

Functional treatment for fractures to the base of the 5th metatarsal - Influence of fracture location and fracture characteristics

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Introduction/Purpose: Fractures to the base of the fifth metatarsal are common, but their treatment remains controversial. Especially for Lawrence and Botte (L&B) type II fractures, there is conflicting evidence and consequently no consensus. Further, many authors consider displacement, articular involvement, and number of fragments an indication for surgery, although evidence is missing. The aim of this study was to evaluate the outcome of functional treatment for all L&B type I and II fractures. Of special interest were the influence of (1) the fracture location (L&B type I vs. II) and (2) the fracture characteristics (displacement, intra-articular involvement, comminution) on the subjective outcome.

Methods: Retrospective registry study with a prospective follow-up. Patients with an acute, isolated, epi-metaphyseal fracture to the fifth metatarsal bone (L&B type I and II) treated by full weightbearing with a minimum follow-up of 6 months were included. Fracture location (L&B type I and II) and characteristics (displacement <2mm or >2mm, intra-articular involvement, and number of fragments) were assessed. Outcome parameters were return to work, return to sports, VAS-FA, and SF-12. The influence of the fracture location and -characteristics on these parameters was tested.

Results: 39 patients (40±15 years, 56% female) were enrolled with a mean follow-up of 22±10 months. L&B type I fractures occurred in 59%, type II in 41%. Thirty-one percent of all fractures were dislocated, 74% intra-articular, and 41% multi-fragmentary. Patients returned to work after 17±12 days, to sports after 53±22 days. The VAS-FA score at the final follow-up was 96±4, SF-12 PCS score 57±5 and MCS score 51±8. No complications were reported, no patient required surgery. None of the assessed outcome parameters differed significantly between (1) the different fracture locations (L&B type I vs. II) or (2) the different fracture characteristics (displacement, intra-articular involvement, and number of fragments).

Conclusion: Both, L&B I and II fractures featured excellent results with immediate full weightbearing. Consequently, L&B type I and II fractures should be summarized as epi-metaphyseal fractures. Fracture displacement, articular involvement, and number of fragments did not influence the outcome. Therefore, functional treatment should be recommended for all epi-metaphyseal fractures.