

Burch Colposuspension: Review of Perioperative Complications at a Women's and Children's Hospital in Singapore

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Abstract

Introduction: This study aims to determine perioperative complications of Burch colposuspension. **Materials and Methods:** A retrospective casenote review was conducted on all cases of Burch colposuspension performed or supervised by a single, trained urogynaecologist between January 1998 and December 2001. **Results:** Of the 250 women, 151 (60.4%) had Burch colposuspension in conjunction with other procedures. The other procedures included 117 hysterectomies, 15 sacrocolpopexies and hysterectomies, 11 sacrocolpopexies, 4 sacrohysteropexies, 3 posterior repairs and 1 ovarian cystectomy. Data from the 99 women who underwent only Burch colposuspension were analysed. Eight (8.1%) women had blood loss of >500 mL; of these 3 lost >1000 mL. Three (3%) women required blood transfusion. Urinary retention occurred in 13 (13.1%) women for >10 days and 4 (4%) women required catheterisation for between 21 and 29 days. Wound infection/haematoma, gross haematuria and febrile illness accounted for 2 (2%), 20 (20.2%) and 6 (6%) cases, respectively. One (1%) woman, who had 3 previous pelvic surgeries, required reoperation for repair of ureteric injury. **Conclusion:** Burch colposuspension should be performed or supervised by trained instructors who must anticipate potential problems, especially in women with previous pelvic surgeries, before they get worse. There should be strict criteria of the number of Burch colposuspension observed and assisted, before performing them supervised.

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Introduction

Genuine stress incontinence (GSI) is the most common cause of female urinary incontinence. When conservative treatment fails, surgery is indicated. Open Burch colposuspension is an established surgical procedure¹ and remains the gold standard² upon which the efficacy of newer surgical options is evaluated. In Singapore, dedicated urogynaecological clinics were introduced in the early 1990s. There has been a steady increase in patient attendances as women became aware of available treatment for urinary incontinence. Some doctors were sent for subspecialty training in urogynaecology. However, there remains a lack of data from Singapore and Asia that examined the perioperative risks associated with Burch colposuspension. Therefore, we undertook a retrospective review of the perioperative complications of women undergoing Burch colposuspension at a dedicated urogynaecology centre.

Materials and Methods

The casenotes of women who underwent Burch colposuspension for GSI between January 1998 and December 2001 at the KK Women's and Children's Hospital, performed or supervised by a single urogynaecologist, were reviewed. All women completed a comprehensive urogynaecologic history and physical examination and had urodynamically proven GSI. Both inpatient and outpatient charts were reviewed for demographic characteristics, urogynaecological findings, operative statistics and post-operative complications. A single urogynaecologist performed or directly supervised all the surgeries. All women had suprapubic catheterisation and retropubic drainage postoperatively and received prophylactic antibiotics (intravenous cefazolin and flagyl at induction of anaesthesia and for 24 hours thereafter). Early mobilisation was encouraged by physiotherapists. Thromboprophylaxis adhered to the hospital's major gynaecology surgery protocol.

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Results

A total of 250 women had Burch colposuspension performed. Of the women, 99 (39.6%) had only a Burch colposuspension. The rest had the Burch procedure with concomitant surgery, comprising 117 hysterectomies, 15 sacrocolpopexies and hysterectomies, 11 sacrocolpopexies, 4 sacrohysteropexies, 3 posterior repairs and 1 ovarian cystectomy. As our main objective was to review the perioperative complications of Burch colposuspension, the cases with concomitant surgery were excluded from the analyses because the surgical procedures have complications of their own. Two women had previous bladder neck surgery (anterior repair). The remaining 97 women underwent primary incontinence surgery. The women had a mean age of 50.4 (range, 33 to 74) years, and mean hospital stay of 4.6 (range, 3 to 16) days. Table I shows the time to successful postoperative voiding. By day 5, 70% of women were able to void spontaneously. Other complications of Burch colposuspension are shown in Table II. Gross haematuria (20.2%), urinary retention (18.2%) at day 7, blood loss >500 mL (8.1%) and febrile illness >38°C (6.1%) were the most common complications. Gross haematuria resolved with conservative management in all cases, mostly within 24 hours. There were no cases of deep venous thrombosis or pulmonary embolism. Left ureteric injury occurred in a patient who had previously undergone 3 previous pelvic surgeries and had severe pelvic adhesions, reduced vaginal mobility and bladder adherence to the retropubic space. The bladder was perforated at 2 sites. This was repaired and intravesical infusion of methylene blue did not reveal any leakage. Injury to the ureter was noted postoperatively when the patient presented with severe left loin pain and the retropubic drain contained copious amounts of fluid suspicious of urine. Resolution of the stricture necessitated percutaneous nephrostomy followed by temporary insertion of Surgitek (USA) Double J ureteral stent. Both cases of bladder perforation were recognised and repaired intraoperatively.

