CHAPTER **2**

A SURGICAL TECHNIQUE FOR REPAIR OF THE "PRE-DISLOCATION SYNDROME"

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One of the most challenging deformities in podiatric surgery is the unstable or dislocating lesser metatarsophalangeal joint. This condition is commonly encountered in many forefoot pathologies including hallux valgus and early arthritic conditions. Reconstruction of the lesser metatarsophalangeal joint has been a challenge, and many techniques have been proposed to stabilize this joint. This preliminary surgical technique is the beginning of a series of discussions on anatomy, reconstruction and stabilization of the lesser metatarsophalangeal joint.

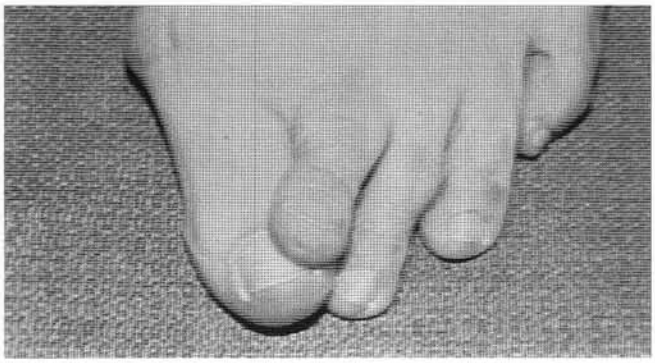

Figure 1A. Clinical view of a severe bunion deformity with an overlapping second digit. The second toe, however, demonstrates the medial deviation or luxation at the metatarsophalangeal joint. Similar luxation is beginning to occur at the third metatarsophalangeal joint.

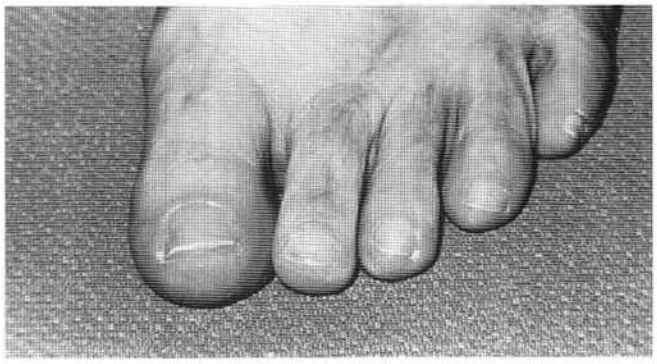

Figure 1B. Postoperative alignment of the severe hallux valgus and digital deformity reveals a satisfactory alignment and position of both the hallux and the second and third metatarsophalangeal joints. Correction of this type of dislocation of the lesser digits remains one of the more challenging disorders in modern foot surgery.

Figure 2A. Typical medial luxation at the lesser metatarsophalangeal joints. This deformity exists in the presence of a rectus first metatarsophalangeal joint. The primary etiology of this lesser metatarsophalangeal joint deviation is felt to be medial displacement of the long flexor tendons.

Figure 2B. Surgical procedures in this case have included arthrodesis of the proximal interphalangeal joints of the second and third toes, and relocation of the lesser metatarsophalangeal joints with medial capsular release and lateral capsular repair. A decompression osteotomy of the first metatarsal is depicted for treatment of the hallux limitus deformity.

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The technique demonstrated is intended for the early luxation of the lesser metatarsophalangeal joint. It is imperative that the plantar or flexor plate is intact. It must still have the ability to create plantar-grade force on the proximal phalanx when the metatarsophalangeal joint is loaded.

Figure 3A. Anatomic dissection follows the contour of the extensor hood down the medial and lateral aspects of the lesser metatarsophalangeal joint. Critical neurovascular structures are protected in subcutaneous layers, and retracted. Dissection is carried down to the level of the deep transverse intermetatarsal ligament on either side of the metatarsal head.

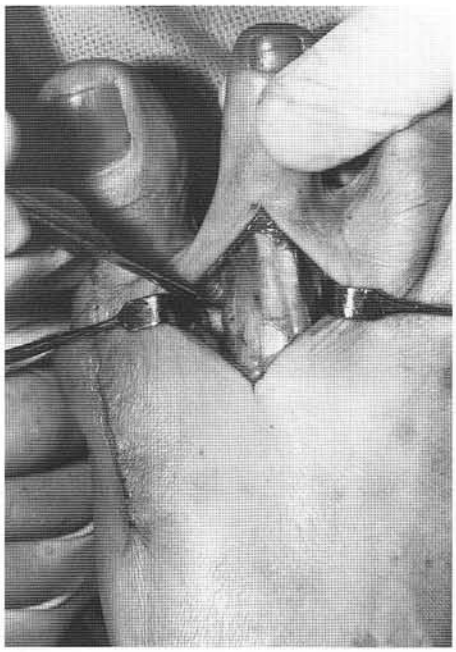

Figure 3B. The metatarsophalangeal joint is distracted with a vertical capsulotomy at the joint line, and the medial collateral ligament is severed. The intrinsic tendons of the dorsal interossei are additionally transected at the inferior aspect of the medial capsule.

