Treatment of late-stage Freiberg disease using a double stemmed flexible silicone prosthesis
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Introduction/Purpose: The purpose of this study was to evaluate the clinical outcomes using a double stemmed flexible silicone prosthesis for the treatment of Freiberg disease in its late stages.

Methods: The subjects consisted of 13 feet from 13 cases suffering from Freiberg disease that underwent extra-articular dorsal closing-wedge osteotomy using a polyblend suture. The average age was 31.7 (range 13–72) years. The average follow up period was 17 (range 14–24) months. Regarding image findings, time to bone union and metatarsal shortening was reviewed. The investigation was carried out using the range of motion (ROM), visual analog scale (VAS), and Japanese Society of the Surgery of Foot lesser toe scale (JSSF score) in the MTP joint before surgery and at the latest follow-up.

Results: Calluses under the metatarsal head were not observed in any cases. The mean metatarsal shortening was 2.33±2.07 mm at follow-up. The bone union required an average of 8.4±0.8 weeks. The average ROM of dorsal flexion improved from 37.2±5.3° before surgery to 73.6±9.9° at latest follow-up (p<0.0001). The average ROM of plantar flexion improved from 16.0±10.1° before surgery to 19.5±8.6° at latest follow-up (p=0.35). The average VAS significantly improved from 75.3±8.5 before surgery to 4.9±4.2 at latest follow-up (p<0.0001). The average JSSF score significantly improved from 67.3±9.4 points before surgery to 98.8±3.0 points at the latest follow-up (p<0.0001).

Conclusion: Extra-articular dorsal closing-wedge osteotomy using a polyblend suture was carried out to treat Freiberg disease. The bone union was observed in all cases with improved clinical results. Fixation using a polyblend suture was considered to be useful.