

Presenting PROMIS Scores Correlate with Treatment Selection in De Quervain Tenosynovitis

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Introduction

De Quervain Tenosynovitis (DQT) is a painful condition of the hand affecting the first extensor compartment. Currently, choice of treatment is largely empiric. We hypothesize that PROMIS scores at the time of presentation correlate with the eventual decision to pursue surgical release.

The **objectives** of this study were to:

- Determine if there was a correlation between presenting PROMIS scores and initial intervention choice
- Determine if there was a correlation between presenting PROMIS scores and undergoing operative treatment and
- Identify the factors that most contribute to choosing surgery as a treatment option

Methods

Patients were grouped by treatment and then subgrouped by initial and final operative status (*Figure 1*). A two-sided t-test was performed comparing PROMIS scores of the groups. Patient groups were dichotomized by PROMIS score using standard cut-offs for analysis. Logistic regression was then used to determine odds-ratio of surgical intervention.

Results

Of the 685 patients who met inclusion criteria, 87.0% of patients received at least one injection and 29.9% underwent a surgical release by the end of the follow up period. Operative patients had a significantly lower mean presenting PF score and a significantly higher mean PI score than for non-operative patients (*Figure 2*). Furthermore, logistic analysis revealed that patients with PF scores below 40 (OR = 1.62 [1.051-2.496]) and PI scores above 60 (OR = 1.62 [1.062-2.47]) had significantly increased odds of undergoing surgery (*Table 2*).

Results

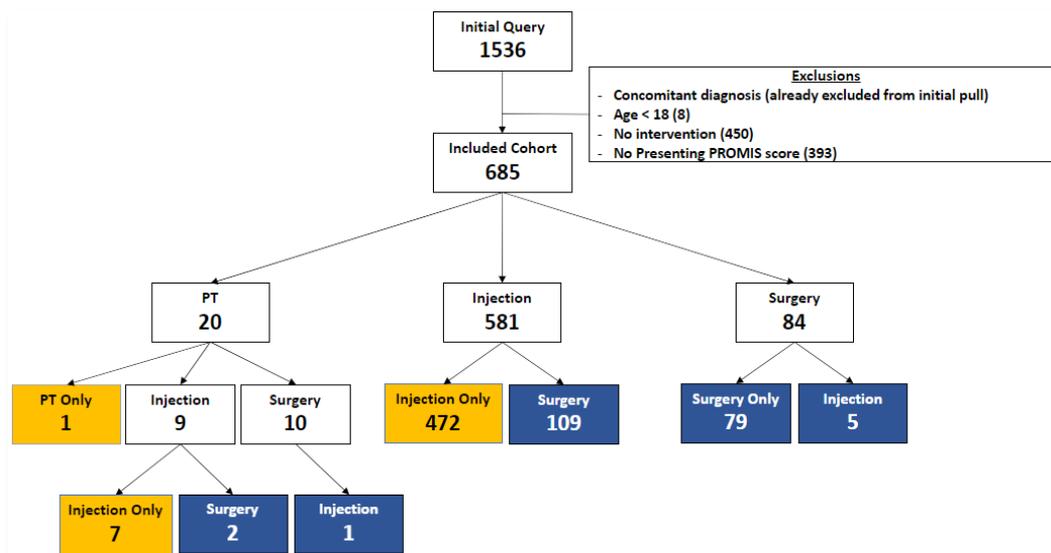


Figure 1: Breakdown of intervention pathways. Counts represent patients with a presenting PROMIS score. Colored blocks represent a final operative status where yellow denotes non-operative management and blue denotes undergoing surgery.