Figure 3C. Distraction and lateral deviation of the joint demonstrates the medial portion of the flexor plate of the second metatarsophalangeal joint.

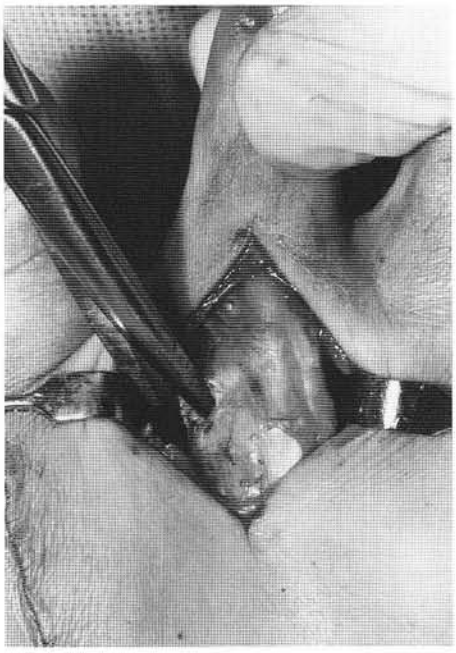

Figure 3D. A Metzembaum or Sistrunk scissor is used to section the medial half of the flexor plate. This incision will enter into the plantar flexor canal, and the long flexor tendon to the second toe should be visualized. This maneuver releases the strong medial dislocating force of the flexor plate.

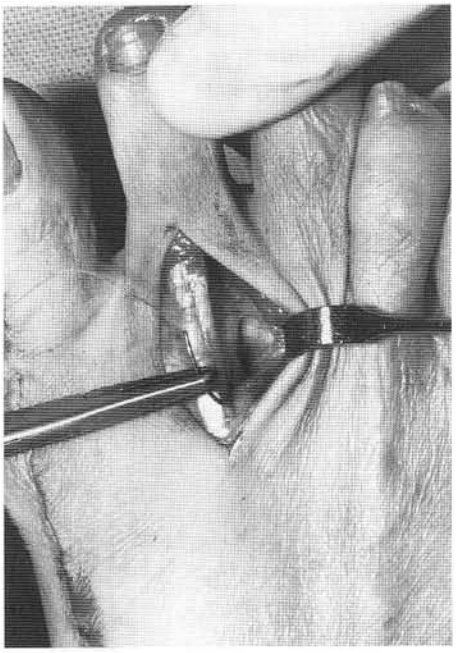

Figure 3E. A lateral retention suture is then placed in the lateral collateral ligament and into the base of the proximal phalanx. The toe is held in a slightly over-corrected attitude as the suture is tightened and secured.

Figure 3F. Early medial luxation of the metatarsophalangeal joint.

Figure 3G. View at six months postoperative following the relocation technique. Note that the interphalangeal joint of the digit is undisturbed.

Figure 4A. Similar deformity of the second metatarsophalangeal joint without significant contracture of the interphalangeal joint of the digits.

Figure 4B. Correction of hallux valgus with an Austin-type osteotomy and relocation in satisfactory alignment of the second metatarsophalangeal joint, following medial release and lateral repair.

This is but one manipulation of the early luxation of the lesser metatarsophalangeal joint. It is primarily intended for the digit that has begun to shift, and usually without flexion contracture at the interphalangeal joint level. In more advanced deformities where flexion contracture of the interphalangeal joint has occurred, proximal interphalangeal joint arthrodesis is recommended.

In even more severe deformities where severe or advanced luxation or dislocation has occurred, a similar technique can be employed, but flexor power to the proximal phalanx must be restored with techniques of flexor tendon transfer. In extreme conditions where gross distortion of the metatarsal head or base of the proximal phalanx has occurred, the technique of arthroplasty with resection of the base of the proximal phalanx or partial metatarsal head resection may be necessary.

The luxation and dislocation of the lesser metatarsophalangeal joint continues to remain as one of the most challenging disorders in modern foot surgery. Surgeons will continue to explore anatomic dissection and reconstruction of this deformity.