

IMPROVED URETHRAL HYPERMOBILITY AFTER SHORT-TERM PELVIC FLOOR MUSCLE TRAINING IN TREATING FEMALE STRESS URINARY INCONTINENCE

Aims of Study

Pelvic floor muscle training has been proved as an effective method for treating female stress urinary incontinence (SUI) by increasing the contractile strength of the levator ani muscles. The continent mechanism has been demonstrated by increasing in urethral closure pressure via pelvic floor contraction. Baseline clinical and urodynamic parameters are poor predictors of response to therapy.¹ However, the alteration of urethral hypermobility, another mechanism of stress urinary incontinence, has not fully investigated. This study attempts to compare the change of urethral hypermobility using the good indicator Q-tip test after pelvic floor muscle training in treating patients with SUI

Methods

Forty-two women with stress urinary incontinence were enrolled into this study. Patients with active urinary tract infection, severe pelvic organ prolapse, neurological diseases or diabetic mellitus were excluded. Mean patient age and mean parity were 51.8 ± 12.5 and 3.0 ± 1.5 respectively. Pre- and post-training evaluation included 30 min pad test, uroflowmetry, residual urine, muscle power and Q-tip test. Urethral hypermobility was defined as a straining angle greater than or equal to 30 degrees. In clinic, all patients received an electromyography-assisted biofeedback device for pelvic floor muscle training once a week for one month. At home, patients were advised to practice for 20 minutes per day.

Results

Thirty-four (81%) completed this study. Table 1 shows the short-term treatment results. The deflection angle decreased from 45.8 ± 23.0 to 25.0 ± 15.4 . Before training, 29 (85%) patients had urethral hypermobility. After training, 12 (35%) had urethral hypermobility. Patients with successful treatment had more alteration of Q-tip (pre-training Q-tip minus post-training Q-tip) than those with unsuccessful treatment (25 degree VS. 15 degree, $p < 0.05$).

Table1. Treatment results after pelvic floor muscle training

	Pre-training	Post-training	
Pad test (g)	20.7 ± 21.7 (0.4 -- 70)	11.8 ± 10 (0.3 -- 40)	$p < 0.05$
Q-tip test (angle)	45.8 ± 23.0 (10 -- 90)	25.0 ± 15.4 (5 -- 45)	$p < 0.05$
Voided volume (ml)	402 ± 168 (85 -- 693)	361 ± 81 (189 -- 579)	$p = 0.20$
Qmax (ml/sec)	31.7 ± 13.8 (8.5-- 65.2)	30.3 ± 6.8 (23.7--38.6)	$p = 0.46$
Residual urine (ml)	28.9 ± 14.5 (7.0-- 58.9)	24.8 ± 11.5 (10.0-- 29.4)	$p = 0.29$
Muscle power (μV)	11.7 ± 7.2 (0 -- 29.5)	17.6 ± 8.8 (6 -- 45)	$p < 0.05$

Conclusions

Improved urethral hypermobility is one important mechanism in pelvic floor muscle training for treating female stress urinary incontinence.

Reference

- 1.Neurourol & Urodyna, 2002, 21: 486-490.