). A postoperative splint was then applied.

The MCP wire was kept in place for 3 weeks, and the intermetacarpal wires were kept in place for 6 weeks, after which time, the splint was removed and active motion was encouraged.

After 34 months, the patient experienced some discomfort at the CMC joint. The range of motion at the interphalangeal joint was from 0° of extension to 45° of flexion; the MCP joint range of motion was from 0° of extension to 40° of flexion. Both the CMC

and MCP joints were stable. Grip strength as measured with a Jamar dynamometer (Baseline Instruments, NY, USA) was 30 kg on the left and 35 kg on the right.

X-rays revealed osteoarthritic changes at the CMC joint (Fig. 5). The patient was satisfied with the outcome and wanted no further procedures.

Since the original description of this condition by Moore et al. [3] in 1978, five cases of floating thumb metacarpal have been reported in the literature [1,2].

A variation of this injury was previously reported by Bhargava and Jennings [4] in 2009. Their case involved a CMC dislocation and a simultaneous Stener lesion. The authors explained this as a result of a longitudinal force applied to the metacarpal, followed by radial stress to the MCP joint.

In our view, the present case is a result of a longitudinally directed force that dislocated the CMC joint and produced the open injury to the volar plate at the MCP level, resulting in a dorsal MCP instability.

Controversy remains as to the best treatment of CMC dislocations: closed reduction and casting, closed reduction and percutaneous pinning, and open reduction and ligament reconstruction have all been advocated, but no clear superiority of one technique has been clearly established [5]. Although no gross instability remained at the CMC joint in our case, some osteoarthritic changes developed over time.

In summary, we present a previously unreported



**Fig. 4.** Immediate postoperative X-rays. Both joints are reduced and pinned with Kirschner wires.



**Fig. 5.** After 34 months, incipient osteoarthritic changes were observed at the carpometacarpal joint.

variation of floating thumb, which was characterized by the combination of CMC dislocation and MCP instability; we thought that the injury combination was too unstable to be treated with reduction and casting alone and therefore, opted for stabilization with percutaneous pinning. In spite of the development of osteoarthritic changes at the CMC joint, the patient reported a minimal amount of pain and had a range of motion and grip strength that was comparable to that of the other thumb. We considered the clinical result to be a good one.

Clinicians should be aware that CMC dislocations can be associated with different types of MCP injuries, such as MCP dislocations, Stener-type lesions, or dorsal MCP instabilities. Diagnosis may be very clear or subtle. Treatment options include closed reduction and casting, closed reduction and percutaneous pinning, and open reduction and ligament reconstruction.

## References

1. Drosos GI, Kayias EH, Tsioros K. "Floating thumb metacarpal" or complete dislocation of the thumb metacarpal: a case report and review of the literature. *Injury* 2004;35:545-8.
2. Leiber-Wackenheim F, David E, Tran Van F, et al. Floating first metacarpal with recurrent trapeziometacarpal dislocation in a subject with hyperlaxity. *Rev Chir Orthop Reparatrice Appar Mot* 2007;93:725-9.
3. Moore JR, Webb CA Jr, Thompson RC. A complete dislocation of the thumb metacarpal. *J Hand Surg Am* 1978;3:547-9.
4. Bhargava A, Jennings AG. Simultaneous metacarpophalangeal joint ulnar collateral ligament injury and carpometacarpal dislocation of the thumb in a football player: a case report. *Hand Surg* 2009;14:23-4.
5. Bosmans B, Verhofstad MH, Gosens T. Traumatic thumb carpometacarpal joint dislocations. *J Hand Surg Am* 2008;33:438-41.