

Trends in Endoscopic Versus Open Treatment of Carpal Tunnel Syndrome in Rheumatoid Arthritis Patients

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Abstract : Objective: Carpal tunnel syndrome can be managed surgically with endoscopic or open carpal tunnel release (CTR). Rheumatoid arthritis (RA) is a known risk factor for Carpal Tunnel Syndrome (CTS) and is believed to be related to compression of the median nerve secondary to inflammation. We aimed to analyze national trends, outcomes, and patient-specific comorbidities associated with ECTR and OCTR in patients with RA. Methods: A retrospective cohort study was conducted using the PearlDiver database, identifying 683 RA patients undergoing ECTR and 4234 undergoing OCTR between 2010 and 2014. Demographic data, comorbidities, and complication rates were analyzed. Univariate and multivariable analyses assessed differences between the treatment methods. Results: Patients with RA undergoing ECTR in comparison to OCTR had no significant differences in medical comorbidities such as hypertension, obesity, chronic kidney disease, hypothyroidism and diabetes mellitus. Patients in the ECTR group reported a risk ratio of 1.44 (95%CI: 1.10-1.89, p=0.01) of requiring repeat procedures within 90 days of the initial procedure. Five-year trends in ECTR and OCTR procedures reported a combined annual growth rate of 5.6% and 13.15, respectively. Conclusion: Endoscopic and open approaches to CTR are important considerations in surgical planning. RA and ECTR have previously been identified as independent risk factors for revision CTR. Our study has identified the 90-day risk of repeat procedures to be elevated in the ECTR group in comparison to the OCTR group. Additionally, the growth of OCTR procedures has outpaced the growth of ECTR procedures in the same period, likely in response to the trend of ECTR leading to higher rates of repeat procedures. The need for revision following ECTR in patients with RA could be related to chronic inflammation leading to transverse carpal ligament thickening and concomitant tenosynovitis. Future directions could include further characterization of repeat procedures performed in this subset of patients.

Keywords : endoscopic treatment of carpal tunnel syndrome, open treatment of carpal tunnel syndrome, rheumatoid arthritis, trends analysis, carpal tunnel syndrome

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