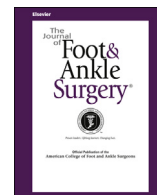


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## Case Reports and Series

## Rare Lateral Dislocation of the First Metatarsophalangeal Joint: A Case Report and Review of the Literature

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## ABSTRACT

Traumatic lateral dislocations of the first metatarsophalangeal (MTP) joint are very rare. A 44-year-old male was referred after a motorcycle to car accident because of an exposed head of the left first metatarsal through a laceration on the medial aspect of the first MTP joint. Radiographs showed a lateral dislocation of the first MTP joint, with concomitant fractures of the neck of the second metatarsal and the base of the third and fourth metatarsal bones. The dislocation was reduced in the emergency department with the patient under conscious sedation after thorough irrigation. At the 1-year postoperative visit, the patient had full painless range of motion of the first and second MTP joints without any complaints. Lateral dislocation of the first MTP joint is an injury usually associated with fracture of the adjacent metatarsals and/or ligamentous injuries. It is easily reducible, with acceptable midterm outcomes.

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First metatarsophalangeal (MTP) joint dislocation is an infrequent injury of the foot. The most common direction of dislocation of the first MTP joint is dorsally. Dorsal dislocations of the first MTP joint have been well described by Jahss (1,2). Traumatic lateral dislocations of the first MTP joint are very rare. To the best of our knowledge, only 8 cases have been reported in published studies from 1986 to date (3–9). We present another case of lateral dislocation of the first MTP joint and a comprehensive review of the published data. The study was performed at the Bone and Joint Diseases Research Center, Department of Orthopedic Surgery, Shiraz University of Medical Sciences (Shiraz, Iran) in collaboration with Schulthess Klinik (Zurich, Switzerland).

## Case Report

A 44-year-old male presented to the emergency department with a deformed left big toe after a motorcycle to car accident. The exposed

head of the first metatarsal through an approximately 5-cm laceration on the medial aspect of the first MTP joint with a skin abrasion on the dorsal side of the midfoot was noted. Dorsoplantar and oblique radiographs of the left foot showed lateral dislocation of the first MTP joint with an intact sesamoid–tendon complex. Also, an obvious fracture of second metatarsal neck and a questionable fracture of the base of the metatarsal bones were seen (Fig. 1). In the emergency department, thorough irrigation, followed by reduction of the first MTP joint was performed with the patient under ankle block anesthesia and conscious sedation (Fig. 2). To diagnose any possible tarsometatarsal injuries or fracture of the base of the metatarsals, a computed tomography scan was requested. Finally, fracture of the third and fourth metatarsal base bones, fracture of the second metatarsal neck, and intact sesamoid bones were diagnosed (Fig. 3).

The patient was transferred to the operating room after he was confirmed to be hemodynamically stable. First, wound irrigation and debridement of the dirty tissues were performed. Exploration of the wound showed an intact sesamoid complex and stripped off medial capsule and ligaments of the first MTP joint from the head of the first metatarsal (Fig. 4). After tight repair of the capsule and ligaments, the joint was completely stable. Because of the stable tarsometatarsal joints found using stress tests with the patient under anesthesia, no fixation for fracture of the base of the metatarsals was performed. Also, reduction of the first MTP joint resulted in acceptable reduction of the neck of the second metatarsal fracture. Hence, no open

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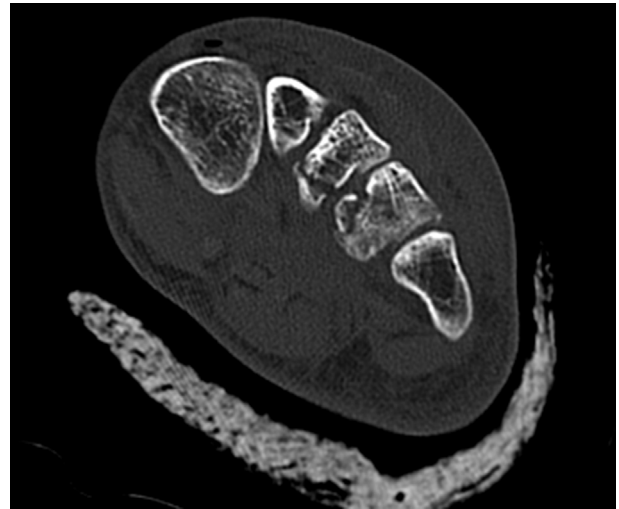
E-mail address: [vosoughiar@hotmail.com](mailto:vosoughiar@hotmail.com) (A.R. Vosoughi).



**Fig. 1.** Dorsoplantar radiograph of the left foot on arrival.



**Fig. 2.** Photograph of the reduced first metatarsophalangeal joint in the emergency unit.



**Fig. 3.** Coronal computed tomography images showing fracture of the base of the third and fourth metatarsal bones as associated injuries.

reduction or fixation was performed. A short leg non-weightbearing cast was applied.

At 3 weeks postoperatively, the short cast was changed to a short leg fiberglass walking cast for the next 3 weeks. At 1 year postoperatively, full painless range of motion of the first and second MTP joint, without tenderness, swelling, or crepitation, was apparent. A follow-up radiograph revealed a normal anatomic relationship (Fig. 5). The patient was completely satisfied and could return to his preinjury level of activity as a baker.

### Discussion

Lateral dislocation of the first MTP joint is seen very rarely. After searching the PubMed, Embase, and Web-of-Science databases, only 6 case reports regarding lateral dislocation of the first MTP joint were found (3–7,9). Also, another case report in Korean language was detected by searching the image database of Google (8). Piétu (6) described 2 cases with lateral dislocation of the first MTP joint. Finally, we found 8 cases in published studies. The characteristics of all reported cases are listed in the Table.

The proposed mechanism of lateral dislocation of the first MTP joint is direct high-energy valgus trauma to the big toe. Direct trauma



**Fig. 4.** Intact sesamoid complex and uncovered head of the metatarsal.

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