

Screw fixation of the posterior malleolar fracture: An experimental and prospective clinical study

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Introduction/Purpose: Posterior malleolar fracture is known to be an indication for surgery when the size of the fragment is greater than 25% to 30% of the joint surface. The purpose of this study was to compare the results of cannulated screw fixation and early joint motion in patients with ankle fracture with posterior malleolar fracture of less than 25%, and we do cadaver experiments.

Methods: The clinical portion of the study evaluated 70 patients with fracture of the posterior malleolus that comprised less than 25% of the articular surface. After fixation for lateral and/or medial malleolar fractures, cannulated screw fixation was performed for posterior malleolar fractures in 34 cases. (A group) In other 36 cases, fixation was not performed for posterior malleolar fractures. (B group) One week after the operation, ankle range of motion exercise was performed. Cadaver studies were evaluated both cannulated screw fixed and non-fixed in less than 25% fractures of the posterior malleolar. The stability of the ankle joint was measured in 12 cases. In 6 cases, the posterior malleolar was fixed and the other 6 cases were not fixed.

Results: There was no significant difference in clinical outcome between Group A and B and functional score at 2 years follow up. However, the ankle function score at 6 months and 1 year after the follow - up was significantly higher in group A than in group B. In the cadaver study, the group with screw fixation was significantly stable in external rotation.

Conclusion: In case of less than 25% posterior fracture, screw fixation is considered to have a significant effect on recovery and clinical outcome in the short term due to stability.

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