

Locking Versus Nonlocking Plates for the Treatment of Posterior Malleolar Ankle Fractures: A Retrospective Cohort Study and Cost Analysis

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Purpose: The aim of this study was to evaluate the outcomes of posterior malleolar (PM) ankle fractures treated with conventional nonlocking (CNP) or anatomic locking plates (ALP), and also to compare both constructs in terms of crude costs.

Methods: A retrospective cohort study was designed. One-third tubular CNPs were used in 22 patients and posterior distal tibia ALPs were used in 11 patients between 2017 and 2020. The primary outcome was ankle and hindfoot American Orthopedic Foot & Ankle Society (AOFAS) score at 12-month follow-up visit. All complications, radiographic evaluation, and implant construct costs were also registered and compared. The average follow-up was 25.4 months (range, 12-42).

Results: No significant difference was observed between both cohorts at each follow-up period, in terms of AOFAS score and complication rate ($P>0.05$). We found that the ALP construct is 17-times more expensive than the CNP construct in our institution ($P<0.001$).

Conclusions: Anatomic locking posterior distal tibia plate should not become a regular implant for any PM ankle fracture since equivalent clinical and radiological results were obtained in our study using conventional nonlocking plates with a significantly reduced cost.