



LAPAROSCOPIC BURCH COLPOSUSPENSION IN CONTEMPORARY PRACTICE: A CASE SERIES

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ABSTRACT

Background: Stress urinary incontinence (SUI) is a common condition affecting women, significantly impairing quality of life. Burch colposuspension has long been regarded as a gold-standard surgical treatment. With advancements in minimally invasive surgery, laparoscopic Burch colposuspension has re-emerged as a viable alternative to mid-urethral sling procedures, particularly in selected patient populations. **Objectives:** To evaluate the feasibility, safety, and clinical outcomes of laparoscopic Burch colposuspension as a primary surgical option for stress urinary incontinence. **Methods:** This prospective observational single-center case series included women undergoing primary laparoscopic Burch colposuspension between October 2023 and October 2025. Patient demographics, concomitant procedures, operative details, postoperative outcomes, and complications were analyzed. **Results:** A total of 10 patients underwent laparoscopic Burch colposuspension. The mean age was 50 years. Concomitant procedures included total laparoscopic hysterectomy in four patients and laparoscopic myomectomy in two patients. The mean operating time was 55 minutes, with an average hospital stay of 2–3 days. All patients experienced complete resolution of stress urinary incontinence within 2–3 months. No intraoperative or postoperative urinary, vaginal, or mesh-related complications were observed. **Conclusion:** Laparoscopic Burch colposuspension is a safe, effective, and minimally invasive procedure for the management of stress urinary incontinence. It remains an acceptable primary surgical option, particularly in women undergoing concomitant pelvic surgery or those in whom mesh-based procedures are contraindicated.

KEYWORDS : Stress urinary incontinence, Laparoscopic Burch colposuspension, Minimally invasive surgery, Female pelvic floor disorders

INTRODUCTION

Stress urinary incontinence (SUI) is defined as the involuntary leakage of urine during activities that increase intra-abdominal pressure such as coughing, sneezing, or physical exertion. It is one of the most prevalent pelvic floor disorders in women, with significant physical, psychological, and social consequences.

Burch colposuspension has traditionally been considered the gold-standard surgical treatment for SUI due to urethral hypermobility. With the advent of mid-urethral sling procedures such as transobturator tape (TOT) and tension-free vaginal tape (TVT), surgical practice has shifted toward less invasive, mesh-based techniques. However, concerns regarding mesh erosion, chronic groin pain, infection, and long-term complications have renewed interest in non-mesh alternatives.

Laparoscopic Burch colposuspension combines the efficacy of the traditional open technique with the advantages of minimally invasive surgery, including reduced postoperative pain, shorter hospital stay, and faster recovery. Additionally, it can be conveniently performed alongside other laparoscopic gynecological procedures.

Objectives

The primary objective of this study was to evaluate laparoscopic Burch colposuspension as a **primary surgical option** for women with stress urinary incontinence.

Secondary Objectives Included:

- Assessment of operative time and hospital stay
- Evaluation of postoperative urinary outcomes
- Identification of perioperative and postoperative complications

MATERIALS AND METHODS

Study Design

This was a **prospective observational single-center case**

series conducted at KVG Medical College & Hospital, Sullia.

Study Period

October 2023 to October 2025.

Study Population

A total of **10 women** diagnosed with stress urinary incontinence were included in the study.

Inclusion Criteria

- Clinically diagnosed stress urinary incontinence
- Patients undergoing primary surgical management
- Patients willing to undergo laparoscopic surgery

Exclusion Criteria

- Mixed or urge urinary incontinence
- Previous anti-incontinence surgery (except one post-hysterectomy case)
- Neurogenic bladder disorders

Patient Characteristics

Mean Age: 50 years

Concomitant Procedures:

- o Total laparoscopic hysterectomy – 4 patients
- o Laparoscopic myomectomy – 2 patients
- o Post-hysterectomy status – 1 patient
- o No concomitant procedure – 3 patients

Surgical Technique

All procedures were performed under general anesthesia using a standard laparoscopic approach.

The steps of laparoscopic Burch colposuspension included:

1. **Dissection of the retropubic space of Retzius**, ensuring clear visualization of anatomical landmarks.
2. **Exposure of the obturator internus muscle and the white line**, facilitating accurate placement of sutures.

3. Identification of the white glistening anterior vaginal wall, confirming correct tissue planes.
4. Placement of non-absorbable sutures in the paravaginal fascia bilaterally.
5. Anchoring the sutures to Cooper's ligament on each side without tension, thereby elevating and stabilizing the urethrovesical junction.

