Long Term Results of Anterior Colporrhaphy with Kelly Plication for the Treatment of Stress Urinary Incontinence

Yuthadej Thaweekul MD*, Suvit Bunyavejchevin MD, MHS*,
Wirach Wisawasukmongchol MD*, Apirak Santingamkun MD**

** Department of Obstetric and Gynecology, Faculty of Medicine, Chulalongkorn University*
*** Department of Surgery, Faculty of Medicine, Chulalongkorn University*

Objective : *To study the five years' outcome of anterior colporrhaphy with Kelly plication for the treatment of stress urinary incontinence*

Material and Method : *Fifty two patients who underwent anterior colporrhaphy with Kelly plication with or without posterior colpoperineorhapy for the treatment of stress urinary incontinence between January 1997 and February 1998 in King Chulalongkorn Memorial hospital were included in the study. All patients were contacted by phone, forty seven patients (90.38%) responded and were willing to participate in the present study. The patients' characteristics, operative data and outcome were reviewed. Questionnaires designed to assess the outcomes of the procedure and incontinence symptoms were given to each patient at the appointment date. Pelvic examination was performed using the Baden halfway classification for genital prolapse grading. Cough test was performed during pelvic examination for the objective demonstration of stress incontinence.*

Results : *The mean $\pm$ SD of age was 46.68 $\pm$ 8.78 yrs. The authors found that the incidence of post operative urinary retention was 43.3%. Incontinence rates at 1, 2, 3, 4 and 5 years were 0, 8.51%, 21.28%, 29.79% and 46.81% respectively.*

Conclusion : *The present results show the high recurrence rate at the five-year follow up. The authors emphasized the need of long term follow up and pre-operative counseling about the high chance of having recurrence by this operative technique.*

Keywords : *Stress incontinence, Kelly plication, Anterior colporrrhaphy*

J Med Assoc Thai 2004; 87(4): 357-60

Urinary incontinence is a common functional complaint occurring in 5-25% of women[1,2] and it is a social or hygienic problem. Genuine stress incontinence or urethral sphincter incompetence (urine loss during the period of increased intraabdominal pressure when the intravesical pressure rises higher than the urethral pressure without detrusor muscle activity) is the most common cause of urinary incontinence and is almost always treatable[3]. Many surgical procedures have been proposedto treat the disease. Incontinence surgery can be performed by laparotomy (Burch colposuspension, Marshall-Marchetti-Krantz prodecure), laparoscopy (laparoscopic Burch colposus-pens ion), sling operation (pubovaginal sling, tension free vaginal tape) and transvaginal approach (Anterior colporrhaphy with Kelly plication). Anterior colporrhaphy with Kelly plication is one of the oldest methods for the treatment of stress urinary incontinence but is still a popular method among gynecologic practitioners, because it can be approached by the vaginal route and can treat the genital prolapse at the same time. However many studies have shown a lower success rate of anterior colporrhaphy with Kelly plication compared with other surgical methods[4-7]. Up to now, there is no data about the long term results of anterior colporrhaphy with Kelly plication in Thailand. The purpose of the present study was to evaluate the five-year outcome of anterior colporrhaphy with Kelly plication for the treatment of stress urinary incontinence in Thai women.

Correspondence to : Bunyavejchevin S, Department of Obstetric and Gynecology, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand. Phone: 0-2256-4288, Fax: 0-2250-1320

Material and Method

The patients were recruited from the chart records of King Chulalongkorn Memorial Hospital. Fifty two patients who had a chief complaint of stress urinary incontinence (the involuntary loss of urine with increasing abdominal pressure) and had undergone the Anterior colporrhaphy with Kelly plication with or without posterior colpoperineorhaphy between January 1997 and December 1998 were included in this study.

From January 2002 to February 2003, the enrolled patients were contacted by phone. Forty seven patients (90.38%) responded and were willing to participate in the present study. The charts of all consecutive patients were reviewed about patients' characteristics, operative data and outcome. Age, weight, number of deliveries, menstrual status, route of delivery, duration of symptoms before surgery, type of operation, anesthetic method, early post-operative complications and length of the hospital stay were reviewed (Table 1 and 2). The mean age $\pm$ SD was 46.68$\pm$8.78 years. Most patients (95.7%) underwent the anterior colporrhaphy with Kelly plication and posterior colpoperineorhaphy. Mean operative time was 58.56 minutes, excluding the time used for inducing anesthesia. Local anesthesia (spinal block) was performed in 93.6%. The post-operative urinary retention was defined as a residual urine volume of 100 ml or greater after the second voiding, after the catheter was removed.

Questionnaires designed to assess the outcome of the operative procedure and incontinence symptoms were given to the patients at the appointment date. The patients were asked to state whether they were completely continent or had a recurrence. The patients were regarded as completely continent if they did not complain of persistent incontinence. The incontinent patients were asked to state the symptoms compared to the pre-operative state on a rank scale. The categories (substantially improved, slightly improved, unchanged or worse) were further defined, and the patients subjectively assigned themselves to one category. The pelvic examination was performed using the Baden halfway classification[8] for genital prolapse grading. Cough test was performed during pelvic examination for the objective demonstration of stress incontinence

Statistical method

Data were summarized using the descriptive statistics (mean, standard deviation, range and percentage).

