

# Five Years Follow Up of Laparoscopic Burch Colposuspension for Stress Urinary Incontinence in Thai Women

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**Objectives:** To study the cure rate and 5 year results of laparoscopic burch colposuspension for stress urinary incontinence in Thai women.

**Material and Method:** Twenty one Thai women with stress urinary incontinence attending the gynecology clinic at King Chulalongkorn Memorial hospital were recruited. Pre operative clinical and urodynamic evaluation were done. They underwent Laparoscopic burch colposuspension between January – December 1998. The cure rate was evaluated by clinical and urodynamic examination.

**Results:** The mean  $\pm$  SD of operative time, blood loss and hospital stay were  $70 \pm 20$  min,  $140 \pm 30$  ml and  $1.6 \pm 0.5$  days respectively. The complication rate was 19.1% (Bladder injuries 2 cases, voiding difficulties 1 case and de novo detrusor overactivity 1 case). The objective cure rate at 5 years was 76.2%.

**Conclusion:** The authors found that the cure rate was rather low in laparoscopic burch colposuspension. Due to the long operative time, the requirement of complicated instruments and well trained physicians, the authors suggested that this technique should be selected only in cases of women with concomitant gynecologic disease that required laparoscopic surgery.

**Keywords:** Laparoscopic colposuspension, Stress urinary incontinence

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Female stress urinary incontinence is a common problem with significant effect on the quality of life of women. The reported prevalence varied from 3 to 67%<sup>(1-5)</sup>. Treatment options for this problem include conservative (life style intervention, physical therapy and devices), pharmacological or surgical therapies. Surgery procedures to remedy stress urinary incontinence are generally aimed to elevate and/or support the urethrovaginal junction or mid-uretra. Numerous surgical procedures have been described, of which the Burch colposuspension with an 80-95% rate<sup>(6)</sup> is currently the most widely practiced and has been studied most extensively. Vancaille and Schnosler<sup>(7)</sup> introduce the laparoscopic approach to the Burch procedure. Since then, the significant advantages of laparoscopic

colposuspension over laparotomy has been shown. It used a smaller incision, it allowed for easier access to the space of Retzius, better visibility of the operative field, and minimal intraoperative blood loss and post-operative pain, and there was less need of analgesia, quicker recovery time, shorter hospital stay, and an earlier return to work<sup>(8-12)</sup>. However, the small number of studies and short term follow up did not show significant differences between laparoscopic and open colposuspension in terms of subjective or objective outcome<sup>(13)</sup>. Up to now, there is no long term study of the outcome of laparoscopic colposuspension in Thailand. The aim of the present study was to evaluate the 5 years results of the laparoscopic colposuspension in the treatment of stress incontinence in Thai women.

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## Material and Method

From January to December 1998, 21 women with stress urinary incontinence (SUI) attending

gynecologic clinic at King Chulalongkorn Memorial hospital were recruited. Pre-operative clinical and urodynamic evaluation were done. They underwent laparoscopic Burch as described by Vancaille<sup>(10)</sup>.

#### **Laparoscopic Burch Colposuspension Technique<sup>(10)</sup>**

The laparoscopic colposuspension was performed using nonabsorbable No.0 sutures; the authors routinely used polypropylene suture (Ethibond, Ethicon). The surgeon's nondominant hand was placed in the vagina and a finger was used to elevate the vagina. The endopelvic fascia on both sides of the bladder neck and midurethra were exposed using an endoscopic blunt dissector. The first suture was placed 2 cm lateral to the urethra at the level of the midurethra. A figure of 8 suture, incorporating the entire thickness of the anterior vaginal wall excluding the epithelium, was taken, and the suture was then passed through the ipsilateral Cooper's ligament.

With an assistant's fingers in the vagina to elevate the anterior vaginal wall toward Cooper's ligament, the suture was tied down with a series of extracorporeal knots using an endoscopic knot pusher. An additional suture was then placed in a similar fashion at the level of the urethrovesical junction, approximately 2 cm lateral to the bladder edge on the same side. The procedure was repeated on the opposite side. Excessive tension on the vaginal wall should be avoided when tying down the sutures. The authors routinely leave a suture bridge of approximately of 2 to 3 cm.

