

PELVIC FLOOR AND OBTURATOR INTERNUS MYOFASCIAL PAIN IS CORRELATED WITH LOWER URINARY TRACT SYMPTOM SEVERITY

Hypothesis / aims of study

This original work was designed to explore the relationship between pelvic floor and obturator internus (OI) myofascial pain and lower urinary tract (LUTS) symptoms [1]. Lower urinary tract symptoms are common, costly, and negatively impact quality of life for many patients. The prevalence of LUTS increases with advancing age, and by 2018 there is projected to be an 18.4% increase in the number of patients affected by at least one LUTS [2,3]. Myofascial pain has been identified and studied in various regions throughout the body, and is known to affect the pelvis in both men and women. In our patient population, we have found that LUTS frequently co-exist with pelvic floor and obturator internus myofascial pain. We have observed anecdotally that a substantial number of these patients demonstrate improvement in both their myofascial pain scores on physical exam as well as their LUTS after pelvic floor physical therapy (PFPT) directed at their myofascial pain. We hypothesized that presence and severity of pelvic floor and OI myofascial pain is correlated with degree of LUTS severity as measured on the urinary distress inventory short form (UDI-6).

Study design, materials and methods

We performed a retrospective cross sectional study of all new patients presenting for new patient evaluation between 1/2014 and 4/2016. A pelvic floor and OI myofascial examination was performed on all new patients by transvaginal palpation of the bilateral OI and LA muscles; starting with the right OI, proceeding counter clockwise and finishing with the left OI. Pain was recorded on an 11-point (0-10) verbal pain rating scale. Pelvic floor and OI myofascial examination pain scores and UDI-6 scores were compared and correlation between these measures was investigated using Spearman's correlation.

Results

A total of 912 new patients were evaluated during the study period. The majority of patients endorsed any urinary symptoms (92%) and 554 had complete UDI-6 scores available for analysis. Some degree of pelvic floor and OI myofascial pain was present in 93.4% with 68.8% reporting severe pain (rated 7/10 or higher). Cumulative myofascial pain score and average scores for the levator ani (LA), OI, right, and left sites were significantly correlated with total UDI-6 score (Table). Urinary urgency, represented by question 2, *do you usually experience urine leakage associated with a feeling of urgency*, was significantly correlated with right and left OI myofascial pain. Significant correlation was also identified between pelvic floor and OI myofascial pain and UDI-6 questions addressing incomplete emptying and lower abdominal/pelvic pain (*do you usually experience difficulty emptying your bladder*, and *do you usually experience pain or discomfort in the lower abdomen*).

	Right LA	Left LA	Right OI	Left OI	LA Avg	OI Avg	Right Avg	Left Avg	Total cum score
Do you usually experience...									
frequent urination?	0.044	0.084	0.083	0.081	0.027	0.035	0.038	0.023	0.031
urine leakage associated with a feeling of urgency?	0.038	0.109*	0.114*	0.098*	0.080	0.082	0.075	0.087	0.085
urine leakage related to coughing, sneezing, or laughing?	-0.005	0.022	0.042	-0.019	0.036	0.033	0.043	0.024	0.035
small amounts of urine leakage?	-0.073	-0.028	0.003	0.006	-0.007	0.008	-0.020	0.016	-0.002
difficulty emptying your bladder?	0.079	0.139**	0.145**	0.105*	0.121**	0.115**	0.120**	0.123**	0.126**
pain or discomfort in the lower abdomen or genital region?	0.203***	0.206***	0.249***	0.166**	0.217**	0.196**	0.235***	0.184***	0.222***
UDI-6 total	0.034	0.106*	0.118**	0.072	0.086*	0.089*	0.088*	0.086*	0.091*

Table. Correlation between pelvic floor and OI myofascial pain and UDI-6 scores. Spearman correlation coefficients presented. Total cumulative score represents the summation of the scores for right LA, left LA, right OI, and left OI. LA, levator ani; OI, obturator internus; Avg, average; cum, cumulative; UDI, urinary distress inventory. *p<0.05; **p<0.01; ***p<0.0001

Interpretation of results

We have demonstrated a high prevalence of pelvic floor and OI myofascial pain in women presenting to our clinic with bothersome LUTS. Degree of symptom severity, as measured using the UDI-6, was significantly correlated with pelvic floor and OI myofascial examination pain scores. Interestingly, OI myofascial pain tended to have a stronger correlation with LUTS than LA muscle groups.

Concluding message

This work provides additional support of the association between pelvic floor myofascial pain on palpation and LUTS. We present a novel finding of the association between OI myofascial pain with palpation and LUTS that had a stronger correlation with LUTS

than pelvic floor myofascial pain. These findings should be investigated further for their potential to inform possible new treatment modalities for LUTS such as myofascial pain-directed therapy.

References

1. Abrams P, Cardozo L, Fall M, et al. The standardisation of terminology of lower urinary tract function: report from the standardisation sub-committee of the International Continence Society. *Neurol Urodyn*. 2002. 21:167-178.
2. Sexton CC, Coyne KS, Koop ZS, et al. The overlap of storage, voiding and postmicturition symptoms and implications for treatment seeking in the USA, UK, and Sweden: EpiLUTS. *BJU Int*. 2009. 103:12-23.
3. Irwin DE, Milsom I, Hunskaar S, et al. Population-based survey of urinary incontinence, overactive bladder, and other lower urinary tract symptoms in five countries: results of the EPIC study. *Eur Urol*. 2006. 50:1306-1315.

Disclosures

Funding: National Institutes of Health Reproductive Epidemiology Training Grant, T32HD055172-08 **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Washington University in St Louis Institutional Review Board **Helsinki:** Yes **Informed Consent:** No