

**Ly-Pen D, Andreu J-L, et al. Surgical Decompression Versus Local Steroid Injection in Carpal Tunnel Syndrome. *Arthritis Rheum* 2005;52(2):612-619.**

Design: Randomized clinical trial

Population/sample size/setting:

- 163 wrists of 101 patients (93 women, 8 men, mean age 52) treated for CTS in a hospital rheumatology department in Madrid
- Eligibility criteria were age 18 or over, CTS symptoms for 3 months, unresponsive to a course of 2 weeks of NSAID and splinting
- Exclusion criteria were thenar atrophy, previous surgery or local injection for CTS, pregnancy, diabetes, hypothyroidism, inflammatory arthropathy, or polyneuropathy

Main outcome measures:

- Wrists were randomized to surgical release with limited palmar incision (n=80) or injection with 20 mg paramethasone using a 22 gauge needle
- Steroid injection patients were seen 14 days after injection; if nocturnal paresthesias had not decreased of a VAS of 0, a second injection was given
- A 100 mm VAS was used for three symptoms nocturnal paresthesias, diurnal pain, and functional impairment as perceived by the patient
- Treatment success was defined as achieving a 20% reduction from baseline values for nocturnal paresthesias at the 3 month follow-up as the primary endpoint
- Secondary endpoints were a 20% reduction in nocturnal paresthesias at the end of 6 and 12 months, a 20% response for pain and functional impairment, and reductions of 50% and 70% in nocturnal paresthesias, pain, and functional impairment
- Treatment failure was defined as (1) absence of at least a 20% VAS improvement at the 3 month visit for at least 1 of the 3 symptoms, or (2) reappearance of symptoms between visits that represents less than a 20% improvement from the baseline score
- Treatment failure led to a second intervention: for surgical patients, a second operation was done using a wide-incision decompression; for steroid patients, the intervention was a limited palmar incision decompression
- Treatment failures were considered study dropouts, and data from later visits were excluded from the study
- At 3 months, success was reported in 94% of steroid patients and in 75% of surgery patients, a statistically significant advantage for the steroid group
- At 12 months, success was reported in 69.9% of steroid patients and in 75% of surgery group
- For secondary outcomes, the pattern was similar to that of primary success: the 3-month follow-up favored steroid injection, but the 12 month follow-up either favored surgery or showed no difference between groups

Authors' conclusions:

- At 3 months, local injection of steroid is superior to surgery in relieving nocturnal paresthesias and other CTS symptoms
- In contrast, at 12 months, there are no statistically significant differences between steroid injection and surgery
- This discrepancy may be because steroid injection produces rapid symptom relief at a time when CTS surgical incision may still be painful due to scarring and local inflammation

Comments:

- Several difficulties arise in presentation of methods and results
- The methods section states that wrists which did not improve at least 20% from baseline nocturnal paresthesias were defined treatment failures and were considered study dropouts; this would seem to undermine the purpose of the study, but it is not clear that this exclusion was actually done, since the authors also state that the intent-to-treat principle was used for the analysis
- Attrition in the surgery group was nearly 29% at 12 months, and was 20% in the injection group; this is great enough to cause concern in the interpretation of the study
- A Spanish language version of the DASH (Disabilities of Arm, Hand, Shoulder) questionnaire was not available at the time of the study, and functional outcomes may not be well predicted by the comparison of nocturnal hand paresthesias

Assessment: inadequate for an evidence statement (high attrition and lack of functional comparison)