Hemostasis was ensured, and ports were closed in the standard manner.

Outcome Measures

- Resolution of stress urinary incontinence
- Operative time
- Duration of hospital stay
- Intraoperative and postoperative complications

Patients were followed up postoperatively and assessed clinically for urinary symptoms.

RESULTS

- **Mean operative time:** 55 minutes
- **Hospital stay:** 2–3 days
- **Symptom resolution:** Complete resolution of stress urinary incontinence observed within 2–3 months in all patients

No Patients Reported:

- Urinary retention
- Urinary tract infection
- Vaginal discharge or infection
- Local surgical site infection

There were **no intraoperative complications**, and no cases required conversion to open surgery.

DISCUSSION

Mid-urethral sling procedures such as TOT and TVT have gained popularity due to their simplicity and shorter learning curve. However, these procedures are comparatively blind and involve permanent synthetic mesh, which may lead to long-term complications.

Laparoscopic Burch colposuspension offers several advantages:

- Direct visualization of anatomical structures
- Avoidance of synthetic mesh
- Comparable success rates to sling procedures
- Ability to combine with other laparoscopic gynecological surgeries

In obese women and in patients undergoing concomitant pelvic surgery, laparoscopic Burch colposuspension is particularly advantageous. Our findings demonstrate excellent short-term outcomes with minimal morbidity.

Limitations

- Small sample size
- Short follow-up duration
- Single-center study

Further randomized controlled trials with larger populations and long-term follow-up are required to validate these findings.

CONCLUSION

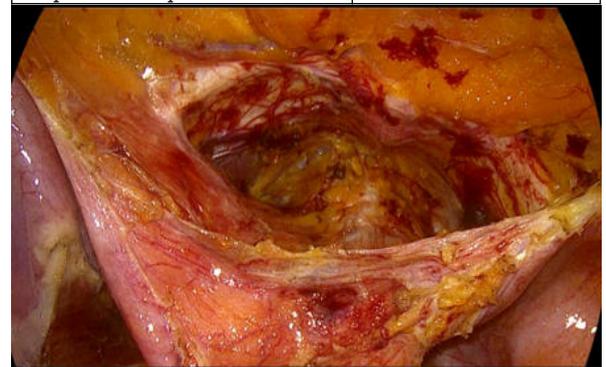
Laparoscopic Burch colposuspension is a safe, effective, and relatively quick minimally invasive procedure for the treatment of stress urinary incontinence. It can be considered a **primary surgical option**, especially in women undergoing concomitant laparoscopic surgery or in those where mesh-based procedures are unsuitable.

Table 1. Baseline Demographic And Clinical Characteristics Of Patients

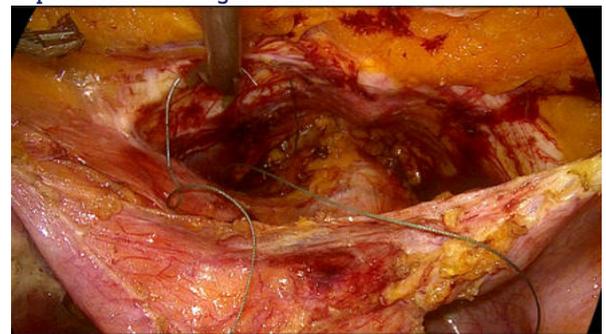
| Variable | Value |
|------------------------------|----------------------------------|
| Number of patients | 10 |
| Mean age (years) | 50 |
| Age range (years) | 42–62 |
| Parity | Multiparous |
| Body mass index | Predominantly overweight/obese |
| Type of urinary incontinence | Pure stress urinary incontinence |
| Previous hysterectomy | 1 |

Table 2. Operative Details And Postoperative Outcomes

| Parameter | Outcome |
|-------------------------------------|-------------------------|
| Mean operative time | 55 minutes |
| Concomitant procedures | TLH (4), Myomectomy (2) |
| Length of hospital stay | 2–3 days |
| Intraoperative complications | None |
| Postoperative urinary complications | None |
| Time to complete symptom resolution | 2–3 months |
| Success rate | 100% |
| Reoperation required | None |



Dissected Space Of Retzius With Cooper's Ligament Exposed And Paravaginal Fascia



Non-absorbable Sutures On Each Side In The Paravaginal Fascia



Non-absorbable Sutures Anchored To Cooper's Ligament

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