Upon completion of Burch urethropexy, the intra-abdominal pressure was reduced to 10 to 12 mm Hg, and the retropubic space was inspected for hemostasis. All ancillary trocar sheaths were removed under direct vision to ensure hemostasis and exclude iatrogenic bowel herniation. Excess gas was expelled and fascial defects of 10 mm or more were closed using delayed absorbable suture. Postoperative bladder drainage and voiding trials were accomplished using either a transurethral catheter, suprapubic tube, or intermittent self-catheterization. After the operation, the collection of data regarding the intra-operative blood loss, operative time, hospitalization and complications were recorded. Follow up at 3, 6, 12, 18, 24, 30, 36 months and 4, 5 years respectively were scheduled after surgery. Patients were considered objectively cured if no incontinence on the stress provocation test, and no urinary retention or residual urine volume greater than 150 ml were found. Patients were considered objectively improved if no incontinence on the stress provocation test was found. All other cases were reported

as objective failures.

#### **Results**

Most women had a long history of SUI (Table 1). The authors found the mean  $\pm$  SD of operative time, blood loss and hospital stay of  $70 \pm 20$  min,  $140 \pm 30$  ml and  $1.6 \pm 0.5$  days respectively (Table 2). The overall complications rate was 19.1% (Bladder injuries 2 cases, voiding difficulties 1 case and de novo detrusor overactivity 1 case) (Table 3). The authors found the 2 bladder injures while dissecting the retropubic space (table 3). One case had a previous history of suprapubic tubal resection. The authors had to convert to open laparotomy to repair the bladder. One case of voiding difficulty was noted (post void residuals  $> 100$  cc) at 3 days after operation. She needed clean intermittent catheterization for 5 days. The de novo detrusor overactivity was noted in one case at 3 months (Table 3). After anticholinergic drug and bladder

**Table 1.** Patients' characteristic (n = 21)

	Mean $\pm$ SD	Range
Age (years)	47 $\pm$ 6.7	40-58
Duration of SUI (years)	5.7 $\pm$ 2.7	2-9
BMI	25.3 $\pm$ 6.5	22-30
Parity	2.3 $\pm$ 1.2	1-4

**Table 2.** Operative outcome (n = 21)

	Mean $\pm$ SD	Range
Operative time (min)	70 $\pm$ 20	50-120
Blood loss (ml)	140 $\pm$ 30	100-200
Hospital stay (days)	1.6 $\pm$ 0.5	1-3

**Table 3.** Complications (n = 21)

Complications	N (%)
1. Overall complication rate (%)	4 (19.1)
2. Perioperative complications (%)	
Excessive hemorrhage $> 300$ ml	0
Blood transfusion	0
Conversion to laparotomy	0
Bladder injury	2 (9.5)
3. Postoperative complication (%)	
Urinary infection	0
Voiding difficulties lasting $< 15$ days	1 (4.8)
De novo detrusor overactivity	1 (4.8)

**Table 4.** Objective cure rate (%) (n = 21)

	N (%) 1 year	N (%) 2 years	N (%) 3 years	N (%) 4 years	N (%) 5 years
Cure	20 (95.2)	20 (95.2)	17 (80.9)	16 (76.2)	16 (76.2)
Improvement	-	-	2 (9.5)	3 (14.3)	2 (9.5)
Failure	1 (4.8)	1 (4.8)	2 (9.5)	2 (9.5)	3 (14.3)

training, they revealed no symptom at 6, 12 months and up to the present. The objective cure rate at 5 years was 76.2% (Table 4).

