Ipsilateral Preoperative Corticosteroid Injection for Carpal Tunnel Not Associated with Postoperative Deep Infection

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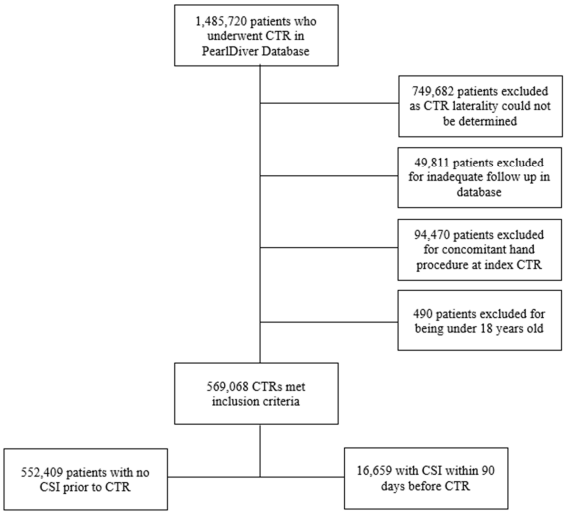
INTRODUCTION:
Corticosteroid injection is a common diagnostic and therapeutic treatment for carpal tunnel syndrome (CTS) that has been associated with increased postoperative infection rates when given in the preoperative period before carpal tunnel release (CTR). However, prior studies have reported considerable variation in the preoperative window associated with significant infection risk. Thus, this study sought to investigate the association between preoperative timing of corticosteroid injection and rate of postoperative deep infection requiring surgical intervention after CTR.

METHODS: The PearlDiver M165 database, an administrative claims database, was queried for patients who underwent endoscopic or open CTR. Exclusion criteria included concomitant hand procedure, age less than 18 years, unspecified or bilateral CTS, preoperative data available <2 years, postoperative data available <90 days. Patients who received an ipsilateral corticosteroid injection within 90 days prior to CTR or no corticosteroid injection (nCSI) were matched by age, sex, Elixhauser Comorbidity Index, hypertension, diabetes, obesity, rheumatoid arthritis, hypothyroidism, and tobacco use. Patients with a preoperative corticosteroid injection were further stratified into those who received corticosteroid injection 0-30 days, 31-60 day, and 61-90 days before CTR. Demographic variables between matched cohorts were compared using chi-squared test or Kruskal-Wallis tests. Univariate and multivariable logistic regressions were used to determine the association between corticosteroid injection timing and 30-day postoperative deep infection requiring surgical intervention.

RESULTS: Between 2010 and 2022, 569,068 patients who underwent CTR were identified (Figure 1). Of this group, 552,409 patients did not receive a corticosteroid injection while 16,659 received a preoperative corticosteroid injection within 90 days of surgery. A cohort of 16,116 patients who did not receive preoperative corticosteroid injection were matched to the study group. Multivariable analysis revealed that the preoperative corticosteroid injection cohort was associated with experiencing higher rates of postoperative deep infection, however, there was no significant association between preoperative corticosteroid injection and postoperative deep infection 30 days after CTR (p = 0.99) (Table 1). Patients who received a corticosteroid injection within 0 – 30 days (OR 1.69; p = 0.11), 31 – 60 days (OR 1.07; p = 0.83) and 61 – 90 days (OR 0.55; p = 0.13) preoperatively were similarly not associated with increased odds of postoperative deep infection relative to nCSI patients.

DISCUSSION AND CONCLUSION: This study suggests that preoperative corticosteroid injection, at all studied timepoints, was not associated with increased risk for postoperative deep infection, a divergence from existing literature. The primary endpoint of postoperative deep infection requiring surgical intervention focused on the patients who experienced substantial morbidity and costs. Hand surgeons should consider these findings when evaluating risks and benefits of non-surgical and surgical treatments for CTS.



Preoperative CSI timing (days)	Patients (n)	Infections (n, %)	OR (97.5% CI)	P-value
0 – 30 Days	3363	11 (0.33)	1.69 (0.84 – 3.11)	0.11
31 – 60 Days	7037	15 (0.21)	1.07 (0.58 – 1.85)	0.83
61 – 90 Days	5716	1-10 (0.02 – 0.17)	0.55 (0.23 – 1.12)	0.13
0 – 90 Days	16116	-	1.00 (0.61 – 1.62)	0.99
Controls	16116	33 (0.20)	-	reference