

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

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**Abstract :** Objective: Patients receiving anticoagulation therapy frequently experience increased rates of postoperative complications. Presently, limited data exist regarding the outcomes of patients undergoing carpal tunnel release surgery (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: 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 ( $p = 0.323$ ). Conclusion: In prior studies, ECTR demonstrated reduced rates of postoperative complications compared to OCTR 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 support using ECTR as a preferred surgical method for patients with CTS who are on anticoagulation therapy.

**Keywords :** endoscopic treatment of carpal tunnel syndrome, open treatment of carpal tunnel syndrome, postoperative complications in patients on anticoagulation, carpal tunnel syndrome

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