

TRANSPERINEAL ULTRASOUND MEASUREMENTS OF THE BLADDER NECK AND URETHRA IN PREMENOPAUSAL URINARY INCONTINENT AND CONTINENT WOMEN

Hypothesis / aims of study

To confirm clinical findings of bladder neck to symphysis pubis distance and urethral length differences in incontinent versus continent subjects.

Also to compare pre and post treatment measures in incontinent subjects using manual techniques for treatment.

Study design, materials and methods

Mixed method design -within group and between group measures

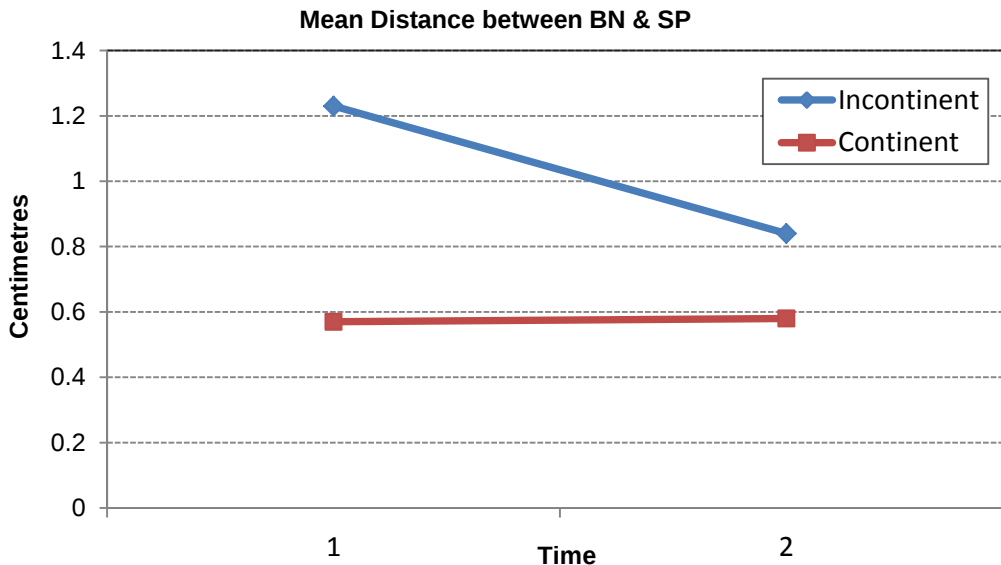
8 incontinent subjects met inclusion criteria and 10 continent subjects were used for comparison

Quantitative analysis using SPSS 16.0 program with 2X2 mixed ANOVA

RTUS (real time ultrasound) was the main measuring tool and results were compared to standardized bladder diaries, pad test, and questionnaires.

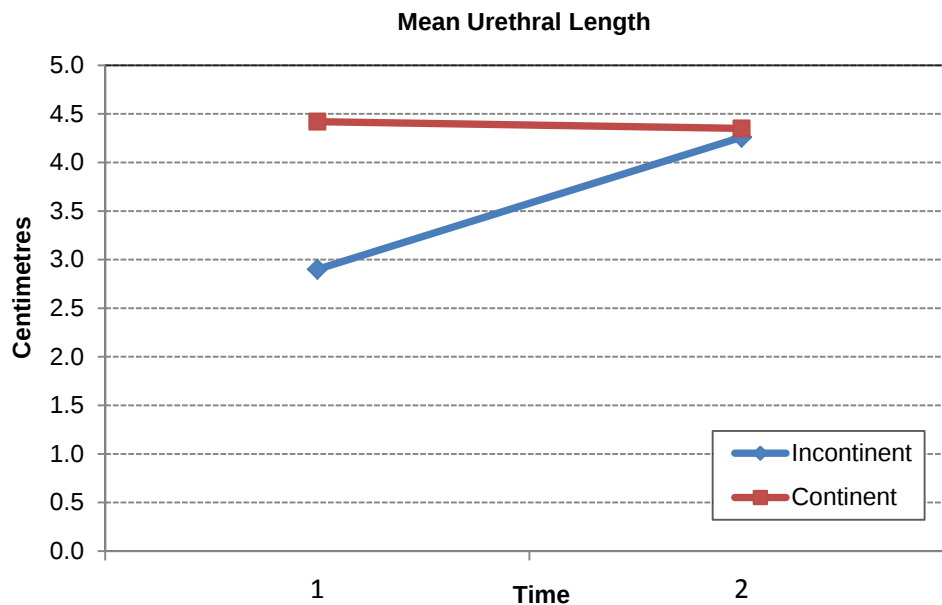
Results

Using a Spearman-Brown correlation analysis, intratester reliability was .996 for bladder neck to symphysis pubis distance and .984 for urethral length using RTUS



Bladder neck to symphysis pubis pre-treatment distance in the incontinent group was double the distance of the continent group and $p < .001$

Post- treatment the incontinent distance was significantly smaller, $p < .01$ but not as small as the continent subjects



Pre-treatment, the mean urethral length in the incontinent subjects was 2.90 cm and in the continent participants the mean length was 4.42 cm and $p < .001$

Post-treatment, the mean urethral length in the incontinent subjects changed to 4.26 cm and was statistically similar to that of the continent group

All incontinent subjects experienced continence at the conclusion of the study

Interpretation of results

A shortened urethral in incontinent women affects the pressure gradient between the urethra and bladder, therefore influencing bladder continence (2) (3). Bladder neck to symphysis pubis distance has been proven to correlate significantly with pelvic floor muscle function (1). Bladder neck to symphysis pubis distance and urethral length can both be normalized with manual techniques

Concluding message

RTUS is an excellent tool for objective outcome measures in research for bladder incontinence and is readily available to the physiotherapy clinician.

References

1. Thompson et al, 2005. International Urogynecology Journal 16(4):285-292
2. Mechia et al, 2007. Internatinal Urogynecology Journal 18: 419-422
3. Minaglia et al, 2009. Reproductive Medicine 54(1):15-19

Disclosures

Funding: none **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** College D'Etudes Osteopathiques De Montreal, Vancouver BC, Canada **Helsinki:** Yes **Informed Consent:** Yes