Presenting PROMIS Score Distribution by Final Operative Status (n=685)

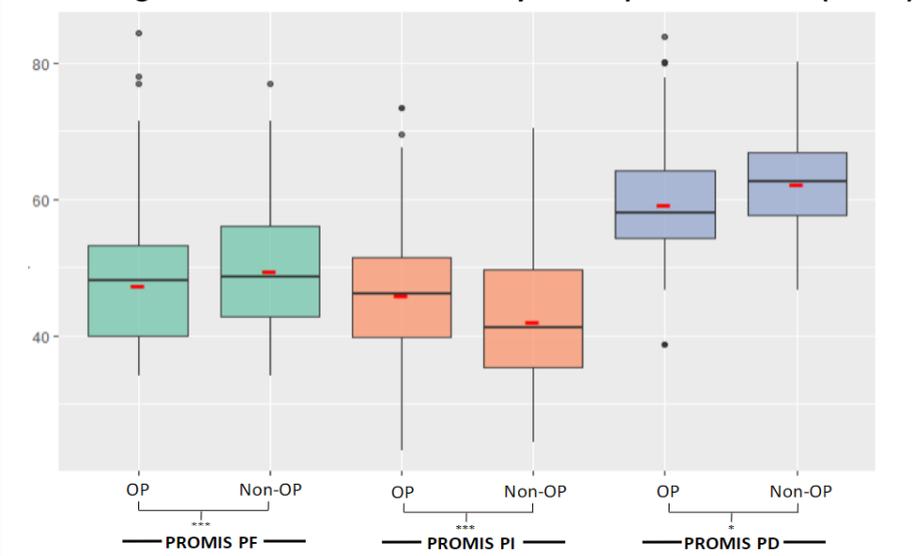


Figure 2: Box plots of the presenting Physical Function (PF) Pain Interference (PI) and Depression (PD) PROMIS scores. Red lines indicate the mean. Significance denotes a significant t-test result between PROMIS scores. (* = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$)

	Non-Operative n = 480 (70.1%)	Surgery n = 205 (29.9%)	Total	χ^2 P-Value
Gender				0.0004
Male	112 (84.2%)	21 (15.8%)	133	
Female	368 (66.7%)	184 (33.3%)	552	
Age				0.0009
< 40	147 (75.8%)	47 (24.2%)	194	
40 - 60	188 (62.7%)	112 (37.3%)	300	
> 60	145 (75.9%)	46 (24.1%)	191	
Race				0.5531
White	391 (70.6%)	163 (29.4%)	554	
Non-White	89 (67.9%)	42 (32.1%)	131	
Ethnicity				0.9326
Hispanic	25 (69.4%)	11 (30.6%)	36	
Non-Hispanic	455 (70.1%)	194 (29.9%)	649	
PF Score				>0.0001
< 40	123 (57.5%)	91 (42.5%)	214	
40 ≤	357 (75.8%)	114 (24.2%)	471	
PI Score				>0.0001
60 ≤	201 (61.5%)	126 (38.5%)	327	
< 60	279 (77.9%)	79 (22.1%)	358	
PD Score				0.0966
60 ≤	55 (62.5%)	33 (37.5%)	88	
< 60	425 (71.2%)	172 (28.8%)	597	

Table 1: Demographic breakdown of the study cohort. Those groups which had statistically significant Chi-squared values were used in the logistic model

Effect	Odds Ratio Estimates	
	Point Estimate	95% Wald Confidence Limits
PF Score		
PF > 40 (reference)	1	-- --
PF < 40	1.62	1.051 2.496
PI Score		
PI < 60 (reference)	1	-- --
PI > 60	1.62	1.062 2.47
Gender		
Male (reference)	1	-- --
Female	2.65	1.59 4.416
Age		
40 - 60 (reference)	1	-- --
< 40	0.567	0.374 0.860
> 60	0.552	0.363 0.842

Table 2: Odds ratios obtained from a logistic model constructed for each variable while controlling for all other factors

Conclusions

- PROMIS survey results could be used to identify patients that are likely to fail non-operative intervention for DQT.
- While there were no significant differences in PPS between patients choosing PT, injection or surgery as their initial management, patients who scored <40 for PF or >60 for PI had significantly increased odds of eventually undergoing surgery.
- Females, patients 40-60 years old, and those with lower PF or higher PI PPS had significantly higher odds of eventually requiring surgery.
- Older patients tended to choose more invasive treatments as their initial management
- PROMIS survey response rates were higher in the injection and surgery group compared to the PT group

Future Directions

The next step would be to follow the PROMIS scores of these patients after treatment to determine success of each intervention as defined by achieving a minimum clinically important difference and to identify the time frame in which patients improve for each treatment option.

References

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Disclosures

None of the authors or a member of their immediate families has received anything of value from or owns stock in a commercial company or institution