Table 1. Patients' characteristic (N=47)

	Mean	SD	Range
Age	46.68	8.78	31-68
Body weight	59.42	8.87	42.1-93.5
Parity	3.40	1.58	1-8
Duration of incontinence before surgery (yrs)	2.40	1.75	1-8
Length of hospital stay	7.06	1.83	5-12
	n (%)		
Cesarean section	2(4.26)		
Menopause	11(23.4)		

Table 2. Operation and outcomes (N=47)

	n (%)		
• Operation			
- Anterior colporrhaphy with Kelly plication	2(43)		
- AP-repair with Kelly plication	45(95.7)		
• Anesthetic Method			
- Spinal block	44(93.6)		
- General anesthesia	3(6.4)		
	Mean	SD	Range
Operative time (min)	58.56	28.20	20-150

Results

From 1997 to 1998, 52 patients underwent the Anterior colporrhaphy with Kelly plication with or without posterior colpoperineorhaphy for the treatment of the stress urinary incontinence and cystorectocele. Five patients were excluded from the study: one died from a car accident and four patients were not available for the follow up. The remaining 47 patients (90.38%) were included in the present study. During the first year after operation all patients were completely cured (continence) and the recurrent rates were increased by the year (Table 3). The recurrent rate at five years after the operation was 46.81%. The incedence of post-operative urinary retention was 43.33%. All of them were treated by continuation of catheterization for one week and residual urine was checked

Table 3. Recurrent rate (N=47)

Recurrent rate	n (%)
1st year	0(0)
2nd year	4(8.51)
3rd year	10(21.28)
4th year	14(29.79)
5th year	22(46.81)

Table 4. Pelvic examination and Incontinence symptoms at 5 years (N=47)

	n (%)
• Cystocele grade I	20(42.55)
• Rectocele grade I	9(19.15)
• Incontinence symptoms (n = 22)	
1 = substantially improved	9(40.9)
2 = slightly improved	9(40.9)
3 = No difference	4(18.2)
4 = worse	0(0)

on the 7th day of catheterization. The authors found no case of prolonged catheterization more than one week. The findings of pelvic examination and incontinence symptoms the operation are shown in Table 4.

In women with incontinence, most were substantially improved or slightly improved (Table 4)

Discussion

Among the current concept of stress urinary incontinence, Burch colposuspension is the gold standard of treatment and has a high success rate[9]. Tension free vaginal tape (TVT), the newest technique for alternative treatment, also has a good long term result[10-12]. The Anterior colporrhaphy with Kelly plication, is one of the most popular operations for stress urinary incontinence in Thailand because this technique is considerably rapid and easy to perform. Despite those advantages and the widespread use of this technique, many studies have reported a low success rate [4-7]. There are reports of success rates about 37-84% at the five-year follow-up[4-7]. From the authors' extensive review, there is no study in Thailand reporting the long term results of this technique. Kelly plication is popular among gynecologists because it can include the treatment of genital prolapse (Colporrpaphy) in the same operation and the same vaginal approach. But the present results show a recurrence rate of 46.81% after five years. Even in cases of recurrence, the severity of symptoms is less severe than before surgery (Table 4), but the women still had to use pads or live with the incontinence. In cases of women who needed a second operation, the results were be poorer due to the previous scar under the bladder neck and there is higher chance of bladder injury. Burch colposuspension or tension free vaginal tape (TVT) can be the option in failed cases of anterior colporrhaphy with Kelly plication[13]. So the first operation is the most successful operation for stress incontinence. Furthermore, the present results show a high incidence of post operative urinary retention (43.33%), which can be explained by overcorrection.

Information should be given about the chance of having a recurrence by this operative technique. In cases of women with stress incontinence who don't want to be treated by surgery or fear a recurrence after surgery or medically complicated patients, pelvic floor muscles exercise should be advised as the alternative treatment.

Conclusion

As can be seen from this study, there is a high recurrence rate at five years (46.81%), the authors emphasize the need for long term follow up and preoperative counseling about the chance of having a recurrence by this technique.

