Patient Reported Goal Achievement Following the Midurethral Sling Procedure for Female Stress Urinary Incontinence

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Objectives: Patient perspective is very important for evaluating surgical outcomes. We investigated patient reported goal achievement, overall satisfaction and objective outcome following the midurethral sling (MUS) procedure for female stress urinary incontinence (SUI).

Methods: The study prospectively enrolled 88 SUI patients who underwent the MUS procedure between August 2006 and December 2006. Patient examination included medical history, physical examination and an urodynamic study prior to surgery. Before surgery, patients were shown a list and asked to nominate one goal which they most wanted to achieve with surgery (i.e., the target goal). The goals were classified as: symptom-related, daily life-related, personal relationship- and emotion-related, and others. Before and after the surgery, patients completed a Bristol Female Lower Urinary Tract Symptom-Short Form questionnaire. At 1 year postoperatively, patients were assessed in terms of achievement of the target goal, overall satisfaction and cure rate.

Results: At the 1-year follow-up, overall target goals were achieved in 90.1% of patients, 82 (93.2%) patients were satisfied with the treatment, and 82 (93.2%) patients were cured. For most patients, the target goals were symptom-related (47 patients, 53.4%). The patients whose goal achievement was less than overall goal achievement were significantly less satisfied than those who fully achieved their goal, and goal achievement was also related to objective cure.

Conclusion: Achievement of patient goals was high and could be a good measure of surgical success following MUS for female SUI.

Key words goal achievement, midurethral sling, stress urinary incontinence

1. INTRODUCTION

Urinary incontinence (UI) is defined as a condition where involuntary loss of urine is a social or hygienic problem and is objectively demonstrable. A large-scale epidemiological study found that 25% of women complained of urine leakage and of these women, 50% complained of stress urinary incontinence (SUI), the most common type of UI. Although SUI can be treated by conservative therapies, surgery is the most common for female SUI patients because of the emergence of effective and less invasive methods.

The minimally invasive tension-free vaginal procedure (TVT) for treatment of female SUI was first introduced by Ulmsten in 1996, and has resulted in the development and the widespread use of a diverse range of midurethral sling (MUS) procedures through the transobturator route, and even single incision MUS.

Until now, assessments of surgical outcomes for such SUI surgery often do not take into account the opinions of patients. According to the definition of UI, treatment must not only eliminate UI objectively but also resolve the limitations on personal life or social activities. Therefore, patient opinion regarding treatment is important when evaluating surgical outcomes. Recent SUI studies have examined surgery outcomes from the patient perspective and included reports of changes in quality of life and opinions on the results of treatment.

The present study examined clinical outcomes in female SUI patients who underwent MUS surgery. In addition to objective measures by a cough test, we assessed outcomes in terms of whether they met the desired goals of the patients.

2. METHODS

This prospective study involved 88 SUI patients who underwent a transobturator outside-in MUS sling procedure using Continance (Pharmicare, Seoul, Korea) between August 2006 and December 2006, and who were followed up for at least 1 year.

A medical history was taken, and a physical examination and urodynamic studies were performed prior to surgery. Urodynamic evaluation consisted of
uroflowmetry, both filling and voiding cystometry, Val-
salva leak point pressure (VLPP), and maximal urethral
closing pressure (MUCP). In addition, patients completed
a Bristol Female Lower Urinary Tract Symptom-Short
Form (BFLUTS-SF)\(^6\) questionnaire and a questionnaire
on Korean-type urinary incontinence before, and again,
after surgery.\(^7\) Also, from a list of 22 UI issues, patients
were asked to identify a single problem that they most
hoped surgery would resolve (i.e., a target goal). The
22 items were grouped into four categories: symptom-
related, daily life-related, personal relationship- and
emotion-related, and others (Appendix 1).

At 1 year postoperatively surgical outcome was assessed.
Surgical cure was defined as “urinary incontinence was
completely resolved as determined by a cough test” and
improvement as “significant reduction of urine leakage
and no need for pads or specific treatment despite
occasional incidences of urinary incontinence”\(^8\). All other
outcomes were regarded as failures. The level of satis-
faction with surgery was categorized as “very satisfied”,
“satisfied”, “so-so”, and “dissatisfied”, where “very sat-
isfied” and “satisfied” were both considered satisfactory
outcomes. Along with the objective success rate of the
surgery, the re-evaluation of the BFLUTS-SF question-
naire and UI questionnaire, and level of accomplishment
on the target symptom that patients most desired to be
reached prior to the surgery, were indicated in terms of
percentage value (%).

