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INTRODUCTION: Dorsal plating of distal radius fractures has been associated with high rates of hardware removal, tendonitis, and tendon rupture. Much of this research was performed using 2.5mm thick distal radius plating, whereas modern dorsal plates are thinner (1.2mm-1.5mm). We examine whether modern plates have higher rates of complications than volar plates.

METHODS: We search Ovid MEDLINE, Web of Science, and EMBASE for literature describing tendon complications associated with plating of distal radius fractures. Inclusion criteria included any comparison between volar and dorsal plating and report of tendon complication. Exclusion criteria included: failure to specify low-profile dorsal plates; lack of volar plating comparison arm; no reporting of tendon complications. All studies were assessed for quality using MINOR's criteria.

RESULTS: All 5 included studies were retrospective cohorts, totaling 806 subjects; 584 received volar plates and 222 received dorsal plates. Minimum average follow-up was 5 months. Of the volar plate group, 2% had symptoms consistent with tendonitis, 1% experienced a tendon rupture, and 4% underwent hardware removal. In the dorsal group, 6% had tendonitis, 1% had tendon ruptures, and 11% underwent hardware removal. Meta-analysis showed no significant difference in rates of tendonitis (4 studies, $Z=0.79$, $P=0.43$) or tendon rupture (5 studies, $Z=0.59$, $P=0.56$).

DISCUSSION: To our knowledge, this review provides the largest comparison of modern dorsal and volar distal radius plates to date. Our results do not demonstrate increased risk of tendon complications in patients who underwent dorsal plating. This study sets a precedent for more routine use of dorsal plating.