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Acu-Loc 2® Wrist Plating System

Key Publications

The Effects of the Frag-Loc® Compression Screw on Distal Radius Fracture With a Displaced Dorsoulnar Fragment

Publication Excerpt

"Dorsal plate fixation using a dorsal approach offers the advantages of direct visualization and reduction of the dorsoulnar fragment. However, hardware-related extensor tendon irritation, weak fixation power of the dorsal screw, and technical difficulties are major limitations of dorsal plate fixation [8–10]. Recently, the Frag-Loc compression screw (Acumed, Hillsboro, OR, USA) has become available. This screw system was designed to immobilize the dorsal bone fragment of distal radius fracture using a palmar locking plate. Herein, we evaluate the radiographic and clinical outcomes of surgery using Frag-Loc compression screw with palmar locking plate fixation for distal radius fractures that include a displaced dorsoulnar fragment."

Journal Abstract

Purpose

The purpose of this study is to evaluate the radiographic and clinical outcomes of the Frag-Loc compression screw with palmar plate fixation on distal radius fractures that include a displaced dorsoulnar fragment.

Patients and Methods

This retrospective comparative study enrolled 48 patients who had an unstable distal radius fracture and a dorsoulnar fragment that was more than 2 mm displaced and that had involvement of more than one-quarter of the articular surface. Twenty-six of the 48 patients were treated with a palmar locking plate without a Frag-Loc compression screw (group 1) and the other 22 patients were treated with palmar locking plate with a Frag-Loc compression screw to fix the dorsoulnar fragment (group 2). First, we reviewed all pre-surgical computerized tomographic (CT) scans. Second, we used the gap distance between the dorsoulnar and palmar fragment as seen on post-surgical axial and sagittal CT scans to determine outcome. The gap distance was measured at the point of maximum distance perpendicular to the plane of the main fracture line. Clinical outcomes were evaluated based on the patient-rated wrist evaluation (PRWE) score; the disabilities of the arm, shoulder and hand score; wrist active range of motion; and grip strength.

Results

There were no statistically significant differences in clinical outcome between the two groups. However, there were statistically significant differences in post-surgical gap distance. The mean post-surgical gap distances for group 1 were 1.3 mm (range 0.2–3.8 mm) on axial CT scans and 1.4 mm (range 0.5–2.4 mm) on sagittal CT scans, while the mean post-surgical gap distances for group 2 were 0.7 mm (range 0.7–1.6 mm) and 0.7 mm (range 0.3–1.1 mm).

Conclusion

This study shows that the Frag-Loc compression screw can reduce the gap distance between the dorsoulnar fragment and the distal radius, according to evaluation of post-surgical axial and sagittal CT scans. This result suggests that the Frag-Loc compression screw is an effective and simple treatment option to immobilize a dorsoulnar fragment associated with distal radius fracture.

Reference

Lee J, Cho J, Lee S. The effects of the frag-loc compression screw on distal radius fracture with a displaced dorsoulnar fragment. *Arch Orthop Trauma Surg.* 2015;135(9):1315-1321.

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