My Technique
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Surgical Technique
We always start with an arthroscopic evaluation of the involved lesser MTP joint using regional block anesthesia. We used the medial and lateral portals placed over the MTP articular space and a 2.7mm, 30 degrees arthroscope to this procedure. The central and distal portions of the plantar plate could be visualized, inspected, and palpated with a probe with the help of a light traction applied to the toe. The arthroscopy allows us to classify the plantar plate lesion.

An "S" shaped dorsal incision encompassing the arthroscopy portals was made over the involved digit and a longitudinal capsulotomy was performed to expose the MTP joint.

The extensor digitorum brevis and longus were elongated by Z-plasty or retracted medially, depending on the amount of the deformity. Using a sagittal saw, a Weil osteotomy, was performed. In those cases with metatarsalgia and plantar keratosis, a small slice of bone was removed to achieve a light elevation of the metatarsal head.

The distal fragment was pushed as proximally as possible and temporarily held in this position with a small Kirschner wire or may be fixed in its final position with one vertical screw. The type of lesion of the plantar plate was then inspected and confirmed.

Any piece of torn tissue was excised from the plantar margin of the proximal phalanx with a rasp or a small rongeur creating a roughened surface for the attachment of the plantar plate.

With a small needle and suture, the tear of the plantar plate was secured with non-absorbable sutures. Sometimes one can use a straight needle passed through the plantar plate to the sole of the foot, to help with the sutures. Horizontal sutures were used for longitudinal capsular tears, and transverse sutures were placed in the distal plate just proximal to where it was detached from the base of the proximal phalanx.

Two vertical drill holes (using a 1.5 mm K-wire) were made medially and laterally in the base of the proximal phalanx from the dorsal cortex to the plantar rim of the proximal phalanx (A). Using wire loops, the sutures attached to the plantar plate were then passed plantar to dorsal through the drill holes and then tied over the proximal phalanx fixing the plantar plate at the base of the phalanx (B).

As the sutures were tied over the dorsal phalangeal cortex, the digit was held in 20 degrees of plantar flexion. The Weil osteotomy was then fixed in the desired position with one vertical screw (C). After routine wound closure, a post-operative compression dressing was applied with the affected toe held in slight plantar flexion.