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KEY PROCEDURES

Treatment of Distal Radial Fractures by Open Reduction and Internal Fixation with a Volar Locking Plate

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Abstract

The volar locking plate is a popular implant for surgical management of unstable distal radial fractures. We routinely utilize this system for all distal radial fractures except for those with entrapped intra-articular fragments and fractures with a displaced dorsomedial facet fracture (which is hard to capture with the volar approach alone). In this video, we describe in detail the necessary steps for successful placement of the volar locking plate, starting with preoperative planning and ending with expected outcomes. The approach that we utilize is through the flexor carpi radialis tendon sheath and avoids the radial artery. In the video, we describe 4 variations on the application of a volar locking plate: (1) the standard technique after appropriate reduction and provisional fixation with Kirschner wires, (2) regaining length through a shortened distal radial fracture, (3) using the volar plate to assist in the reduction and regain volar tilt, and (4) intraoperative management of coronal shift of the distal fragment. Complications reported for the volar locking plate have decreased with newer low-profile plate designs; however, they still include volar tendon irritation and/or rupture and median neuropathy. Postoperatively, we advise a brief 2-week period of immobilization for wound-healing, which is followed by a period during which a removable wrist splint is used and patients are instructed on the performance of a hand therapy regimen.

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