SPSS statistics program for windows (version 12.0, SPSS
Inc., Chicago, IL) was used for data management and
statistical analysis. Comparisons of BFLUTS-SF question-
naire and UI questionnaire, and level of accomplishment
on the target symptom that patients most desired to be
reached prior to the surgery were analyzed using Student’s \(t\)-test. And associations of goal achievement with satisfaction and treatment outcome
were investigated with Fisher’s exact test. A \(P\) value of
<0.05 was considered to be statistically significant.

3. RESULTS

The average age of the 88 subjects was 55.1 years
(range: 33–72 years). According to Stamey grade, 20
patients (22.7%) were Grade 1, 62 (70.5%) were Grade
2, and 6 (6.8%) were Grade 3. Four (4.5%) patients had
undergone previous surgery for UI. The average dura-
tion of post-surgery follow up was 14.2 months (range:
12–18 months) (Table 1).

The target goal of surgery for most patients was, “I don’t
wish that my pants while laughing, coughing or sneezing” (37 patients, 42.1%), followed by, “I’d like to
climb a mountain (exercise) comfortably”, and “I’d like
to feel comfortable without worrying about the inconti-
ence of urine” (Table 2). Most target goals belonged
to the symptom-related category (47 patients, 53.4%),
as opposed to the daily life or personal relationship and
emotion categories.

Following surgery, target goals were reached in 90.1%
of patients. Specifically, 88.2% of symptom-related goals
were achieved, 90.4% of daily life-related goals were
attained, and 96.4% of personal relationship- and
emotion-related goals were completed. In two failed cases,
their target goal was, “I’d like to climb a mountain (exercise) comfortably”, and goal achievement was 50
and 70%.

With regards to the level of satisfaction surgery, 76
patients (86.4%) were highly satisfied, 6 (6.8%) were satis-
fied, 4 (4.5%) felt so-so, and 2 (2.3%) were dissatisfied,
resulting in an overall satisfaction rate of 93.2%.

At a year postoperatively, SUI was cured in 82 patients
(93.2%), improved in 4 (4.5%), and had not improved in
2 (2.3%). Urgency and urgency incontinence were fully
resolved in 30 (71.4%) and 31 (66.0%) patients, respec-
tively, whereas de novo urgency and urgency inconti-
nece was newly manifested in 5 (5.7%) and 4 (4.5%) patients, respectively.

In the association of surgical outcome with satisfac-
tion and goal achievement, objective cure of SUI was
not related to satisfaction; however, was related to goal
achievement (\(P = 0.03\)) (Table 3a). But the patients
whose goal achievement was less than overall goal
achievement were significantly less satisfied than those
who fully achieved their goal—and goal achievement
was related to objective cure (Table 3b).

The BFLUTS-SF questionnaire survey conducted 1 year
postoperatively showed that surgery resulted in a signif-
icanct improvement in incontinence, filling, sexual func-
tion, and quality of life (\(P < 0.05\)), but not voiding
(Table 4).

Evaluation of quality of life 1 year postoperatively using
a UI questionnaire survey (in Korean) showed significant
improvement in total score, psychosocial impact, avoid-
ance and limiting behavior, and social embarrassment
(Table 5).

No patient experienced postoperative infection or tape
rejection reactions.

4. DISCUSSION

The present study examined patient-reported target
goal, goal achievement and association among objective
cure, patient satisfaction and target goal achievement
in women undergoing transobturator outside-in MUS
surgery for SUI.

**TABLE 1.** Characteristics of 88 patients

<table>
<thead>
<tr>
<th>No. of patients</th>
<th>88</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age, year (range)</td>
<td>55.1 (33–72)</td>
</tr>
<tr>
<td>Mean parity (range)</td>
<td>2.7 (0–5)</td>
</tr>
<tr>
<td>No. of previous SUI surgery (%)</td>
<td>4 (4.5%)</td>
</tr>
<tr>
<td>Mean body mass index, kg/m² (range)</td>
<td>24.0 (17.6–31.3)</td>
</tr>
<tr>
<td>No. associated urgency incontinence (%)</td>
<td>47 (53.4%)</td>
</tr>
<tr>
<td>No. urgency (%)</td>
<td>42 (47.7%)</td>
</tr>
<tr>
<td>No. SUI grade (%):</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>20 (22.7%)</td>
</tr>
<tr>
<td>2</td>
<td>62 (70.5%)</td>
</tr>
<tr>
<td>3</td>
<td>6 (6.8%)</td>
</tr>
<tr>
<td>Mean urodynamic parameter:</td>
<td></td>
</tr>
<tr>
<td>Peak urinary flow, mL/s (range)</td>
<td>27.1 (6.6–53)</td>
</tr>
<tr>
<td>Voided volume, mL (range)</td>
<td>250.5 (101.9–523)</td>
</tr>
<tr>
<td>Post-voided residual, mL (range)</td>
<td>17.5 (0–132)</td>
</tr>
<tr>
<td>Maximum cystometric capacity, mL (range)</td>
<td>431.4 (220–630)</td>
</tr>
<tr>
<td>VLPP, cm H₂O (range)</td>
<td>94.3 (18–232)</td>
</tr>
<tr>
<td>MUCP, cm H₂O (range)</td>
<td>38.4 (8–75)</td>
</tr>
<tr>
<td>No. detrusor overactivity (%)</td>
<td>21 (23.9%)</td>
</tr>
</tbody>
</table>

MUCP, maximal urethral closing pressure; SUI, stress urinary incontinence; VLPP, valsalva leak point pressure.

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TABLE 2. Patients’ target goal achievement

<table>
<thead>
<tr>
<th>Group</th>
<th>Target goal</th>
<th>n (%)</th>
<th>Goal achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom-related goal</td>
<td>I wish that I get rid of my habit going to a rest room so frequently.</td>
<td>4 (4.6%)</td>
<td>92.5%</td>
</tr>
<tr>
<td></td>
<td>I wish that I don’t wet my pants on my way to a rest room.</td>
<td>5 (5.7%)</td>
<td>91%</td>
</tr>
<tr>
<td></td>
<td>I wish that the pain on my bladder (urethra) disappears.</td>
<td>1 (1.1%)</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>I wish that I don’t wet my pants while laughing, coughing or sneezing.</td>
<td>37 (42.1%)</td>
<td>87.8%</td>
</tr>
<tr>
<td>Daily life-related goal</td>
<td>I’d like to take a trip without worrying about going to a rest room.</td>
<td>6 (6.8%)</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>I’d like to jump rope comfortably.</td>
<td>1 (1.1%)</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>I’d like to climb a mountain (exercise) comfortably.</td>
<td>20 (22.7%)</td>
<td>90.5%</td>
</tr>
<tr>
<td></td>
<td>I’d like to wear no pad.</td>
<td>2 (2.3%)</td>
<td>95%</td>
</tr>
<tr>
<td>Personal relations- and</td>
<td>I’d like to feel comfortable without worrying about the incontinence of urine.</td>
<td>11 (12.5%)</td>
<td>96%</td>
</tr>
<tr>
<td>emotion-related goal</td>
<td>I wish I’m not concerned about locating a rest room when I’m a stranger to the area.</td>
<td>1 (1.1%)</td>
<td>100%</td>
</tr>
</tbody>
</table>

TABLE 3. The relation among goal achievement, satisfaction and surgical outcomes when (a) stress urinary incontinence was not related to satisfaction but was related to goal achievement, and when (b) goal achievement was related to objective cure

(a) Satisfaction | Goal achievement
<table>
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<tbody>
<tr>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>95.1% (78/82)</td>
<td>90.5%</td>
</tr>
<tr>
<td>66.7% (4/6)</td>
<td>60.8%</td>
</tr>
<tr>
<td>P-value</td>
<td>0.52*</td>
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</table>

(b) Satisfaction | Cure
<table>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>100% (70/70)</td>
<td>94.3% (66/70)</td>
</tr>
<tr>
<td>66.7% (12/18)</td>
<td>66.7% (12/18)</td>
</tr>
<tr>
<td>P-value</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>

We found that symptom-related target goals were common (53.4%) and patient target goals for surgery were met in 90.1% of cases. In 82 “cured” patients, their achievement levels were 90.5%. On the other hand, in four “improved” patients and two “failed” patients, their achievement levels were 78.8 and 60%, respectively, and were considered relatively low. The reason was that patients had very high expectations for their surgical outcomes, especially SUI-related symptoms and lifestyle restrictions caused by such symptoms. Mallett et al. examined expectations of female SUI patients prior to undergoing rectus fascial sling and Burch colposuspension surgical procedure. The cited authors found that 98% of patients anticipated complete resolution of UI symptoms following surgery. Such a high level of expectation would result in poor goal achievement if symptoms do not improve. The main goal for some patients was that surgery would resolve symptoms such as frequency, urgency and urinary incontinence. Davis et al. reported that overactive bladder symptoms were a major marker of dissatisfaction in some patients following surgery. Such patients may feel that the surgery outcomes were unsatisfactory if...
such symptoms were not resolved, even if UI was eliminated. This indicates the needs for careful explanation of possible outcomes to patients prior to surgery.

In addition to these findings, other assessments showed a 93.2% objective success rate and a 93.2% level of satisfaction, consistent with findings of other studies.10,11 Elkadry et al.12 examined surgery goals and satisfaction levels in female patients who underwent surgery for pelvic organ prolapse and UI. These authors found that the objective cure of stress incontinence and prolapse did not predict satisfaction or goal achievement and achievement of patient-selected goals was the primary reason for undergoing surgery. Therefore, the level of patient satisfaction following surgery may be determined by the level of accomplishment of goals set by patients prior to surgery. In our findings, goal achievement for SUI surgery was also significantly related to patient satisfaction and objective cure. Therefore, achievement of the preoperative goal may be important to patients with regards to the measurement of subjective surgical outcome following MUS for female SUI.

This research had limitations in that the follow-up duration was relatively short, and the questionnaire was not verified. Therefore, continued follow up and questionnaire verification are desirable.

After the MUS procedure, the achievement of the goals that the patients wanted was high and comparable to objective surgical outcome and overall satisfaction. Self-reported achievement of preoperative goal could be a good measure of success following MUS for female SUI.

Disclosure

None.

REFERENCES


APPENDIX 1. QUESTIONNAIRE USED TO IDENTIFY GOALS OF SURGERY

Please select one target among the following ones that you like to achieve.

A. In relation to symptoms:

- I wish that I get rid of my habit of going to a rest room so frequently.
- I wish that I don’t go to a rest room in haste.
- I wish that I don’t wet my pants on my way to a rest room.
- I wish that the pain on my bladder (urethra) disappears.
- I wish that I don’t wet my pants while laughing, coughing or sneezing.
- I wish that I don’t wet my pants while being concerned about urinary incontinence.
- I wish that I get rid of my habit of going to a rest room.
- I wish that I get rid of my habit of going to a rest room so frequently.
- I wish that I get rid of my habit of going to a rest room.
- I wish that I get rid of my habit of going to a rest room.

B. In relation to daily life:

- I wish that I don’t wet my pants while laughing, coughing or sneezing.
- I wish that I don’t wet my pants while laughing, coughing or sneezing.
- I wish that I don’t wet my pants while laughing, coughing or sneezing.
- I wish that I don’t wet my pants while laughing, coughing or sneezing.
- I wish that I don’t wet my pants while laughing, coughing or sneezing.
- I wish that I don’t wet my pants while laughing, coughing or sneezing.
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- I wish that I don’t wet my pants while laughing, coughing or sneezing.
- I wish that I don’t wet my pants while laughing, coughing or sneezing.
- I wish that I don’t wet my pants while laughing, coughing or sneezing.
- I wish that I don’t wet my pants while laughing, coughing or sneezing.

C. In relation to personal relations and feeling:

- I wish that I have my sexual function improved.
- I wish that I have sex with my husband without being concerned about urinary incontinence.
- I wish that I have sex with my husband without being concerned about urinary incontinence.
- I wish that I have sex with my husband without being concerned about urinary incontinence.
- I wish that I don’t need to worry about the smell of urine.
- I wish that I don’t need to worry about the smell of urine.
- I wish that I don’t need to worry about the smell of urine.
- I wish that I don’t need to worry about the smell of urine.

D. Others: If no description applies to you, please write one down.