### Discussion

Laparoscopic Colposuspension was developed to lessen the hospital stay and decrease the incision size when compared to the open technique<sup>(10)</sup>. But the complicated laparoscopic technique required a longer operative time and well trained physicians<sup>(15-16,20)</sup>. From the present study, the authors found a long operative time which may be due to early experience. After the learning curve of the first 5 cases, the authors found the operative time to be shorter. However, when compared to the open technique, this laparoscopic technique required a longer operative time as previous reports<sup>(15-16,20)</sup>. There were several reported laparoscopic burch colposuspension case series that had used conventional surgical technique and suture materials. Published cure rate ranged from 69% to 100%, with the majority of the studies reporting cure rates greater than 80%<sup>(14-31)</sup>. From the present study, the authors found an overall success rate of 76.2%. There were 3 cases of failure on which the authors had to perform the tension free vaginal tape (TVT) to treat the recurrent SUI. This new technique (TVT) is gaining popularity with the advantages of minimal invasive technique, short hospital stay and small incision compared to laparoscopic Burch colposuspension<sup>(33-35)</sup>. The TVT had more advantages than the laparoscopic burch colposuspension due to the less complicated instruments, not requiring well trained physicians in laparoscopy skill and a shorter operative time. The objective cure rate of TVT was as high as 80-90%<sup>(33-35)</sup>. From the authors experience in TVT<sup>(36)</sup>, this technique was found to be safe and very effective. So the authors suggest performing the laparoscopic Burch colposuspension only in cases of women with concomitant gynecologic disease that requiring laparoscopic surgery.

### Conclusion

The authors found that the cure rate of

laparoscopic Burch colposuspension was rather low. With the long operative time, the requirement of complicated instruments and well trained physicians, the authors suggest that this technique should be selected in cases of women with concomitant gynecologic disease that requires laparoscopic surgery.

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## ผลการติดตาม 5 ปี ของการผ่าตัด Burch Colposuspension ผ่านกล้องลาพาโรสโคป ในการรักษาโรค ไอจามปัสสาวะเล็ดในสตรีไทย

สุวิทย์ บุญยะเวชชีวิน, วิรัช วิศวกรรมมงคล

**วัตถุประสงค์:** เพื่อศึกษาอัตราความสำเร็จและผลการติดตาม 5 ปี ของการผ่าตัด Burch Colposuspension ผ่านกล้องลาพาโรสโคป ในการรักษาโรคไอจามปัสสาวะเล็ดในสตรีไทย

**วัสดุและวิธีการ:** ทำการศึกษาสตรีไทย จำนวน 21 คน เป็นโรคไอจามปัสสาวะเล็ดเข้ารับการรักษาที่คลินิกนรีเวช โรงพยาบาลจุฬาลงกรณ์ ทำการซักประวัติตรวจร่างกายและตรวจ urodynamic ก่อนผ่าตัด ได้รับการผ่าตัด Burch Colposuspension ผ่านกล้องลาพาโรสโคประหว่าง เดือนมกราคม – ธันวาคม พ.ศ. 2541 ตรวจอัตราการหายขาดจากการประเมินโดยการตรวจทางคลินิกและ Urodynamic

**ผลการศึกษา:** ค่าเฉลี่ย + ส่วนเบี่ยงเบนมาตรฐานของระยะเวลาเฉลี่ยที่ใช้ในการผ่าตัด เลือดที่ออก และจำนวนวันในการอยู่โรงพยาบาลคือ 70 + 20 นาที, 140 + 20 มล. และ 1.6 + 0.5 วัน ตามลำดับ อัตราการเกิดภาวะแทรกซ้อนโดยรวมคือ 19.1% (บาดเจ็บต่อกระเพาะปัสสาวะ 2 ราย, ปัสสาวะลำบาก 1 ราย และมีภาวะ de novo detrusor overactivites 1 ราย) อัตราการหายขาดในปีที่ 5 คือ 76.2%

**สรุป:** ผลการติดตามในระยะ 5 ปี พบว่าการผ่าตัด Burch Colposuspension ผ่านกล้องลาพาโรสโคปได้ผลอยู่ในเกณฑ์พอใช้ เพราะมีอัตราการหายขาดต่ำ วิธีการผ่าตัดชนิดนี้ ใช้เวลาในการผ่าตัดนาน จำเป็นต้องใช้เครื่องมือที่ซับซ้อน และใช้แพทย์ผู้ชำนาญพิเศษ ผู้วิจัยคิดว่าวิธีผ่าตัดนี้ควรเลือกใช้ในสตรีที่มีโรคทางนรีเวชซึ่งจำเป็นต้องได้รับการผ่าตัดผ่านกล้องลาพาโรสโคปอยู่แล้ว

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