

## Ultrasound Guided Treatment of Carpal Tunnel Syndrome

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**Abstract :** Introduction: Carpal Tunnel Syndrome has numerous nonsurgical treatments including splint, physical therapy and corticosteroid injections. Aim: The purpose of this study was to evaluate the effectiveness of an ultrasound guided treatment procedure, for individuals with severe carpal tunnel syndrome. Materials and Method: 20 patients with an electrodiagnostic evidence of severe carpal tunnel syndrome were treated by an office-based ultrasound guided procedure (combination of percutaneous needle release of carpal tunnel and corticosteroid injection). Electrodiagnostic (nerve conduction study), clinical (Boston Carpal Tunnel Questionnaire, grip strength) and ultrasonic (median nerve and carpal tunnel cross-sectional area) measurements were recorded at baseline and one month after intervention. Results: Our preliminary data analysis showed that in one month follow up, patients had a significantly smaller cross-sectional area of the median nerve compared to pretreatment values (mean difference 0.06; 95%CI: 0.02-0.1;  $p < 0.001$ ). In addition, patients had significantly less functional impairment (mean difference 35; 95% CI:28.7-43.4 ;  $p < 0.001$ ), and an improved hand grip strength in one month follow up (mean difference 5.4; 95%CI: 3.1-7.8;  $p < 0.001$ ;). There were no significant complications. Conclusion: Patients with severe carpal tunnel syndrome, who are candidates for surgical intervention, can consider office-based ultrasound guided needle release of carpal tunnel as an alternative safe treatment.

**Keywords :** Carpal Tunnel Syndrome, needle release, pain, ultrasound

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