



INTRODUCTION

- In an attempt to avoid surgical intervention, patients and surgeons alike turn to corticosteroid injections in various hand conditions, including carpal tunnel syndrome, stenosing tenosynovitis, and de Quervain tenosynovitis. [1-3]
- Multiple side effects associated with the use of corticosteroids, including tendon rupture, deformity, infection, hypercoagulability, and increased hyperglycemic episodes in diabetic patients have been reported. [4-6]

OBJECTIVES

- This study aims to identify any influence that anti-coagulation and anti-platelet (“blood thinner”) medications may have on complication rates with corticosteroid injections placed in the hand.

DISCLOSURES

- **Disclosures and Funding Sources:** None
- **IRB Approval:** IRB approval was obtained from the St. Luke's University Health Network IRB Committee

METHODS

- **Design:** Retrospective chart review
- **Setting:** Suburban Orthopaedic hand surgery outpatient practice
- **Patient population:** All patients between the ages of 18 to 89 years who received corticosteroid injections in the hand or wrist as anti-inflammatory therapy between 2013 and 2017
- **Stratification:** All included patients were divided into two groups: patients on “blood-thinners” and patients not on “blood-thinners.”
- **Injection:** A suspension consisting of 6 milligrams of Celestone combined with 1 milligram of 1% Lidocaine without Epinephrine.

DEMOGRAPHICS

		Diagnosis					Total
		Trigger Finger	OA	DQTS	CTS	Other	
Gender	Female	170	169	64	48	29	480
	Male	108	87	18	18	15	246
Age	18 yrs-39 yrs	9	4	10	11	9	43
	40 yrs-59 yrs	118	109	35	39	18	319
	60 yrs-79 yrs	126	127	33	11	15	312
	80+ years	25	16	4	5	2	52
	Total Diagnoses	278	256	82	66	44	726

Table 1. Demographic information and diagnosis frequency of our patient population. DQTS = De Quervain's Tenosynovitis. CTS = Carpal Tunnel Syndrome

RESULTS

	Diagnosis (# of Complications/Total # of Injections)					Total
	Trigger Finger	OA	DQTS	CTS	Other	
Anti-coagulant	1/12	1/31	0/2	0/1	0/4	2/50
Anti-platelet	1/92	1/216	1/31	0/19	1/13	4/371
Both	0/5	0/6	0/0	0/1	0/0	0/12
Neither	5/269	1/581	0/86	0/58	0/46	6/1040
Total	7/378	3/834	1/119	0/79	1/63	12/1473

Table 2. Complication Rate after Corticosteroid Injections in the Hand by Medication Type and Diagnosis. DQTS = De Quervain's Tenosynovitis. CTS = Carpal Tunnel Syndrome

- **Adverse Events:** 7 complaints of increased pain at the injection site (0.5%), 4 complaints of swelling and erythema (0.3%), and 3 complaints consistent with contact dermatitis (0.2%)
- There were 0 instances of hemarthrosis or hematoma seen post-procedure (0.0%).
- No statistical difference in complication rates between patients on “blood thinners” and not on blood thinners using Chi-squared testing (p=0.12)
- Post-hoc testing yielded no statistical difference when comparing complication rates in patients on anti-coagulation, patients on anti-platelet therapy, patients on both, and patients not on “blood thinners”(p=0.06)

CONCLUSIONS

- Given the low rate of overall complications and between groups, the authors believe that corticosteroid injections are safe and prudent conservative treatment options in all patients.
- Under the assumption that patients are properly medicated and managed, this intervention should continue to be the focal point of conservative treatment, possibly sparing patients the need for surgical intervention.

REFERENCES

1. Marshall SC, Tardif G, Ashworth NL. Local corticosteroid injection for carpal tunnel syndrome. *The Cochrane Library*. 2007 Apr 18.
2. Castellanos J, Muñoz-Mahamud E, Domínguez E, Del Amo P, Izquierdo O, Fillat P. Long-term effectiveness of corticosteroid injections for trigger finger and thumb. *The Journal of Hand Surgery*. 2015 Jan 31;40(1):121-6.
3. Goel R, Abzug JM. De Quervain's Tenosynovitis: A Review of the Rehabilitative Options. *Hand*. 2015 Mar;10(1):1-5.
4. Gottlieb NL, Riskin WG. Complications of local corticosteroid injections. *JAMA*. 1980 Apr 18;243(15):1547-8.
5. Catalano LW, Glickel SZ, Barron OA, Harrison R, Marshall A, Purcell-Laffer M. Effect of local corticosteroid injection of the hand and wrist on blood glucose in patients with diabetes mellitus. *Orthopedics*. 2012 Dec 1;35(12):e1754-8.
6. Ansell JE, Tiarks C, Fairchild VK. Coagulation abnormalities associated with the use of anabolic steroids. *American Heart Journal*. 1993 Feb 1;125(2):367-71.