



Hand Surgery and
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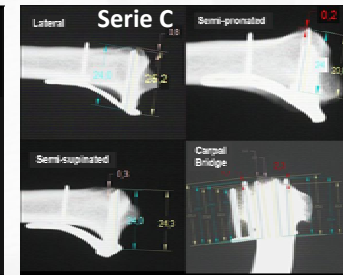
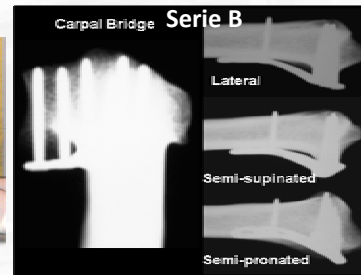
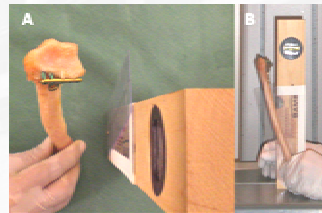
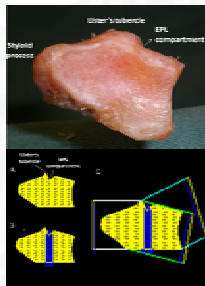
What is the best radiographic incidence angle to evaluate dorsal screw prominence in the radius? A cadaveric study

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Purpose: To examine the carpal-bridge view of the radius and compare it against profile and oblique views in the identification of screw prominence after volar fixed-angle plating of the distal radius.

Materials and Methods: A Synthes LCP Distal Radius Plate System was secured to the volar face of the radius, with the longitudinal component fixed with a 3.5-mm screw and the transverse segment of the plate with five 2.4 mm screws, the maximum length possible without breaching the dorsal cortex (Series A). The hardware then was x-rayed from the frontal, lateral, semi-pronated oblique, semi-supinated oblique and carpal-bridge views (a 75° tilt from the table surface). Subsequently, we replaced the first and fourth screws with sequentially longer screws, 2 and 4 mm longer in Series B and C, respectively. The same series of x-rays was repeated for each screw change. In a second phase, we used AutoCAD® 2006 software to evaluate the length of screw prominence detectable in each x-ray.

Results: In Series A, at all angles, all screws were seen completely inside bone tissue. In Series B, we detected screw prominence in the carpal-bridge view and minimal salience in the semi-pronated oblique view. In Series C, the oblique and carpal-bridge views both identified screw prominence. From the lateral view, the screws were all seen to enter Lister's tubercle. Unlike the carpal-bridge views, oblique views could not detect which screw was most prominent.



Conclusions: The carpal-bridge view was most accurate at detecting screw prominence, in general, and at identifying individual screws.