The Prevalence of Intrinsic Tightness in Patients with Trigger Finger

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INTRODUCTION: Trigger finger (TF) is an exceedingly common condition with generally good outcomes following nonsurgical and surgical treatment. However, some patients have prolonged symptoms including stiffness and discomfort. Numerous predictive factors for prolonged recovery following trigger finger release have been identified, which include pre-operative PIP flexion contracture, fraying/partial flexor tendon tears, diabetes mellitus, and concomitant hand conditions such as carpal tunnel syndrome or Dupuytren's contracture.[1-3] Anecdotally in our practice, we observed many patients who have concomitant triggering and intrinsic tightness affecting the same finger. It is important for physicians to recognize that intrinsic tightness may play a role in suboptimal outcomes. We hypothesize that certain patients with trigger finger will develop concurrent intrinsic tightness (IT). This may be a factor leading to more persistent symptoms following treatment and resolution of triggering.

METHODS:

218 trigger fingers were evaluated for severity of triggering, duration of triggering, presence of IT, and severity of IT. Triggering severity was classified on an established 1-3 scale. IT was determined by Bunnell testing and its severity graded based on a previously determined scale. Comorbidities, demographic information, and the need for further treatment such as occupational therapy or intrinsic release surgery were evaluated.

Comparisons of categorical variables, including the presence of IT between comorbidities and the need for further treatment, were assessed using either a chi-square test or Fisher's exact test, depending on expected cell counts (Fisher's exact test was used when any expected frequency was <5).

Continuous variables including age were tested for normality using the Shapiro-Wilk test. Depending on the distribution, group comparisons were performed using either an independent t-test for normally distributed data or a Mann-Whitney U test for non-normally distributed data. Statistical tests were two-tailed and set at the $p<0.05$ level.

RESULTS:

IT was significantly associated with TF severity ($p = 0.032$). The prevalence of IT increased with TF severity, occurring in 9.1% of patients with grade 1, 27.8% of patients with grade 2, and 28.0% with grade 3 TFs. Age, smoking status, and a history of pain disorder were significantly associated with the severity of IT ($p = 0.041$, $p = 0.025$, and $p = 0.041$, respectively).

Following the standard treatment of their TF, 28.2% of patients with concomitant TF and IT required additional treatment such as supervised hand therapy, whereas only 5.3% of non-IT TF patients required further treatment. Lastly, patients with concomitant TF and IT required a median of two cortisone shots for their TF, compared to a median of one shot for non-IT patients. This difference was statistically significant ($p=0.046$).

DISCUSSION AND CONCLUSION:

There is a significant prevalence of IT in patients with TF, especially among those with more severe TF. Patients who are older, with a smoking history, or with a pain disorder should be closely monitored. Additionally, patients with IT may require further treatment in the form of supervised hand therapy or intrinsic release surgery. Providers need to consider this in establishing prognosis and managing patient expectations.

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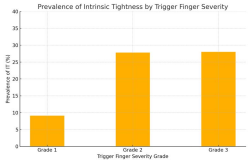

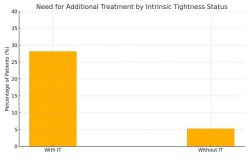

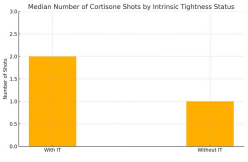

Table 1: Association Between Demographics, Comorbidities, and Severity of Intrinsic Tightness

Variable	Overall (n=215)	Mild (n=28)	Moderate (n=18)	Severe (n=3)	P-value
Age, years (mean ± SD)	68.46 ± 11.88	71.54 ± 10.14	66.62 ± 9.11	57.67 ± 8.62	**0.041**[1]
Sex					0.754[2]
Male (%)	111 (52.1)	15 (55.6)	10 (55.6)	1 (33.3)	
Female (%)	102 (47.9)	12 (44.4)	8 (44.4)	2 (66.7)	
Diabetes Mellitus (%)	160 (79.6)	20 (83.3)	18 (71.4)	2 (66.7)	0.226[2]
Alcohol Use (%)	100 (49.5)	13 (52.0)	8 (57.1)	3 (100.0)	0.284[2]
Smoking Status (%)	124 (61.4)	12 (50.7)	12 (66.7)	2 (66.7)	**0.025**[2]
Pack Years (mean ± SD)	20.01 ± 22.06	19.17 ± 16.12	0.00 (NA)	6.50 (NA)	NA
Hypertension (%)	106 (53.0)	14 (58.3)	9 (64.3)	3 (100.0)	0.347[2]
Hypothyroidism (%)	175 (87.1)	23 (92.0)	11 (84.6)	3 (100.0)	0.644[2]
Liver Disease (%)	26 (12.9)	2 (8.0)	2 (15.4)	0 (0.0)	0.696[2]
Kidney Disease (%)	6 (3.0)	1 (4.2)	0 (0.0)	0 (0.0)	—
Nerve/Brain Disease (%)	13 (6.4)	4 (16.7)	0 (0.0)	0 (0.0)	—
Autoimmune Disease (%)	178 (90.4)	23 (100.0)	12 (85.7)	3 (100.0)	0.142[2]
Pain Disorder (%)	26 (13.0)	4 (28.6)	1 (33.3)	0 (0.0)	**0.041**[2]

[1] t-test
[2] Fisher's exact test