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COMPLICATIONS AND SUCCESS RATE IN WOMEN UNDERGOING BURCH COLPOSUSPENSION FOR URINARY STRESS INCONTINENCE

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Abstract

Our goal was to study the success rates and peri-operative and post operative complications of Burch colposuspension in women having urinary stress incontinence. The study was performed in the department of gynaecology and obstetrics, MTI Hayatabad Medical Complex, MTI Lady Reading Hospital and a private set in Peshawar. Peri and postoperative outcomes were reviewed in 54 patients who underwent Burch Colposuspension from 2012 to 2017. All operations were performed by a single experienced surgeon and patients were followed post procedure for 18-24 months. Prior to the procedure, urodynamic studies were performed on 34 patients, while others showed signs of pure stress incontinence, so they did not require urodynamic studies. Urodynamics of 28 women showed genuine stress incontinence while six showed mixed stress incontinence. 10 patients underwent additional procedures along with Burch Colposuspension, mostly posterior colporrhaphy in 6 patients. The complication rate was relatively low, with 14.8% of patients experiencing voiding difficulties and 11% experiencing Denovo detrusor instability. Burch Colposuspension is a safe surgical treatment for genuine stress incontinence.

Keywords: *Burch, Colposuspension, Open colposuspension, Retropubic bladder suspension, Urinary stress incontinence*

INTRODUCTION

Incontinence of urine is a common problem faced by women. It is reported by 20–30% of women during their lifetime. About 50% of these women have symptoms of pure stress urinary incontinence while 29% have urge and mixed stress incontinence (1). Stress incontinence occurs during increased intra-abdominal pressure while sneezing or coughing which causes urine leakage through the urethra. Some women with prolapse have simultaneous stress incontinence, but others do not due to the obstructive effect of the prolapse. After treating prolapse with a pessary or surgery, stress incontinence might develop. Such risk is found in 8% to 60% patients by some small series (2-4). Recurrent urinary stress incontinence has been studied in women who had previous continence procedures like anterior vaginal repairs, needle suspensions, retro pubic suspension procedures or slings (5-7).

Burch Colposuspension was originally introduced by Burch (8), and since then is modified by various surgeons (9). It is one of the most common surgical procedures done to treat genuine stress incontinence (GSI) in women. Success rates of 69% to 90% with Burch Colposuspension, when performed as the primary procedure, have been found by many authors and if done as a secondary procedure then 60% to 82% success rate was observed, with low complication rates (10).

The goal of our study was to determine the perioperative and postoperative complication and success rates in women after open Burch Colposuspension surgery in tertiary care hospitals and private setup.

METHODOLOGY

This is a type of cross-sectional prospective study conducted at the Department of obstetrics and gynaecology unit A in Lady reading hospital, Department of Obstetrics and Gynaecology, unit C in Hayatabad medical complex and a private setup in Peshawar city. Total number of 54 females with stress urinary incontinence who underwent Burch Colposuspension were included in this study. Urodynamic studies were performed in 34 patients and the rest of 20 patients did not undergo urodynamic studies because they showed signs of pure stress urinary incontinence. All operations were done by a Primary single experienced surgeon. Inclusion criterion was patients having stress urinary incontinence. The exclusion criterion was those having a coexistent neurological disease and those who had previously undergone any type of surgery for incontinence. Gynecological examination for presence of pelvic organ prolapse, blood tests (complete blood count and hemoglobin levels), midstream urine specimen for routine examination, post residual urine on ultrasound and cough tests (leakage of urine while coughing on standing and dorsal recumbent positions) were performed on all patients. Burch Colposuspension was performed under general anesthesia through low suprapubic incision. The levator ani muscles were elevated through the vagina by the assistant and the endopelvic fascia, with the help of 3 non-absorbent sutures on both sides, was sutured to Cooper's ligament with slight tension. Suprapubic catheter was introduced for bladder drainage postoperatively. Enoxaparin was given once daily for thrombosis prophylaxis according to patient weight. Patients were allowed mobilization on 2nd postoperative day and the supra pubic catheter was removed on 3rd postoperative day. However, if spontaneous voiding was impossible, the catheter was reinserted for a few more days. Patients were discharged on the 5th postoperative day after catheter removal. The mean hospital stay was 4 days (range 3-7). Patients were followed post-operatively at durations of 6weeks-6months and 7-24 months and their satisfaction rates were evaluated through symptom relief, QOL questionnaire, urodynamic studies, time taken for postoperative recovery and cough test. Gynaecological examination was also performed to evaluate the patients for development of posterior prolapse (enterocele).

RESULTS

We included 54 women who had Burch Colposuspension alone or with concomitant pelvic surgeries in this study. 30(56%) patients were in age range of 35-45 years while 24(44%) patients were 45 years old and above. 18(33%) patients were multi para while 36(67%) patients were grandmulti para. The BMI of 10(19%) patients was normal while 44 (81%) patients had BMI of 27 and above. The demographic characteristics of these patients are given in Table I.

Table I. Demographic data of patients (n=54)

Variables	No. of patients	Percentage
Age (Years)		
35 – 45	30	56
45 and above	24	44
Gravidity		
Multi gravida	18	33
Grand multigravida	36	67
BMI		
Normal	10	19
27 and above	44	81

Out of the total 54 women incontinent patients 34 women showed urodynamically proven urinary incontinence out of which 28 had genuine stress urinary incontinence while 6 had mixed urinary incontinence. There was significant decrease in maximum urine flow rate but increase in residual urine volume at follow-up, 18 months after surgery. No change was observed in urethral closure pressure and cystometric bladder capacity (Table II). The detailed urodynamic measurements before and 2 years after surgery are listed in Table II.

Table II. Results of the urodynamic measurements before and 18 months after surgery (n=54)

Variable	Pre-operative mean	Follow up mean	Normal range
Flow Rate (ml/s)	27	22	6-89
Residual Volume (ml^3)	21	10	0-122
Bladder Capacity (ml)	476	457	295-500
Urethral length (mm)	22	27	7-32
MUCP (cm H_2O)	35	40	6-66

n=10 (18.5%) women had concomitant surgery along with Burch Colposuspension. Out of these n=6 (11%) had posterior colporrhaphy, n=2 (3.7%) had sacral colpopexy while n=2 (3.75) had total abdominal hysterectomy.

Perioperative complications included bladder injury in n=2 (3.7%) patients which required repair and prolonged catheterization, n=2 (3.7%) patients required blood transfusion due to increased blood loss during the procedure. Hematoma was formed in n=2 (3.7%) patients which was conservatively managed. At follow-up n=4 (7.4%) patients had developed an enterocele, n=6 (11%) had developed Denovo detrusor instability, n=8 (14.8) had developed some kind of voiding difficulties. 46(85%) patients self-voided and n=6 (11%) had developed UTI which was treated through antibiotics according to urine culture and sensitivity report. Other complications were mild as given in Table III.

Table III. Early and late complication of burch colposuspension (n=54)

Complications	No. of Patients	Percentage %
Bladder Injury	2	3.7
Denovo Detrusor Instability	6	11
Voiding Difficulty	8	14.8
Enterocele	4	7.4
Self-Voiding	46	85
Hematoma	2	3.7
UTI	6	11
Blood Transfusion	2	3.7

Out of total n=54 patients, we were able to follow n=44 patients up to 6 months while n=10 patients were lost to follow up. We further lost n=4 patients out of these at 18 months duration as shown in Table IV. The n=44 patients that were followed up to 6 months were 90% satisfied with their continence, as shown on cough test as well as through history telling while this satisfaction rate dropped to 85% at 18 months follow up as shown in Table V.

Table IV. Follow up (n=54)

Time of follow up	No. of patients
6 weeks-6months	44
7-18 months	40

Table V. Satisfaction Rate

No. of Patients	Satisfaction Rate %
44	90
40	85

DISCUSSION

Burch Colposuspension is a known surgical procedure for urinary stress incontinence. Various studies have been done to assess its long-term effectiveness. Some studies show decrease in cure rate over 10 years, from 92% to 69% (12). Walters reviewed 14 studies from 1980-1990 about Burch Colposuspension and found that 84% patients were continent at 1 year after surgery, and 77% remained continent after 3 years (13). These studies are in consistence with our study as the patient satisfaction rate dropped by only 5 % in one year however the difference might be due to the short duration of our follow up compared to other studies.

In the current study, urodynamic investigations were repeated before and after surgery in two-thirds of patients. The need for performing urodynamic investigations in stress incontinence has also been studied (14, 15). Uncomplicated incontinent women are operated on by most surgeons without performing prior urodynamic investigations. 20 of our patients also did not go through urodynamic studies because they had uncomplicated pure stress incontinence. Cystometry is also done to detect detrusor instability but it is not a contraindication to surgery (16).

Our study showed relatively few complications. None of the patients showed postoperative urinary retention. One of the complications of Burch technique is coital pain due to tight vaginal fornixes as a result of fixing the paravaginal fascia to cooper's ligament however there was no such complication in our study. Rectocele or cystocele is sometimes formed after the bladder neck is elevated, as strengthening only one portion of the weak pelvic floor may increase the weakening of the endo-pelvic fascia behind or in front of that (17). But this was not reported in the present study. Urgency after Burch Colposuspension is a well-known problem (18) but was not reported in this study. Patients having mix incontinence, especially those with hyperactive bladder, should be warned about the possible need for complementary anticholinergic drugs in advance. There were few limitations to our study. We lost many patients to follow up. Women, who were unsatisfied with their surgeries, were not ready to repeat urodynamic studies post-operatively. Apart from these, very few patients with urinary stress incontinence showed willingness to Burch Colposuspension.

CONCLUSION

Burch operation is advised for genuine stress incontinence and has low recurrence rate of leakage and few late complications. Urodynamic studies are advised preoperatively, but are not necessarily required once treatment is successful.

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