The Hallux Metatarsophalangeal Capsule: An Anatomic Study with Respect to Percutaneous Hallux Valgus Correction

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Introduction/Purpose: Minimally invasive surgery for the treatment of hallux valgus deformities has become increasingly popular. Knowledge of the location of the hallux MTP proximal capsular origin on the metatarsal neck is critical for surgeons in planning and executing extra-capsular corrective osteotomies. A cadaveric study was undertaken to further study this anatomic relationship.

Methods: Ten nonpaired fresh-frozen frozen cadaveric specimens were used for this study. Careful dissection was performed, and the capsular origin of the hallux MTP joint was measured from the central portion of the metatarsal head in the medial, lateral, dorsal, plantarmedial, and plantarlateral dimensions.

Results: The ten specimens had a mean age of 77 years, five female and five male. The mean distances from the central hallux metatarsal head to the MTP capsular origin was 15.2mm dorsally, 8.4mm medially, 9.6mm laterally, 19.3mm plantarmedially, and 21.0mm plantarlaterally.

Conclusion: The MTP capsular origin at the hallux metatarsal varies at different anatomic positions. Knowledge of this capsular anatomy is critical for orthopaedic surgeons when planning and performing minimally invasive distal metatarsal osteotomies for the correction of hallux valgus.

Table 2.

|                      |        |
|----------------------|--------|
| Age (y)              | 77.4   |
| Dorsal (mm)          | 15.2 (12.0-18.4) |
| Plantarmedial (mm)   | 19.3 (13.8-24.8) |
| Plantarlateral (mm)  | 21.0 (17.3-24.6) |
| Medial (mm)          | 8.4 (4.0-12.8) |
| Lateral (mm)         | 9.6 (6.8-12.4) |

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