



THE STANFORD PROTOCOL FOR MALE PELVIC PAIN: INTEGRATION OF MYOFASCIAL TRIGGER POINT RELEASE AND PARADOXICAL RELAXATION TRAINING



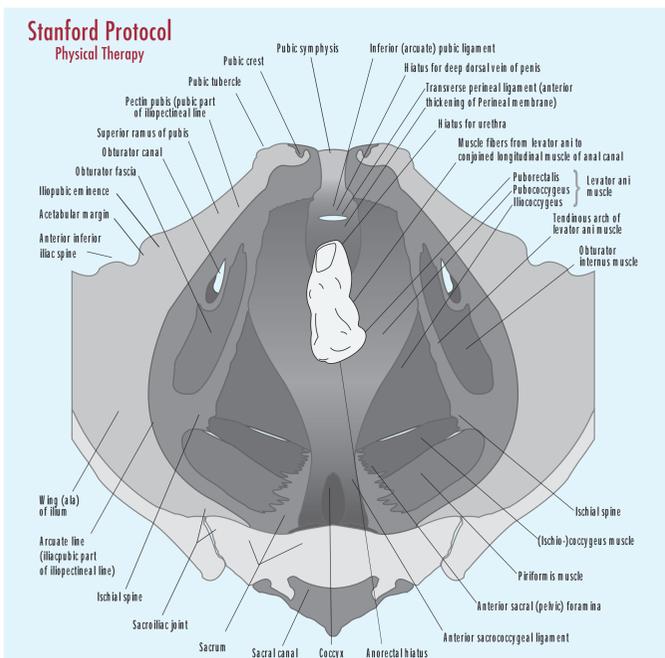
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INTRODUCTION

A neurobehavioral perspective to the etiology of chronic pelvic pain syndrome (CPPS) is now appropriately emerging. Pelvic pain manifests itself as a myofascial pain syndrome where abnormal muscular tension could explain much of the discomfort and abnormal urinary dysfunction seen in this disorder. Genitourinary disorders such as voiding dysfunction and ejaculatory pain are intimately related to the autonomic nervous system and smooth/striated muscle balance. Any number of acute and chronic stress factors working via the sympathetic endplate may be involved. Some disorders of CPPS may be improved with cognitive behavior therapy and biofeedback regimens of relaxation. Travell and Simons offered the first manual on trigger points (TrP) and myofascial pain and dysfunction in 1983. A myofascial TrP is defined as a hyper-irritable, sensitive spot, usually within a taut band of skeletal muscle or fascia. Palpation of internal or external myofascial TrPs has been shown to recreate a patient's symptoms. Electrophysiological studies suggest active loci within dysfunctional extrafusal motor endplates. Specific psychological stress can induce abnormal EMG activity.

We evaluated a new approach to treatment of CPPS with the Stanford-developed protocol with a team of a urologist, a physical therapist and a psychologist to provide urologic evaluation, physiotherapy with *myofascial trigger point (TrP) release* in conjunction with cognitive behavior modification to achieve autonomic and pelvic floor self regulation using *paradoxical relaxation training (PRT)*.



Anterior Levator Ani, inferior portion

- Can refer to perineum and base of the penis

Fig. 1 Example of physical therapy of internal pelvic trigger points.

METHODS

Symptom Assessments and Outcome Evaluations

- Questionnaires administered prior to treatment and at each follow-up visit:
 - **Stanford Pelvic Pain Symptom Survey (PPSS):** domains for pain, urinary symptoms (similar to AUA symptom score), sexual dysfunction, and a pain visual analog scale.
 - **NIH-Chronic Prostatitis Symptom Index (NIH-CPSI)**
- Response to therapy defined as $\geq 25\%$ improvement (decrease) in symptom score.
- After completing the MFRT/PRT protocol, patient perceptions of the overall response to treatment were rated using a **Global Response Assessment (GRA)** questionnaire: response categories were *markedly improved, moderately improved, slightly improved, no change, slightly worse, moderately worse or markedly worse*.

Myofascial trigger point assessment and release therapy (MFRT)

- Patients treated in lateral position, individual muscle groups are palpated and myofascial TrPs identified; pressure is held for about 60 seconds to release (Fig. 1). Positive myofascial TrPs induce pain on palpation that tends to reproduce symptoms at the site or referred to a nearby anatomical location. For example, myofascial TrPs in the anterior *levator ani* muscle often refer pain to the tip of the penis. The levator endopelvic fascia lateral to the prostate represents the most common location of TrPs encountered in men with pelvic pain.
- MFRT physiotherapy is given weekly for 4 weeks, then bi-weekly for 8 weeks.

Paradoxical Relaxation Therapy (PRT)

- In conjunction with physiotherapy, a fundamental aspect of treatment is PRT -- a form of cognitive behavioral therapy -- a method of autonomic self-regulation and pelvic muscle tension reduction.
- Patients receive one hour of individual verbal instructions and a supervised practice session weekly for 8 weeks in progressive relaxation exercises devised by Wise to achieve specific profound relaxation of the pelvic floor.
- Training includes 1) a specific breathing technique to quiet anxiety and 2) relaxation training sessions directing patients to focus attention on the effortless acceptance of tension in specific areas of the body.
- Daily home practice relaxation sessions of one hour are recommended for a minimum of 6 months using a series of 36 instructional audio taped lessons.