TABLE I: POST BURCH COLPOSUSPENSION CATHETER REMOVAL

Days	No. of women voiding successfully after catheter removed	%
3	51	51.5
4	14	14.1
5	4	4.0
6	6	6.1
7	6	6.1
8	0	0
9	1	1.0
10	4	4.0
11-20	9	9.1
21-29	4	4.0

Both cases that had previous bladder neck surgeries were complicated by urinary retention for over 10 days.

Discussion

This is the first report examining the perioperative complications encountered at Burch colposuspension in a large number of women in Singapore and in Asia. Similar studies performed outside of Asia are from dedicated urogynaecology centres. The urogynaecology centre in our institution is a tertiary referral centre. Trainees or general gynaecologists perform the majority of operations under the direct supervision of urogynaecologists. In comparing complication rates following Burch colposuspension, it is important to emphasise that there are no universally accepted standards of morbidity or definitions of major or serious complications.

In our review, massive haemorrhage (>1000 mL) occurred in 3% of patients. Kenton et al³ reported in 2% of patients using similar criteria. Demirci et al⁴ reported massive haemorrhage in 2.8% of patients, although the estimated volume was not specified. Van Geelen et al⁵ reported haemorrhage requiring exploration in 2.9% of patients. Sohl et al⁶ reported haemorrhage (>500 mL) in 21.2% of patients. Three (3%) patients required blood transfusion. Blood transfusion requirements were reported by Kenton et al³ in 0.7% of patients, by Demirci et al⁴ in 3.1% of patients, by Baker and Drutz⁷ in 33.3% and by Sohl et al⁶ in 2.1% of patients.

We had 1 (1%) patient with 3 previous pelvic surgeries who sustained ureteric injury. Previous surgery causes fibrosis and dislocation of local tissues. Ureteric injury is not uncommon after colposuspension, especially in patients who had previous surgery.⁸ Galloway et al⁹ reported ureteric injury in 2% of patients, Demirci et al⁴ reported in 0.2% and Korda et al¹⁰ reported in 1.1% of patients.

There were no cases of permanent voiding difficulties. Permanent self-catheterisation was reported by Christensen et al¹¹ in 2.2%, by Kenton et al³ in 0.7%, by Kremer and

TABLE II: PERIOPERATIVE COMPLICATIONS OF BURCH COLPOSUSPENSION

Complication	No. of women (%) (n = 99)
Estimated blood loss >1000 mL	3 (3)
Estimated blood loss >500 mL	8 (8.1)
Transfusion	3 (3)
Reoperation	1 (1)
Wound infection/haematoma	2 (2)
Bladder perforation	2 (2)
Ureteric injury	1 (1)
Fever >38°C	6 (6.1)
Gross haematuria	20 (20.2)

Freeman¹² in 2% and by Korda et al¹⁰ in 1.1% of patients. We found urinary retention at day 7 in 18.2% of patients and 1 patient voided successfully at day 29.

Bladder injury was reported by Stanton and Cardozo¹³ in 0.6%, by Wang¹⁴ in 2.4%, by Kenton et al³ in 2% and by Christensen et al¹¹ in 1.1% of patients. We had 2 (2%) cases of bladder injury that were repaired intraoperatively.

Wound infection was reported by Galloway et al⁹ in 2.9%, by Kiilholma et al¹⁵ in 4.3%, by Ghezzi et al⁶ in 11.3%, by Demirci et al⁴ in 5% and by Kenton et al³ in 3.3% of patients. We found wound infection in 1 (1%) patient and wound haematoma in 1 (1%) patient.

Gross haematuria was common in the first 24 hours after surgery. All cases resolved spontaneously with continuous bladder drainage and continuation of intravenous prophylactic antibiotics. This may be due to trauma during dissection and is often self-limiting.

Deep venous thrombosis was reported by Stanton and Cardozo¹³ in 0.6%, by Demirci et al⁴ in 0.8% and by Galloway et al⁹ in 0.6%. No cases were reported by Kenton et al.³ Pulmonary embolism was reported in 0.5% of patients by Kiilholma et al¹⁵ and in 0.3% of patients by Baker and Drutz.⁷ These complications were absent in our study.

Febrile morbidity was reported by Ghezzi et al¹⁶ in 17.7%, by Demirci et al⁴ in 7.8% and by Sze et al¹⁷ in 17.5% of patients. Febrile morbidity occurred in 6.1% of patients in this series.

Conclusion

The perioperative complication rates of Burch colposuspension at our centre compare favourably with other tertiary urogynaecology centres around the world. It is important that reviews of large number of cases are conducted in a dedicated urogynaecology centre to allow early identification of any unacceptable complication rate and to take steps to rectify the situation. It is imperative that the latest information is made available for patients when counselled for surgery; especially when surgery can result in serious morbidity whereas urinary incontinence does not. There should be strict criteria of the number of Burch colposuspension observed and assisted, before performing them supervised. Burch colposuspension should be

performed or supervised by trained instructors who must anticipate potential problems, especially in women with previous pelvic surgeries, before they get worse.

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