

Relationship of Sesamoid Position and Other Radiographic Measurements in Hallux Valgus

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Introduction/Purpose: Many radiographic measurements have been developed and used for evaluating hallux valgus, but their relationships have not been clearly established. The purpose of the present study was to investigate the relationship and reliability of sesamoid position and other radiographic measurements in hallux valgus.

Methods: We included 180 patients (mean age 52 years; 18 males and 162 females) with weightbearing plain radiograph. In anteroposterior view, hallux valgus angle, intermetatarsal angle, distal metatarsal articular angle, proximal phalangeal articular angle, hallux interphalangeal angle, sesamoid subluxation and metatarsophalangeal congruency were measured. In lateral view, Meary angle (tarso-1st metatarsal angle) was measured. 3 trained observers measured. Correlations among the radiographic measurements were analyzed. Relationship of sesamoid position and other radiographic measurements were evaluated using ANOVA or Fisher's exact test.

Results: The sesamoid subluxation had the correlation with the hallux valgus angle ($p < 0.001$), intermetatarsal angle ($p < 0.001$) and metatarso-phalangeal joint congruency ($p < 0.001$). As the sesamoid subluxation grade increased, the metatarso-phalangeal joint congruency was non-congruent joint. In intraobserver reliability, the hallux valgus angle showed the highest ICC value (0.989; 95% CI, 0.984–0.992)

Conclusion: we suggest that the measurements of sesamoid subluxation in assessments of hallux valgus deformity may be helpful for operation and degree of metatarsophalangeal congruency.

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