Statistical Analyses

- Patients who participated in the MFRT/PRT protocol, even on a limited basis, were analyzed to report an overall clinical outcome.
- Differences between pre- and post-treatment scores for total pain, urinary symptoms and pain VAS from the Stanford PPSS, and the total score and individual domains from the NIH-CPSI questionnaire were analyzed with the paired samples t-test method.

RESULTS

- 138 men with refractory CPPS enrolled and treated; average age 40.5 years (range 16-79). Disease duration: median 31 months (range 1-354).
- 59% (81/138) of patients had clinically meaningful improvements ($\geq 25\%$ -100% decreased symptom score) in total pain as reported on Stanford PPSS (Table 1).
- Of these, 39% achieved $\geq 50\%$ symptom improvement
 - Total pain score \downarrow 69% Urinary score \downarrow 80%
- After a median of five myofascial TrP release treatments, median baseline total pain scores of 13 decreased significantly by 8 points ($p < 0.001$, Stanford PPSS (Table 2)).
- 72% of patients reported GRAs indicating marked (46%) or moderate (26%) improvements in their symptoms.
- Both symptom surveys, the NIH-CPSI and the Stanford PPSS, reflected similar levels of symptom improvement after treatment (Fig. 2).

Fig. 2 Global Response Assessment (GRA) and NIH-CPSI Total Score Improvements

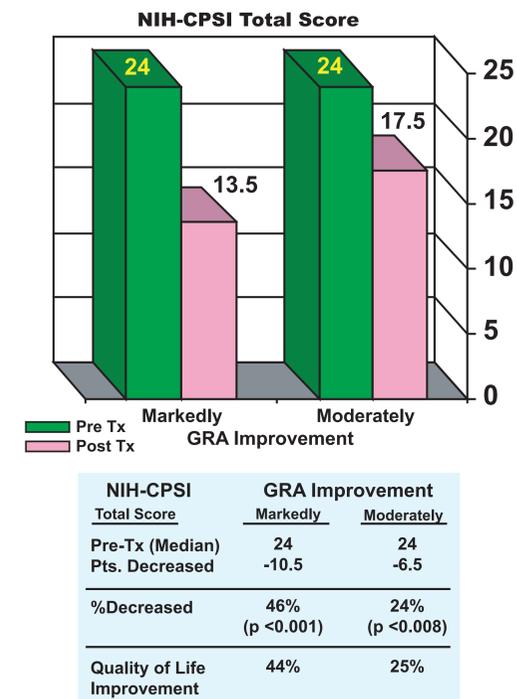


Table 1. Improvements in pain and urinary symptom scores and pain VAS after MFRT/PRT: using Stanford PPSS scores

PPSS (No. Pts)	Pretreatment Scores, Median	Level of Clinical Improvement	No. (%) Pts	Median Score % Change
Total Pain (138)	13	$\geq 50\%$	54 39%	-69%
		$\geq 25-49\%$	27 20%	-38%
		$< 25\%$	22 16%	-17%
		No Change	6 4%	0
		Worse	29 21%	+27%
Pain VAS (136)	4	$\geq 50\%$	49 36%	-67%
		$\geq 25-49\%$	28 21%	-33%
		$< 25\%$	13 10%	-14%
		No Change	15 11%	0
		Worse	31 22%	+50%
Urinary (138)	8	$\geq 50\%$	51 37%	-80%
		$\geq 25-49\%$	19 14%	-39%
		$< 25\%$	15 11%	-14%
		No Change	25 18%	0
		Worse	28 20%	+60%

Table 2. Patient-reported Global Response Assessments (GRA) and Pelvic Pain Symptom Scores after MFRT/PRT (total 92 patients)

GRA \ddagger Category (No. Pts)	Symptom	Pre -Tx Score Median	Points Decreased or Increased	% Patients (n) with Clinical Improvements $\geq 25\%$	
				$\geq 25\%$	$\geq 50\%$
Markedly Improved (42)	Total Pain	13	-8 p < 0.001	83% (35)	64% (27)
	Urinary	8	-3.5 p < 0.001	57% (24)	48% (20)
	Pain VAS	4	-2 p < 0.001	83% (35)	60% (25)
Moderately Improved (24)	Total Pain	14.5	-3.5 p = 0.001	50% (12)	21% (5)
	Urinary	6	-1 p = 0.067	38% (9)	33% (8)
	Pain VAS	5	-1 p = 0.088	54% (13)	21% (5)
Slightly Improved (7)	Total Pain	11	+3 p = 0.596	—	14% (1)
	Urinary	11	-2 p = 0.165	29% (2)	14% (1)
	Pain VAS	3	+1 p = 0.334	—	14% (1)
No Change (18)	Total Pain	11	0 p = 0.358	22% (4)	17% (3)
	Urinary	11	-1 p = 0.077	—	39% (7)
	Pain VAS	4	0 p = 0.404	33% (6)	17% (3)

Statistics: Paired samples t-test method. \ddagger One patient scored GRA as moderately worse.

CONCLUSION

- MFRT combined with PRT resulted in moderate to marked improvements in symptoms in 72% of patients.
- Treatment is based on the new understanding that certain chronic pelvic pain reflects a self-feeding state of tension in the pelvic floor perpetuated by cycles of tension, anxiety and pain. Our premise is that in addition to releasing painful myofascial TrPs, the patient needs to supply the central nervous system with new information or awareness to progressively quiet the pelvic floor. The patient moves from being a passive, helpless victim to an active participant/partner in healing.