

PRE AND POST-OPERATIVE PREDICTORS OF SATISFACTION FOLLOWING SURGICAL TREATMENT OF STRESS URINARY INCONTINENCE

Hypothesis/ aims of study

Our objective was to assess which pre and post-operative variable(s) were correlated with satisfaction following surgical repair of urinary incontinence

Study design, materials and methods

We performed a historical cohort study of women who underwent midurethral sling (MUS) or an autologous rectus fascia sling (ARFS) procedure between January 2000 and October 2005. Medical records were reviewed for patient characteristics, history, physical examination, urodynamic test results and operative reports. Outcomes were assessed from responses to mailed validated questionnaires (Incontinence Severity Index (ISI), Urogenital Distress Inventory-6 (UDI-6), and the Patient Global Impression of Improvement (PGII), as well as review of the electronic medical record. Satisfaction was defined as a response of "completely satisfied" in a 5-point Likert Scale ranging from "completely satisfied" to "completely dissatisfied." Incontinence during follow-up was defined as those who reported leakage of urine (eg, ISI score > 0) on the follow-up survey or had a report of a reoperation for incontinence. Lower urinary tract symptoms (frequency, urge incontinence, and difficulty emptying the bladder) were based on a response of 2 or greater (moderately or greatly) to question 1 ("frequent urination"), question 2 ("urine leakage related to a feeling of urgency") or question 5 ("difficulty emptying the bladder") of the UDI-6. Mixed urinary incontinence during follow-up was based on a response of 2 or greater (moderately or greatly) to both questions 2 ("urine leakage related to a feeling of urgency") and 3 ("urine leakage related to activity, coughing or sneezing") of the UDI-6. Associations of pre and post-operative variables with complete satisfaction were assessed by fitting logistic regression models and were summarized with odds ratios (OR) and 95% confidence intervals (CI).

Results

A total of 375 (88%) of the 428 women who had a MUS or ARFS between January 2000 and October 2005 completed a post-operative survey. Of these 375 women, 285 (76%) had an MUS (163 isolated and 122 with concomitant prolapse repairs) and 90 (24%) had ARFS (79 isolated and 11 with concomitant prolapse repairs). Sixty percent of the participants (227/375) reported complete satisfaction following surgery. Women who had an MUS were two times more likely to report satisfaction than women who had an ARFS (OR 2.0; $p = 0.01$). After adjusting for type of surgery, pre-operative diagnosis of mixed urinary incontinence (MUI) (OR = 0.6; $p = 0.03$), increasing patient age (OR = 0.8; $p = 0.02$) and body mass index (BMI) (OR = 0.8; $p = 0.1$) were associated with a decreased odds of complete satisfaction. A significant association with complete satisfaction was not observed for patients with a history of prior incontinence or prolapse surgery, or with detrusor over-activity on pre-operative urodynamic (UDS) evaluation (Table 1). After adjusting for type of surgery, patients who were incontinent during follow-up, had an ISI score ≥ 6 , or reported persistent lower urinary tract symptoms were significantly less likely to report complete satisfaction (Table 2). Furthermore, those patients with mixed urinary incontinence during follow-up were less likely to report satisfaction than women who did not have mixed urinary incontinence during follow-up (Table 2). Surprisingly, time since surgery (median follow-up 2.9 years) and concomitant prolapse repairs (even for those with stage 3 or greater apical or anterior were not significantly associated with complete satisfaction (Table 2).

Table 1. Pre-operative variables associated with patient satisfaction.

	Univariate OR (95%CI)	P value	Adjusted for type of surgery OR (95%CI)	P value
Mixed urinary incontinence	0.7 (0.4, 1.0)	0.08	0.6 (0.4, 0.96)	0.03
Age (per 10 year increment)	0.8 (0.7, 0.97)	0.02	0.8 (0.7, 0.97)	0.02
BMI (per 5 unit increment)	0.8 (0.7, 0.96)	0.02	0.8 (0.7, 0.95)	0.01
History of prior incontinence surgery	0.9 (0.5, 1.6)	0.65	1.0 (0.5, 1.9)	0.96
History of prior pelvic surgery	0.7 (0.4, 1.0)	0.05	0.7 (0.5, 1.1)	0.11
Detrusor contraction UDS	0.7 (0.4, 1.1)	0.11	0.6 (0.4, 1.0)	0.07

Table 2. Post-operative predictors of patient satisfaction.

