

Endoscopic Versus Open Treatment of Carpal Tunnel Syndrome: Postoperative Complications in patients on Anticoagulation

Kiyanna Thomas¹, Arman Kishan¹, Mark Haft¹, Steve Li¹, Dawn Laporte¹, Duc Nguyen¹

¹Division of Hand and Upper Extremity Surgery, Department of Orthopaedic Surgery, Johns Hopkins University, Baltimore, MD
Email of Presenting Author: kthom154@jh.edu

Disclosures: Kiyanna Thomas (N), Arman Kishan (N), Mark Haft (N), Steve Li (N), Dawn Laporte (Editor, Journal of Hand Surgery), Duc Nguyen (N)

INTRODUCTION: Patients receiving anticoagulation therapy frequently experience increased rates of postoperative complications. Presently, limited data exists regarding the outcomes of patients undergoing carpal tunnel release (CTR) while on anticoagulation. Our objective is to examine and compare the occurrence of complications in patients on anticoagulation who underwent either endoscopic CTR (ECTR) or open CTR (OCTR) for CTS.

METHODS: The TriNet X database was utilized to retrospectively identify patients who underwent OCTR or ECTR while concurrently on anticoagulation. Demographic data, medical comorbidities, and complication rates were analyzed. We used multivariable analysis to identify differences in postoperative complications, including wound infection within 90 days, wound dehiscence within 90 days, and intraoperative median nerve injury between the two surgical methods in patients on anticoagulation.

RESULTS SECTION: A total of 10,919 carpal tunnel syndrome patients on anticoagulation were included in the study, with 9082 and 1837 undergoing OCTR and ECTR, respectively. Among patients on anticoagulation, those undergoing ECTR exhibited a significantly lower occurrence of 90-day wound infection ($p < 0.001$) and nerve injury ($p < 0.001$) compared to those who underwent OCTR. However, there was no statistically significant difference in the risk of 90-day wound dehiscence between the two groups ($p = 0.323$).

DISCUSSION: In prior studies, OCTR demonstrated reduced rates of postoperative complications compared to ECTR in the general population. Our study demonstrates that among patients on anticoagulation, those undergoing ECTR experienced a significantly lower incidence of 90-day wound infection and nerve injury, with risk reductions of 35% and 40%, respectively. These findings suggest that patients on anticoagulation therapy may benefit from considering an ECTR rather than OCTR.

CLINICAL RELEVANCE: The findings of this study highlight that patients undergoing carpal tunnel release (CTR) while on anticoagulation therapy have notably reduced rates of 90-day wound infection and nerve injury when opting for endoscopic CTR (ECTR) compared to open CTR (OCTR). These findings contribute to the ongoing debate between OCTR vs. ECTR, as previous studies report increased complication rates in ECTR when compared to OCTR, but in this patient population, ECTR demonstrates lower complication rates.

Table 1. Matched Outcomes for Endoscopic Versus Open CTR in Patients on Anticoagulation

Outcomes	RR	95% CI	P-value
90-Day Wound Infection	0.65	(0.51-0.84)	<0.001
Nerve Injury	0.60	(0.44-0.81)	<0.001
90-Day Wound Dehiscence	0.81	(0.53-1.23)	0.323