Extending the Indications of the Distal Hallux Valgus Correction
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Introduction:
The straightforward surgical technique and reproducible results have contributed to the distal chevron osteotomy’s popularity for bunion surgery. Current methods are limited to mild to moderate deformity. By increasing the lateral displacement of the osteotomy, the indications for this procedure can be expanded to deformities usually recommended for more complicated proximal techniques.

Features:
- Reproducible, stable metatarsal osteotomy.
- Straight-forward surgical approach familiar to most foot/ankle surgeons

Anatomic Considerations:
- The width of the metatarsal is variable and limits correction with a translational osteotomy.
- Up to 1 degree of IM angle correction is possible for each millimeter of lateral displacement.
- Hypermobility of the tarsometatarsal joint may compromise correction.
- The DMAA can be improved simultaneously with varus rotation of the osteotomy.
- Sesamoid subluxation should be assessed and addressed at the time of surgery.
- Translation may be increased up to 10mm or about 85% of the metaphyseal width.
- Moving the osteotomy proximally while maintaining capsular attachments may reduce risk of AVN

Imaging:

Surgical Tips:
- A limited lateral release is performed when sesamoid subluxation is station 2 or greater. This is usually done through a separate dorsal lateral incision to longitudinally divide the capsule dorsal to the lateral sesamoid. This simple lateral capsule release facilitates repositioning of the sesamoids at the time of medial capsular plication. The adductor tendon is usually left intact to reduce risk of hallux varus.
• The bunion exposure is through a longitudinal medial incision. The capsule is widely exposed dorsal and plantar to protect the sensory nerve branches. A longitudinal midline capsular incision is created to expose the joint and distal metatarsal. A small amount of the medial eminence is removed to retain MTP stability.

• The Chevron osteotomy is outlined with a marking pen with the apex 15-20 mm proximal to the articular surface. The angle is 35-45 degrees. Osteotomy limbs that are too short are unstable, too long are difficult to translate.

• A freer elevator is used to lift the soft tissues and periosteum at the anticipated osteotomy sites leaving all other soft tissues attached to the distal head fragment.

• The proximal or distal orientation of the saw during the osteotomy will affect the length of the lateral metatarsal spike. Generally a straight, neutral cut is best.

• Translate the distal head fragment by traction on the toe and thumb pressure medially to “perch” the metatarsal head on the residual lateral spike of the proximal metatarsal. Slight medial compression will reduce the DMAA.

• Fixation is from the medial metatarsal shaft across the lateral cortex and into the metatarsal head. Many options exist, two .054 K-wires work well.

• The remaining medial metatarsal prominence must be cut and contoured in line with the metatarsal head. Failure to cut enough bone may result in a residual mid-metatarsal bump post op.

• Redundant medial capsule is excised from the plantar aspect, repaired, and then rotated dorsally with a pants-over-vest suture technique to correct sesamoid position.

• Sutures removed at two weeks, new bunion dressing applied until the 5th week for pin removal. Patients then use a toe spacer and soft removable wrap.

Results
• 72 procedures in 62 patients with AOFAS scores and radiographic assessments obtained at an average of 27.6 months post-op.
• AOFAS scores averaged 93.3 with complete radiographic healing in all patients.
• Hallux valgus angle correction averaged 22.3 degrees and intermetatarsal angle correction averaged 7.7 degrees.

References: