**Mardani-Kivi M, Mobarakeh MK, et al. Corticosteroid injection with or without thumb spica cast for de Quervain tenosynovitis. J Hand Surg Am. 2014 ;39(1);37-41.**

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Design: randomized clinical trial

Purpose of study: in patients with de Quervain’s disease (dQD) , to compare the effectiveness of steroid injections plus splinting versus the effectiveness of steroid injection only

Population/sample size/setting:

* 67 patients (12 men, 47 women, mean age 44) treated for dQD at a university orthopedics department in Kerman, Iran
* Eligibility required pain on the radial side of the wrist with tenderness at the first dorsal compartment and a positive Finkelstein’s test, and a pain score greater than 6
* Exclusion criteria were age under 18, steroid injection in the previous six months, previous surgery, wrist fracture, history of severe trauma, pregnancy, rheumatoid arthritis, radiculopathy, carpal tunnel syndrome, infection or dermatologic lesions at the treatment site, and taking of analgesics

Interventions:

* All patients received a corticosteroid injection (CSI) and were randomized to one of two groups: CSI alone (n=34) or CSI plus a thumb spica cast (TS, n=33)
	+ CSI consisted of 40 mg methylprednisolone acetate and 1 cc of 2% lidocaine in the first dorsal compartment at the point of maximal tenderness
	+ TS consisted of a fiberglass cast which was removed after three weeks; the patients were encouraged to move their wrist and fingers while the cast was in place
	+ No formal therapy was given to either group

Outcomes:

* Followup evaluations were done 3 weeks and 6 months after treatment by a “well-trained primary care physician”
* Treatment success rate was the primary outcome and for it to be counted as successful three criteria had to be met: absence of pain on the radial side of the wrist, absence of tenderness at the first dorsal compartment, and a negative Finkelstein’s test; if one criterion was missing, the result was classified as a treatment failure
	+ If the result was a failure, the same treatment was performed a second time and a followup visit 3 weeks later was arranged
* The QuickDASH score (Quick Disabilities of Arm, Hand, and Shoulder) and the pain VAS were secondary outcomes
* At the three week followup, 32/33 CSI+TS patients had treatment success, which was higher than in the CSI group, where 26/34 patients
* All 9 unsuccessful patients were re-treated at the three week followup, and all 9 patients had treatment success at the subsequent three week evaluation
* At 6 months, treatment was successful in 28/30 CSI+TS patients, which was greater than for the CSI group, where success was recorded in 20/29 patients
* The secondary outcomes of QuickDASH and pain VAS also showed greater improvements for CSI+TS than for the CSI group

Authors’ conclusions:

* CSI plus TS was superior to CSI alone in treating dQD with regards to success rates and functional outcomes
* The thumb spica cast is likely to improve outcomes of dQD by reducing ulnar deviation and thumb flexion, so that the patient does not stress the abductor pollicis longus and extensor pollicis brevis tendons
* The limitations of the study included the lack of an untreated control group and lack of a blinded design

Comments:

* In the results section, there appear to be some accounting problems
	+ 33 patients were randomized to CSI+TS and 34 were randomized to CSI alone
	+ 2 patients in the CSI+TS and 1 patient in the CSI group were lost to followup before the three week post-treatment visit
	+ 1 patient in the CSI+TS group and 4 in the CSI group were excluded because they took analgesics in violation of the study protocol
	+ Thus, there were 30 patients in the CSI+TS group and 29 in the CSI group who completed the questionnaire, as shown in Figure 1
	+ However, the success rates given in the second paragraph (32/33 in the CSI+TS group and 26/34 in the CSI group) conflict with the withdrawal numbers given in the first paragraph of the results section
* Evaluations were done 3 weeks “following treatment,” which had different durations in the two groups
	+ The CSI group would have to be evaluated 3 weeks after the injection
	+ The CSI+TS group would have to be evaluated 6 weeks after the injection, because treatment included 3 weeks of cast immobilization
	+ This difference in timing of the initial primary outcome assessment would not have predictable consequences, but could be advantageous for the group which was evaluated after more time had elapsed from the time of injection
	+ The six month success rates are less affected by this difference in timing, where the advantage of adding the spica cast to CSI remain apparent
* There are some difficult issues with respect to the setting of the study, since it is likely that 3 weeks of cast immobilization would not be usual care in the United States, where a removable thumb spica splint is more generally done
	+ Both splint and cast would have the desirable effects of relieving stress of the abductor pollicis longus and extensor pollicis brevis tendons, but the splint would probably avoid problems which could arise from complete immobilization for three weeks
	+ Thus, the study does suggest that a treatment strategy which gives mechanical support to the EBP and APL tendons is beneficial for dQD, but does not show that cast immobilization is necessary
* The results of two of the criteria for success (absence of tenderness at the first dorsal compartment and a negative Finkelstein’s test) could easily be influenced by the examiner, who was apparently not blinded to the treatment given, and this is likely to be a source of bias in the outcome assessment
* Most of the inclusion criteria are fairly clear and reasonable, but one of the exclusion criteria was “taking analgesics”
	+ This could mean not taking a single over the counter medication such as aspirin, or could mean not taking analgesics such as opioids

Assessment:

Adequate for some evidence that in the setting of de Quervain’s disease, functional benefits of a corticosteroid injection are enhanced by a thumb spica cast which reduces stress on the abductor pollicis longus and extensor pollicis brevis tendons, but inadequate for evidence that a thumb spica cast, compared to other splinting methods is necessary to achieve this added benefit.