	Univariate OR (95%CI)	P-value	Adjusted for type of surgery OR (95%CI)	P-value
Concomitant prolapse repair	1.0 (0.7, 1.6)	0.88	0.9 (0.5, 1.4)	0.53
Prolapse \geq grade 3	0.9 (0.5, 1.4)	0.56	0.7 (0.4, 1.2)	0.18
Apical or anterior prolapse \geq stage 3	0.8 (0.5, 1.4)	0.48	0.7 (0.4, 1.1)	0.14
Incontinence	0.1 (0.1, 0.2)	<0.001	0.1 (0.1, 0.2)	<0.001
ISI ≥ 6	0.1 (0.1, 0.3)	<0.001	0.1 (0.1, 0.3)	<0.001
Time since surgery (in 1 year increment)	1.0 (0.9, 1.2)	0.72	1.2 (0.98, 1.4)	0.08
UDI-6 question 1 answered mod/greatly	0.2 (0.1, 0.3)	<0.001	0.2 (0.1, 0.3)	<0.001
UDI-6 question 2 answered mod/greatly	0.1 (0.1, 0.1)	<0.001	0.1 (0.1, 0.2)	<0.001
UDI-6 question 3 answered mod/greatly	0.1 (0.0, 0.1)	<0.001	0.1 (0.0, 0.1)	<0.001
UDI-6 question 5 answered mod/greatly	0.2 (0.1, 0.4)	<0.001	0.2 (0.1, 0.4)	<0.001
UDI-6 question 1, 2, and 3 combination				
Answered none mod/greatly	Referent		Referent	
Answered one or two mod/greatly	0.2 (0.1, 0.3)	<0.001	0.2 (0.1, 0.3)	<0.001
Answered all 3 as mod/greatly	0.03 (0.01, 0.09)	<0.001	0.1 (0.0, 0.1)	<0.001

UDI-6 question 2 and 3 combination				
Answered neither mod/greatly	Referent			
Answered one mod/greatly	0.1 (0.1, 0.4)	<0.001	0.1 (0.1, 0.4)	<0.001
Answered both mod/greatly	0.01 (0.1, 0.4)	<0.001	0.01 (0.01, 0.04)	<0.001

Interpretation of results

We provide long-term follow-up on a large cohort of women who had surgical treatment of urinary incontinence with and without concomitant prolapse repairs. Patients who had a MUS procedure had 2-fold greater odds of reporting complete satisfaction post-operatively. However, concomitant prolapse repairs and history of prior incontinence or prolapse surgery were not associated with complete satisfaction. Older patients, patients with higher BMI and those with pre-operative MUI had decreased odds of reporting complete satisfaction. In addition, lower urinary tract symptoms were significantly associated with decreased odds of complete satisfaction, especially amongst patients with symptoms in multiple domains.

Although no objective testing was done, we used validated instruments and a composite definition of incontinence that has been shown to yield similar findings to that reported using composite measures including a formal stress test.¹ With a response rate of 88% the probability of non-responder bias is likely to be low.

Concluding message

Patient satisfaction is moderate following incontinence surgery and was not associated with time since original repair. Lower urinary tract symptoms, even if unrelated to stress urinary incontinence, and which could have predated the surgery, are significantly associated with decreased odds of complete satisfaction. Defining thorough expectations pre-operatively, especially amongst older patients with MUI, may improve patient satisfaction.

References

1. Trabuco EC, Klingele CJ, Weaver AL, McGree ME, Lightner DJ, Gebhart JB. Medium-term comparison of continence rates after rectus fascia or midurethral sling placement. Am J Obstet Gynecol. 2009 Mar;200(3):300.e1-6. Epub 2009 Jan 24

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<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes