

Effect of Simultaneous Cystocele Repair on Transobturator Tape Outcome in Female Patients with Pure Stress Urinary Incontinence

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ABSTRACT:

BACKGROUND:

Today; mid urethral slings are the first option for surgical treatment of stress urinary incontinence (SUI) due to high success rates and minimally invasive characteristics of the procedure. Concomitant prolapse surgery does not appear to have an effect on treatment outcomes according to previous studies predominantly evaluating tension-free vaginal tape (TVT) procedures.

OBJECTIVE:

To evaluate the efficacy of cystocele repair performed simultaneously with trans obturator tape (TOT) on the outcome of operation in patients with stress urinary incontinence (SUI) and pelvis organ prolapse (POP).

PATIENTS AND METHODS:

The data of patients who had SUI and cystocele were evaluated prospectively and Patients who underwent only TOT were classified as group 1 and the patients who underwent TOT simultaneously with cystocele repair (grades 1&2) were classified as group 2. The age, number of normal deliveries, number of pad used per day, cystocele grade, and duration of operation, pre- op International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) and postoperative complications were evaluated.

RESULTS:

It was observed that there was no significant difference between groups 1 and group 2 in terms of preoperative International Consultation on Incontinence Questionnaire-Short Form scores (16.08 ± 0.32 and 16.71 ± 0.31 , respectively). It was observed that the postoperative ICIQ-SF scores decreased markedly in both groups (2.31 ± 0.69 and 4.42 ± 1.21 , respectively, $p=0.003$).

CONCLUSION:

Cystocele repair performed simultaneously with TOT in patients with mild to moderate (grade 1&grade2) cystocele did not provide additional improvement on TOT alone in regard to treatment of SUI.

KEYWORDS: trans obturator tape , pelvic organ prolapse , cystocele, stress urinary incontinence.

INTRODUCTION:

Pelvic organ prolapse (POP) and stress urinary incontinence (SUI) are worldwide problems that affect the quality of life of millions of women.

The prevalence of SUI ranged from 5% to 72% among women. Incontinence during pregnancy has a prevalence of 31% to 60%, but it resolves in most cases ⁽¹⁾.

A cystocele occurs when the wall between a woman's bladder and her vagina weakens and

allows the bladder to droop into the vagina. This condition may cause discomfort and problems with emptying the bladder ⁽²⁾.

Indications for cystocele repair include pelvic pressure due to anterior vaginal wall prolapse of midline defect into or out of vagina, difficulty in voiding urine due to urethral kinking (obstructed voiding, intermittent stream), frequent UTIs and irritative voiding symptoms due to bladder being outside of vagina or ulceration of vaginal mucosa due to anterior wall prolapse and exposure⁽³⁾. Trans-obturator passage of synthetic slings (TOT) using specially designed instruments has been introduced.⁽⁴⁾ The goal of the minimally invasive surgical procedure should be to provide acceptable

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long-term efficacy comparable to that of more standard methods as well as a relatively low incidence of long-term complications, again compared with these “gold standard” procedures⁽⁵⁾.

PATIENTS AND METHODS:

A- Patient selection and evaluation: Forty three female patients with pure stress urinary incontinence and cystocele (grades 1 & 2) presenting to urology department of Ghazi Al-Hariri surgical specialties hospital from April 2015 to Oct. 2016 were enrolled in this study and evaluated prospectively. The patient's evaluation included the age, history of vaginal delivery, previous gynecological and vaginal operations, accompanying comorbidities, presence of cystocele and its grade, type of incontinence, pad usage, postoperative complications and preoperative International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) were analyzed prospectively.

B- Inclusion and exclusion criteria:

Inclusion	criteria
Exclusion criteria	
Low grade cystocele (grade 1&2)	
High grade cystocele (grade 3)	
Pure stress incontinence	
other causes of incontinence	
No previous operations for SUI.	
Previous operations for SUI.	

All patients were questioned in terms of long-term complications and final continence status using ICIQ-SF. The patients with accompanying cystocele who underwent TOT alone were classified as group 1 including 20 patients (13 patients with cystocele grade 1 and 7 patients with cystocele grade 2) and the patients who underwent cystocele repair simultaneously with TOT were classified as group 2 including 23 patients (6 patients with cystocele grade 1 and 17 patients with cystocele grade 2). The preoperative and postoperative ICIQ-SF scores of all patients were compared. The patients in group 1 and group 2 were compared in terms of postoperative ICIQ-SF and Δ ICIQ-SF (Preoperative ICIQ-SF-Postoperative ICIQ-SF) values.

C-Selection of treatment modality: Treatment options (TOT alone or with cystocele repair) were discussed with the patients, TOT was mandatory for all the patients but the decision of cystocele repair was made after discussion with the patient and the urologist (according to the degree of effect on sexual life, pelvic pain, presence of repeated

urinary tract infection (UTI)). All patient underwent incontinence surgery using trans obturator sling system-halo and Cystocele repair was done by anterior vaginal repair (anterior colporrhaphy). Postoperatively Patients were covered by IV antibiotic (3rd generation cephalosporin) and metronidazole. Vaginal pack was removed on the night of the operation, patients in group 1 discharged after 24 hours (day 1 postoperatively), while patients in group 2 discharged after 48 hours (day 2 postoperatively), the patients were instructed to avoid heavy exercise and intercourse for 45 days postoperatively.

In postoperative evaluation the patient assessed on the bases of a clinical examination and questioning before their hospital discharge, two weeks, one month and six months following surgery. Patient assessment was made objectively as no leakage during the cough test with full bladder and subjectively by asking them to establish satisfaction level and describe any persisting or new urinary symptoms. Patient satisfaction expressed how well the functional result achieved matched their expectation of the surgical procedure. Selections of patients for type of anesthesia (spinal, epidural and general anesthesia) were done randomly.

RESULTS:

All the procedures were performed by the same surgical team. A total of 43 female patients were enrolled in this study, 20 patients involved in group 1 and 23 patients involved in group 2, mean patients age was 42.3 ± 12.3 years (range 27-57 years). All patients had history of at least one normal vaginal delivery, mean parity was 4.5 ± 2.11 (range 1-8 children) mean number of pads used per day was 4.21 ± 1.81 /day (range 1-7 pads), mean operative time 37.50 ± 22 (range 15-60 minutes), 25.5% patients found to have abdominal surgery, mean follow up time of 7.5 ± 1.99 months (range 3-12 months). When group 1 and 2 were compared, the mean age (42.2 ± 11.3 vs. 40.5 ± 22.1 , $p=0.50$) and number of vaginal deliveries (3.50 ± 0.30 vs. 4.76 ± 0.25 , $p=0.143$) were similar; the mean rate of usage of daily pad was slightly higher in group 1 (3.34 ± 0.28 vs. 3.21 ± 0.26 , $p=0.047$) history of abdominal surgery (25.3% vs. 26.08%, $p=0.214$), mean operative time (22.50 ± 13 vs 50.20 ± 11 , $p=0.003$). There was no marked difference between preoperative ICIQ-SF scores, it was observed that the postoperative ICIQ-SF scores significantly decreased both in group 1 and group 2 ($p<0.001$) (table-1).

Table1: Comparison of ICIQ-SF scores in both groups.

ICIQ-SF	Group 1 TOT alone (n=20)	Group 2 TOT+ Cystocele (n=23)	P
Preoperative ICIQ-SF	16.08±0.32	16.71±0.31	0.389
Postoperative ICIQ-SF	2.31±0.69	4.42±1.21	0.003
ΔICIQ-SF	12.67 ±0.87	11.52 ±1.23	0.017

ICIQ-SF: International Consultation on Incontinence Questionnaire-Short Form, TOT: Transobturator tape.

In comparison of peri and postoperative measures of both groups it was found that there was marked reduction in operative time (22.50+13vs. 50.20+11,p=0.003) and postoperative hospitalization(1.3+2.11 vs. 2.1+1.5, p=0.012) in group 1 patients, while there was no significant difference in postoperative complications during follow up time (table 2).

Table 2: Comparison of the peri and postoperative measures (between group 1 and 2).

Parameters	Group 1 (NO.20)	Group 2 (NO.23)	Mean	P value
Mean Operative time(minutes)	22.50+13	50.20+11	37.50+22	0.003
Postoperative hospitalization (Days)	1.3+2.11	2.1+1.5	1.8+3.2	0.012
Postoperative complications	2 (10%)	3(13.04%)	11.52%	0.357
Mean follow up time (months)	7.5+2.24	7.3+4.35	7.5+1.99	0.61

Rate of postoperative complications was 11.52% (5 patients) ,dyspareunia in 2 patients(4.65%) one from each group treated by lubricants and analgesia, there were 2 patients with bladder over activity (4.65%) from group 2 (above the age of 50 years) who were treated by anticholinergic drugs for one month, and one patient with vaginal erosion (2.32%) from group 1 due to patient noncompliance , treated by excision of the protruded part of the tape and suturing under local anesthesia , No intraoperative complications observed . After the last follow up visit 93.02% (40 patients) were found to have cough test negative& significant improvement in 42 patients was achieved. The type of anesthesia was spinal in 30 patients (16 in group 1 and 14 in group 2).

DISCUSSION:

Many of the etiologic risk factors that contribute to SUI are similar to those described for POP. In fact, more than 40% of women with SUI will have a significant anterior vaginal prolapse ⁽⁶⁾. Transobturator tape (TOT) procedure is the gold standard for current surgical management of female stress urinary incontinence. It's simple, minimally

invasive and cost effective procedure. Since the initial description of the transobturator MUS by Delorme in 2001, continence rates have been reproducibly satisfactory. Reported continence rates range from 40% to 97% on the basis of a variety of subjective (questionnaire and QOL single-item assessment) and objective (cough stress test, uroflowmetry, physical examination) measures ⁽⁷⁾. This cure rate is comparable to that in this study which was 95% in group 1(only TOT group), postoperative complications recorded in two patients, one developed dyspareunia and the other complicated with vaginal erosion. In another study published by Richter and colleagues at 2010;the cure rate of transobturator midurethral sling was 77.7% in terms of a negative stress test, pad test, and no re-treatment and with 6.4% wound adverse events and 4.3% genitourinary adverse events including bladder and urethral perforation⁽⁸⁾. Failure to recognize POP at the time of UI treatment might greatly increase the need for subsequent surgery for POP ⁽⁹⁾. In addition, it is known that presence of cystocele is an important risk factor for failure in patients who will undergo

midurethral sling operation because of SIU^(10,11). High-stage cystocele might mask "occult" SUI by creating urethral obstruction. Often, as anterior prolapse stage progresses in severity, previously incontinent women will notice an improvement in their SUI symptoms due to urethral kinking⁽¹²⁾. Presence of cystocele may affect the success of mid urethral sling operation by acting on micturation function^(10, 11). In Data from a 5% national random sample of 1999 to 2001 Medicare claims for patients undergoing UI surgery showed that urologists performed concomitant prolapse repairs at the time of sling in 29.1% of cases, whereas gynecologists performed prolapse repairs in 55.7% ($P < .0001$). In the 12 months following sling surgery, patients who underwent surgery by an urologist were more likely to undergo a repeat surgery for prolapse repair (26.0% vs. 12.2%, $P < .0001$). These findings emphasize the importance of identifying and managing symptomatic prolapse when evaluating patients with UI⁽¹³⁾.

The risks and postoperative benefits of surgery should be considered in patients who will undergo cystocele repair simultaneously with midurethral sling operation^(10,11). The results of this study was comparable to previously published reports by Ozan Bozkurt et al in 2014 in which 165 female patients were operated (only TOT in group1 and TOT with cystocele repair in group2) 94.3% success rate achieved, 7.8% complications rate and no significant difference between the two groups depending on postoperative ICIQ-SF score⁽¹⁴⁾.

In another study published by Paick JS et al in 2007, it was shown that resistant micturition defects were present after sling operation in patients with high-grade cystocele⁽¹⁰⁾. Another study published by Park HK et al in 2013, it was found that simultaneous cystocele repair had no effect on the success of surgery in the patients who had low grade cystocele compared to the patients who underwent only TVT and it was observed that In addition, it was reported that presence of low-grade cystocele had no effect on the success of sling independent of cystocele repair⁽¹¹⁾. In this study we compared peri and postoperative measures between group1 and group 2, and there was significant reduction in operative time, postoperative hospitalization and post-operative ICIQ-SF score while postoperative complications were comparable in both groups, but there was a difference in the details of complications (bladder

over activity occurs more in group 2 in patients over 50 years while not in group 1). These results are comparable to the result published by Ozan Bozkurt et al in 2014, in which postoperative complications were 7.8% and postoperative ICIQ-SF score (3.28 ± 0.78 vs. 5.41 ± 1.21 , $p = 0.004$)⁽¹⁴⁾. Considering improvement in the ICIQ-SF scores in the long-term, operative time and postoperative hospitalization, TOT surgery performed in daily practice provides a high level of satisfaction in terms of patients and can be performed safely despite accompanying comorbidities. In addition, cystocele repair performed simultaneously with TOT did not provide additional improvement in the ICIQ-SF score compared to TOT alone in the patients with mild to moderate cystocele⁽¹⁵⁾.

CONCLUSION :

Cystocele repair performed simultaneously with TOT in patients with mild to moderate (grade 1&grade2) cystocele does not provide additional improvement over TOT alone regarding SUI.

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