

PREDICTING PERSISTENT DETRUSOR OVERACTIVITY FOLLOWING SLING PROCEDURES

Hypothesis / aims of study

Determine predictors of persistent postoperative detrusor overactivity (DO) and urge urinary incontinence (UUI) after sling procedures for mixed urinary incontinence (MI).

Study design, materials and methods

From January 2000 to July 2007 a total of 728 slings were performed on women with complaints of stress or mixed urinary incontinence. Subjects underwent transvaginal midurethral slings (Tension Free Vaginal Tape [TVT] [Ethicon, Inc., Somerville, NJ] or SPARC, [American Medical Systems, Minnetonka, MN] or trans obturator tapes (TOT) Monarc, [American Medical Systems] or Obtryx [Boston Scientific, Natick, MA] or transvaginal bladder neck slings anchored to Cooper's ligament Capiro CL slings, [Capiro CL, Boston Scientific, Natick, MA]. Women with persistent DO postoperatively were compared to those whose DO had resolved postoperatively on urodynamic testing. Multivariable logistic regression models were used to evaluate the possible confounding effects among predictors on the outcome of persistent postoperative detrusor overactivity. All variables that were individually statistically significantly related to persistent DO ($p < 0.05$) were entered into the multivariable model and non-significant variables were removed one at a time. Subjects with persistent versus resolved UUI were similarly compared. SAS version 9.1 (SAS Institute, Inc., Cary, NC) was used for all analyses.

Results

305 of 432 (70.6%) women who had preoperative DO completed postoperative urodynamic testing. Age, parity, BMI, prior surgery, concurrent hysterectomy, and performance of anterior/posterior repair did not differ in women with persistent postoperative DO versus those whose DO resolved. The median age was 65 years (range: 32-91). Median (range) of follow-up was 3(1-17) months. Stress incontinence cure rate in this subset of women was 88.7% (228/257), with 29(11.3 %) failures. 31.5% of women had post operative resolution of DO. Transobturator slings had the lowest rate of persistent DO (53%), followed by retropubic slings ([SPARC=66%; TVT=64%]) and lastly bladder neck slings (86%). Significant predictors for persistent DO included age (OR=1.38, $p = .001$), prior hysterectomy (OR=1.95, $p = .012$), absence of paravaginal repair (OR=0.46, $p = .015$), nocturia (OR=1.91, $p = .013$), maximum cystometric capacity (MCC) (OR=0.79, $p < .001$), DO volume (OR=0.83, $p = .006$), urethral closure pressure (OR=0.83, $p < .001$), and maximum flow rates (OR=0.77, $p = .014$). Persistent UUI was predicted by sling procedure ($p < 0.001$). See Table1-3.

Interpretation of results

When treating women with mixed incontinence, age, nocturia, MCC, and choice of sling procedure impact persistence of DO and UUI.

Concluding message

There is a need for ongoing prospective research in this area to determine the role of preoperative testing for urinary incontinence. Patients should be clearly informed of the possibility of DO persistence and its sequelae according to sling type.

<i>Specify source of funding or grant</i>	n/a
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Evanston Northwestern Healthcare Institutional Review Board
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	No