

LOCKED PLATING FOR PHALANGEAL “PILON” FRACTURES: VOLAR, LATERAL, DORSAL

Objective: “Pilon” fractures are highly unstable in multiple planes and prone to axial collapse, malunion, and stiffness. No method of fixation to date has demonstrated consistent, reliable results.

Methods: 40 patients (29 M, 11F) with a mean age of 39 y/o measured at 13 weeks after locked plating (0.6 mm thick titanium plate with 1.5 mm screws) for “pilon” fractures (5 index, 9 long, 14 ring, 12 small). The plate was applied at the site of greatest comminution and axial collapse: 24 volar, 11 lateral, 5 dorsal. AROM was initiated within a week of surgery. Comparisons between digits and plate location were made with ANOVA, $p < 0.05$ (no significant differences were found).

Results: Clinical / radiographic healing by 6 weeks with no hardware failure, infection, tendon rupture, or wound dehiscence. Tenolysis in 2 patients.

DASH	12
PIP flexion	93 degrees
PIP extension	-5 degrees
DIP flexion	53 degrees
DIP extension	-1 degrees
Articular step-off	0.1 mm
Articular gap	0.02 mm
Coronal mal-alignment	1.2 degrees

Conclusion: Locked plating demonstrated a high level of consistency for maintaining fracture reduction without complications, and favorable clinical outcomes compared to historical literature.