

## Posterior Malleolar Ankle Fractures: An Effort in Improving Outcomes

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**Introduction/Purpose:** There is an increasing acceptance that the clinical outcomes following posterior malleolar fractures are less than satisfactory. In creating a treatment guiding classification and algorithm, we report our results in a system change in management of posterior malleolar fractures in our unit.

**Methods:** All fractures were classified according to Mason and Molloy classification (Foot Ankle Int. 2017 Nov;38(11):1229-1235) based on CT scans obtained pre-operatively. This dictated the treatment algorithm. Type 1 fractures underwent syndesmotomic fixation. Type 2A fractures underwent ORIF through a posterolateral incision, and type 2B and 3 fractures underwent ORIF through a posteromedial incision. The patient remained NWB for 6 weeks postoperative. Data was collected prospectively from December 2014 to July 2017.

**Results:** Patient-related outcome measures were obtained in 50 patients with at least 1 year follow up (mean 18 months). The overall OMAS score for all posterior malleolar fractures in this cohort was 74.1 (range 35-100). According to Mason and Molloy classification, the mean OMAS for type 1 was 75.9 (Range 30-100), type 2A 75.0 (range 35-100), type 2B 74.0 (range 55-100) and type 3 70.5 (Range 35-100). Using one way ANOVA test, there was no significant difference ( $p=.886$ ) between groups or within groups. There was a trend, however, that the lower the Mason and Molloy classification had higher OMAS outcomes. The overall 1-year EQ-5D index for this cohort was 0.88 (SD 0.22). The average visual analogue score for this patient group was 77.5 (SD 26.2).

**Conclusion:** We have been able to demonstrate an improvement in functional scores for all posterior malleolar fractures with the treatment algorithm applied using the Mason and Molloy classification. This is compared to our previous study where traditional posterior malleolar management was undertaken. Our OMAS scores have now improved to what would be expected from unimalleolar fractures, illustrating the importance of understanding the injury mechanism and patterns of injury. Mason and Molloy type 3 fractures have marginally poorer outcomes, which correlates with a more significant injury.

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