

TVT VERSUS BLADDER NECK SLING IN THE TREATMENT OF LOW PRESSURE URETHRA

Hypothesis / aims of study

To compare bladder neck and retropubic midurethral sling procedures in the treatment of urodynamic stress urinary incontinence and low-pressure urethra.

Study design, materials and methods

Retropubic midurethral sling procedures have proven efficacy over transobturator sling procedures in the treatment of low-pressure urethra. Bladder neck slings have been considered the gold standard in the treatment of patients with low-pressure urethra. However, there is limited information comparing retropubic midurethral slings to bladder neck slings in the treatment of patients with low-pressure urethra. The aim of this study was to compare the outcomes of bladder neck versus retropubic midurethral sling procedures in the treatment of urodynamic stress urinary incontinence in women with low pressure urethra as defined by maximum urethral closure pressure of ≤ 20 cm H₂O. Subjects with urethral closure pressures ≤ 20 cm H₂O were recruited to undergo either a retropubic or bladder neck sling from 2003 to 2008. After institutional review board approval, 52 subjects were recruited, consented, and randomized. Surgical failure was defined by leakage of urine with cough on urodynamic testing performed at ≥ 4 months postoperatively; positive standing cough stress test at cystometric volume of 250cc; 20 minute pad test ≥ 1 gram; an affirmative response to "Do you experience urine leakage related to coughing, sneezing or laughing?" on the Pelvic Floor Distress Inventory or similar affirmative response on a Likert scale. Statistical methods included Wilcoxon rank sum test, two sample t test, signed rank test, Chi-square test, Fisher's exact test, Cochran-Mantel-Haenszel test, and McNemar's test. Statistical significance reached when $p < .05$.

Results

41/52 (79%), 20 and 21 patients underwent bladder neck and retropubic midurethral slings, respectively and had 20 and 15 month follow-up data available for comparison. Concomitant prolapse repair was performed as indicated. Preoperative comparisons revealed no difference in age (66.3 ± 11.37 vs. 65.5 ± 18.3), BMI (27.3 ± 4.8 vs. 29.3 ± 5.9), or past history of stress incontinence procedures. Urodynamic testing at ≥ 4 months in bladder neck 18/20 (90%) and retropubic sling procedures 16/21 (76%) revealed no difference between bladder neck and retropubic sling with respect to cure of USUI 83.3% vs. 100%, $p=0.11$, respectively. At 52 weeks 16/20 (80%) bladder neck and 16/21 (76%) retropubic sling subjects demonstrated negative stress urinary incontinence (SUI) as measured on Likert scales 81.2% vs. 87.5%, $p=0.66$, respectively. Detrusor overactivity, other urodynamic parameters, post-void residuals, and prolapse stage were similar between groups postoperatively.

Interpretation of results

Bladder neck and retropubic midurethral slings have similar efficacy in the treatment of women with stress urinary incontinence and low pressure urethra.

Concluding message

Retropubic polypropylene midurethral slings, because of their technical ease and high success rates, offer favorable outcomes for most patients, including those presenting with low urethral closure pressures.

Specify source of funding or grant	None
Is this a clinical trial?	Yes
Is this study registered in a public clinical trials registry?	No
Is this a Randomised Controlled Trial (RCT)?	Yes
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	NorthShore University HealthSystem
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes