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RESEARCH ARTICLE

# Burch Retropubic Urethropexy for Genuine Stress Urinary Incontinence: A Review of Eight Cases

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## ABSTRACT

**Introduction:** Urinary incontinence (UI) is more common than any other chronic disease with the prevalence of approximately 23 and 55%. Among the various forms of UI, stress incontinence (SUI) is the most common (49%), with urgency incontinence (UUI) representing 21% and mixed type (MUI) at 29%. As it affects the quality-of-life of women, the restoration of urinary continence is one of the greatest challenges.

**Aim:** To review the cases of genuine SUI treated surgically by Burch retropubic urethropexy.

**Results:** We have managed surgically eight cases of genuine SUI by Burch retropubic urethropexy. On 1-year follow-up, none of the patients had any urinary complaints. All had responded well to surgery and patient's satisfaction index was good.

**Conclusion:** Since SUI is the commonest among incontinences, it is a challenge to diagnose and treat to improve quality-of-life of patients. Burch retropubic urethropexy is the gold standard treatment for SUI, especially if other indications exist for abdominal surgery. Even in the present era of less invasive vaginal procedures, results are comparable.


**Keywords:** Burch, Retropubic space, Stress urinary incontinence.

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## INTRODUCTION

Urinary incontinence affects 23 to 55% of women.[1] The three most common types are SUI, UUI, and MUI.[2] The SUI is defined as the involuntary leakage of urine on effort or exertion, or on sneezing/coughing or, urodynamically, as the involuntary leakage of urine during increased abdominal pressure in the absence of a detrusor contraction.

Various studies have shown that the prevalence and types of UI are 49% of those affected have SUI, 21% have UUI, and 29% have MUI. However, the prevalence of the different types of incontinences varies in older women.[3]

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## CASE REPORT

We have managed eight cases of genuine SUI with Burch retropubic urethropexy. History of all patients was taken in detail in respect of previous pregnancy, mode of delivery, any difficulty during delivery, instrumental delivery, or any complication during delivery like perineal tear, any history of chronic respiratory disorder, and any history of pelvic or spinal surgeries. All patients were thoroughly examined and investigated before surgery. On per speculum examination, they had hypermobile middle urethral segment. Details of all patients are tabulated in Table 1.

## DISCUSSION AND RESULTS

### Pathophysiology

The SUI is thought to be caused by a sphincteric abnormality, either urethral hypermobility or intrinsic sphincteric deficiency. The SUI is due to varying degrees of disruption of normal anatomy of urethra or due to scarring and fixation of these tissues.[4] Magnetic resonant imaging (MRI) of women with SUI shows abnormalities like small urethral sphincter, funneling at the bladder neck, distortion of the urethral ligamentry support, cystocele, an asymmetric pubococcygeus muscle, abnormal shape of the vagina, enlargement of the retropubic space, and an increased vesicourethral angle. When intra-abdominal pressure increases, these abnormalities cause unequal movement of the anterior and posterior walls of the bladder neck, and urethra and urethral lumen are being pulled open as the posterior wall of the urethra moves away from the anterior wall.[5,6]

On cadaveric dissection, ventral and dorsal urethral ligaments have been identified.

The ventral urethral ligaments included the pubourethral ligaments, the periurethral ligament, and the paraurethral ligaments. Dorsal urethral ligament is a sling-like

**Table 1:** Details of all patients managed by Burch colposuspension

| | *Case 1* | *Case 2* | *Case 3* | *Case 4* | *Case 5* | *Case 6* | *Case 7* | *Case 8* |
|---|---|---|---|---|---|---|---|---|
| Age | 43 | 37 | 62 | 46 | 48 | 59 | 30 | 48 |
| BMI | 24 | 25 | 22 | 23 | 22 | 21 | 30 | 20 |
| Symptoms | AUB<br>SUI since 4 months | Abdominal lump<br>SUI since 10 months | SUI<br>SCOPV<br>Since 2 years | AUB<br>SUI since 3 months | AUB<br>SUI<br>Since 6 months | Postmenopausal bleeding per vaginal<br>SUI | Infertility<br>SUI | Abdominal lump<br>SUI |
| Obstetric history | P3L3 | P2L2 | P4L4 | P6L6 | P4L4 | P2L2 | P0L0 | P2L2 |
| Mode of delivery | FTND | FT forceps delivery | FTND Home deliveries | FTND | FTND Last forceps delivery | FTND | _ | FTND |
| Past history | Tubal ligation done | Umbilical hernia repair | Appendectomy | | Tubal ligation done | | | Partial thyroidectomy |
| Examination | SUI+<br>Uterus 8 weeks size with multiple fibroids | P/A cystic mass of 8 × 8 cm<br>SUI+<br>P/V uterus Normal size<br>Right fornicial cystic mass 8 × 8 cm | SUI +<br>Cystocele + | SUI +<br>P/V uterus 8–10 weeks | P/A uterus 14 weeks<br>SUI+<br>P/V uterine fibroid | SUI +<br>P/V uterus bulky | P/A obesity +++<br>SUI+<br>2nd degree prolapse + | P/A 26 weeks size lump<br>SUI+ |
| Investigation | Ultrasound (USG) fibroid uterus | USG simple right ovarian cyst 9 × 10 cm | WNL | Endometrial biopsy—simple glandular hyperplasia | USG—Intramural fibroid 6 × 7 cm | Endometrium atypical hyperplasia | WNL | MRI—large intramural fibroid 20 × 20 cm |
| Surgery | TAH + Burch | Right ovarian Cystectomy + Burch | TAH BSO + Burch | TAH + Burch | TAH + Burch | TAH BSO + Burch | Anterior sling + Burch | TAH BSO + Burch |
| Intraoperative | Uneventful | Uneventful | Uneventful | Excessive bleeding Required one blood transfusion | Uneventful | Uneventful | Uneventful | Uneventful |
| Postoperative complications | Nil | Voiding difficulty After catheter removal managed conservatively | Nil | Urinary retention managed conservatively | Nil | Nil | Nil | Nil |
| Follow-up | No complaints | No complaints | | No complaints | No complaints | No complaints | No complaints | 2 months follow-up No complaints |

AUB: Abnormal uterine bleeding; SCOPV: Something coming out per vaginum; PL: Para living; FTND: Full-term normal delivery; P/A: Per abdominal; P/V: Per vaginal; USG: Ultrasonography; WNL: Qithin normal limits; TAH: Total abdominal hysterectomy; BSO: Bilateral salphingo-oophorectomy

ligament "suburethral ligament". If these supporting ligaments become unstable, any increase in abdominal pressure can cause SUI.[7]

## Risk Factors for SUI

Age, childbirth, postsurgery, chronic obstructive lung diseases, chronic weight lifting, pelvic radiation, obesity, neurogenic deceases, and congenital poor tissues are the notable risk factors.[4]

## Burch Retropubic Urethropexy

Burch retropubic urethropexy was initially described in 1961.[8]

The aim of surgery is to reestablish the intra-abdominal location of proximal urethra and the urethrovesical junction in retropubic space so as to minimize the descent of bladder neck and urethrovaginal junction when intra-abdominal pressure increases.

## Procedure

After exposure of the retropubic space as shown in Figure 1, the bladder neck and point of attachment of endopelvic fascia are identified, especially the pubocervical fascia. Generally, two to three permanent sutures are placed on each side of the bladder neck. The first suture is placed in the vaginal wall at the level of the bladder neck and is passed through Cooper's ligament as shown in Figure 2. Subsequent sutures are placed proximal to the initial suture in a similar fashion. Once placed, the sutures are tied to suspend the bladder neck as in Figure 3. Burch retropubic urethropexy can also be performed laparoscopically. Cure rate is 85 to 90% at 1 to 5 years and more than 70% at 10 years.[4]

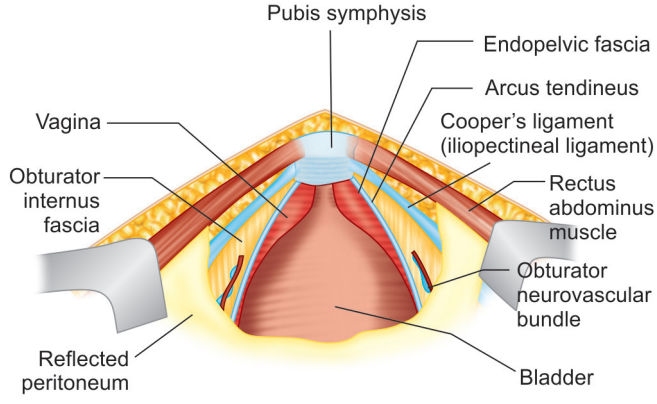


**Fig. 1:** Normal anatomy after dissection of retropubic space

Two studies were conducted to evaluate long-term durability of the Burch retropubic urethropexy, with success observed in 69% of patients at 7.6 and 13.8 years.[9,10]

Postoperative complications can be voiding dysfunction in 10.3% of patients, *de novo* detrusor instability in 17%, and genitourinary prolapse in 13.6% of patients.[11]

Since SUI is the most common cause of UI, at about 49% of all incontinences, and as it affects the quality-of–life,[3] it is really a challenge to diagnose and treat the condition appropriately. We have managed to set right eight cases of genuine SUI by Burch retropubic urethropexy, as these patients also needed abdominal surgeries for other indications.

In our case series, 6 out of 8 patients were multipara. Two were postmenopausal. All of them except one had full-term vaginal deliveries. Out of 8 patients, 2 had forceps delivery. Neither of them had any spinal surgery in the past nor did they have any chronic lung diseases. Seven patients had body mass index (BMI) in the range of 20 to 25, but one was obese. All eight patients had demonstrable SUI along with either abnormal uterine bleeding or lump in abdomen or vaginal prolapse. Intraoperatively, one patient had excessive bleeding, and dissection for which she required blood transfusion. Two patients had

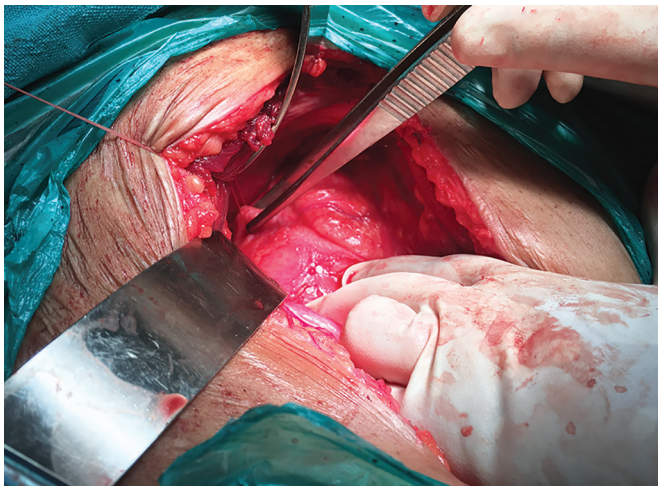

**Fig. 2:** Placement of suture in the vaginal wall at the level of bladder neck and passed through Cooper's ligament

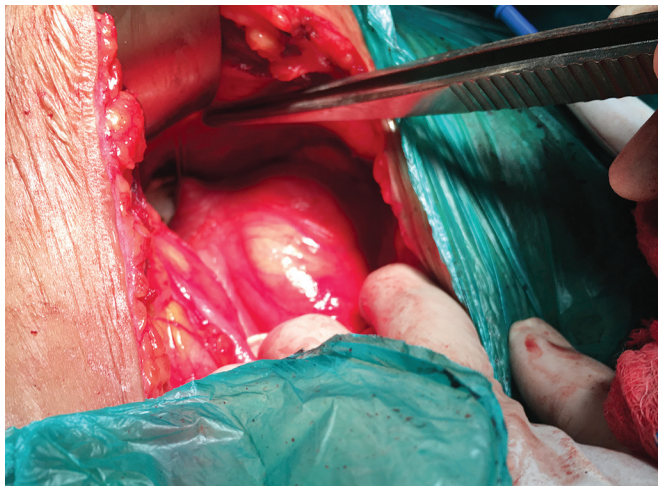

**Fig. 3:** Sutures are tied to suspend the bladder neck

postoperative minor urinary complaints, and they were managed conservatively.

On 1-year follow-up, none of the patients had any urinary complaints. All had responded well to surgery and patient's satisfaction index was good.

## CONCLUSION

Since SUI is the commonest among incontinences and it affects the quality-of-life of the patient,[3] it is a challenge to diagnose and treat it appropriately to improve quality-of-life. Burch retropubic urethropexy is the gold standard treatment for SUI, especially, if other indications exist for abdominal surgery. Even in the present era of less invasive vaginal procedures, results are comparable with other alternatives.[12,13] Though the procedure has a small learning curve, the results make it worth for the surgeons to learn it.

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