

Screw Penetration through Dorsal Cortex during Volar Plate Fixation of the Distal Radius: A Cadaveric Investigation



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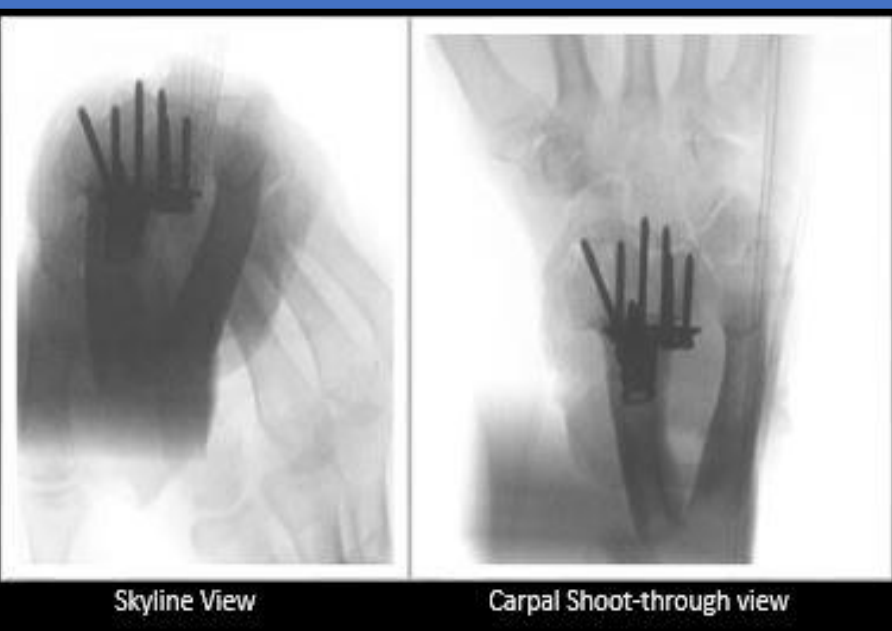
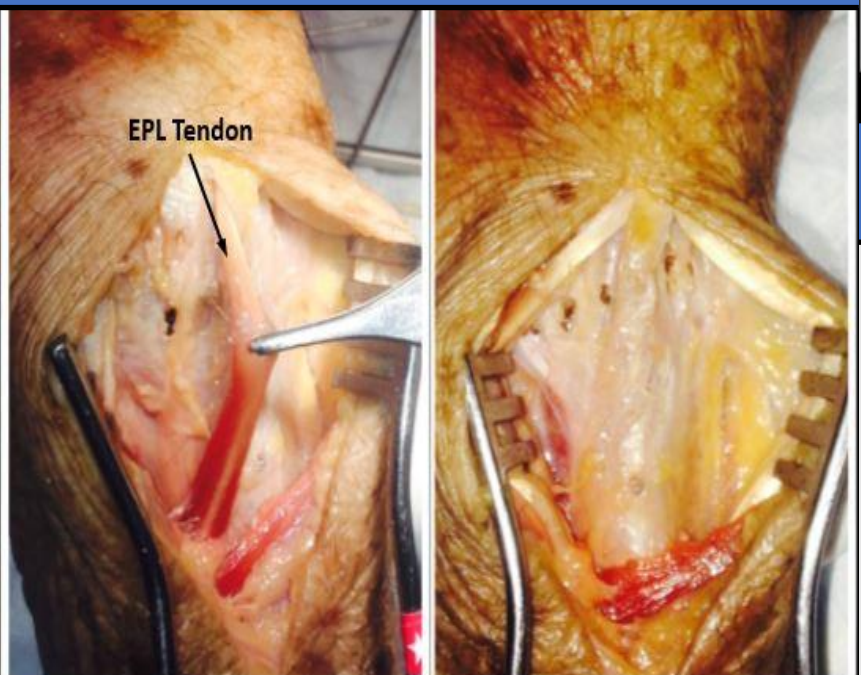
BACKGROUND METHODS DATA & RESULTS Figure 2

- Screw penetration through the dorsal cortex of the distal radius may lead to soft tissue injury and is difficult to discern on standard lateral radiographs.
- We report on the sensitivity and specificity of the skyline and carpal-shoot through views to predict dorsal cortex screw protrusion.

- Seven fresh frozen cadaver arms were instrumented with distal radius volar locking plates.
- Following instrumentation. A dorsal dissection of the wrist was conducted to determine optimal (baseline) screw length (Fig 1)
- Two screws were sequentially lengthened to 2 and 4 mm above baseline.
- Skyline & carpal shoot-through radiographs were taken following each increase in screw length. (Fig 2)
- Sixty-four orthopaedic surgeons were surveyed asking them to determine screw protrusion based on the radiographs.

Radiographic View	2mm (Sens)	4mm (Sens)	Specificity
Skyline	75%	76%	85%
Carpal shoot-through	86%	89%	84%

Figure 1



CONCLUSION

We believe that the carpal shoot-through view has utility and should be implemented to augment standard intra-operative views, and may decrease the incidence of soft tissue injuries.