References

1. Thomas MT, Plymat KR, Blannin J, et al. Prevalence of urinary incontinence. BMJ 1980; 281: 1243-5.
2. Iosif CF, Bekassy Z, and Rytidstrm H. Prevalence of urinary incontinence in middle-age women. Int J Gynaecol Obstet 1988; 26: 255-9.
3. Abrams P, Blaivas JG, Stanaton SL, Anderson JT. The standardisation of lower urinary tract function. The international continence society committee on standardisation of terminology. Scand J Urol Nephrol 1988; 114 (suppl): 5-19.
4. Arich Bergman and Giovanni. Three surgical procedures for genuine stress incontinence: Five-years follow-up of a prospective randomized study. Am J Obstet Gynecol. 1995; vol 173 No 1: 66-71.
5. Mario Colombo, Domenico Vitobello, Fabio Proietti, Rodolfo Milani. Randomized comparison of Burch colposuspension versus anterior colporrhaphy in women with stress urinary incontinence and anterior vaginal wall prolapse. RCOG 2000 British Journal of Obstetric and Gynecology.2000; Vol 107: 544-51.
6. Glazener CM, Cooper K. Anterior vaginal repair for urinary incontinence in women: Cochrane Database Syst. Rev. 2000; CD 001755.
7. Jarvis G. Surgery for Genuine Stress Incontinence. British Journal of Obstetrics and Gynaecology. 1994; Vol 101: 371-4.
8. Baden WF, Walker TA. Physical diagnosis in the evaluation of vaginal relaxation. Clin Obstet Gynecol. 1972; 5(4): 1055-69.
9. Karl F Tamussino, Franjo Zivkovic, Doris Pieber, Franz Moser, Josef Hass, George Rolph. Five-years results after anti-incontinence operation. Am J Obstet Gynecol. 1999; Vol 181 No 6: 1347-52.
10. Olsson J, Kroon U. A three-year postoperative evaluation of tension-free vaginal type. Gynecol Obstet Invest 1999: 48: 267-9.

11. Carl Gustaf Nilsson, Nina Kuuva. The tension-free vaginal type procedure is successful in the majority of women with indication for surgical treatment of urinary stress incontinence. RCDG 2001. Br J Obstet Gynecol 2001; 108: 414-9.
12. Bunyavejchevin S, Santingamkul A, Wisawasukmongk W, Bunyaraltavey P, Limpaphayom K. Tension-free vaginal type in the treatment of female urinary incontinence. 15th Annual Scientific Meeting of Royal Thai College of Obstetricians, October 17-20, Chiangrai Thailand, Royal Thai College of Obstetrician and Gynecologist, 2000: 81.
13. Rezapour M, Ulmsten U. Tension free vaginal tape in women with recurrent stress urinary incontinence-A long term follow-up. Int Urogynecol J 2001 (suppl2): S 9-11.

การศึกษาผลระยะยาวของการรักษาภาวะ ปัสสาวะเล็ดขณะไอ จาม ด้วยวิธีการผ่าตัดตกแต่งผนังช่องคลอดทางด้านหน้า และเย็บเนื้อเยื่อด้านข้างท่อปัสสาวะเข้าหากัน เพื่อยกมุมของคอกระเพาะปัสสาวะขึ้น

ยุทธเดช ทวีกุล, สุวิทย์ บุณยะเวชชีวิน, วิรัช วิศวสุขมงคล, อภิรักษ์ สันติงามกุล

วัตถุประสงค์ *: เพื่อศึกษาผลการรักษา 5 ปีภายหลังการผ่าตัดรักษาภาวะปัสสาวะเล็ดขณะไอ จามด้วยวิธีการผ่าตัดตกแต่งผนังช่องคลอดทางด้านหน้า และเย็บเนื้อเยื่อด้านข้างท่อปัสสาวะเข้าหากันเพื่อยกมุมของคอกระเพาะปัสสาวะขึ้น*

สถานที่ *: ภาควิชาสูติศาสตร์-นรีเวชวิทยา คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย*

รูปแบบการวิจัย *: การศึกษาเชิงพรรณนา (แบบตัดขวาง)*

ผู้ป่วยที่ได้ทำการศึกษา *: ผู้ป่วยทุกคนที่ได้รับการวินิจฉัยเป็นภาวะปัสสาวะเล็ดขณะไอ จาม และได้รับการผ่าตัดตกแต่ง ผนังช่องคลอดทางด้านหน้า และเย็บเนื้อเยื่อด้านข้างท่อปัสสาวะเข้าหากันเพื่อยกมุมของคอกระเพาะปัสสาวะขึ้น หรือ ร่วมกับทำการ ผ่าตัดตกแต่งผนังช่องคลอดทางด้านหลังด้วย ในโรงพยาบาลจุฬาลงกรณ์ ในปี พ.ศ.2540-2541*

วิธีการศึกษา *: ผู้ป่วยทั้งหมด 52 คน ในช่วงเวลาดังกล่าว ได้รับการติดต่อทางโทรศัพท์และมี 47 คน ที่ตอบรับและมีความยินดีที่จะเข้าร่วมวิจัยเก็บข้อมูลเกี่ยวกับลักษณะทั่วไปของผู้ป่วย ข้อมูลการผ่าตัดให้ผู้ป่วยตอบแบบสอบถามที่ทำขึ้นเพื่อประเมินผลการรักษา และปัญหาอาการปัสสาวะเล็ดหลังผ่าตัดในวันที่ผู้ป่วยมาพบ หลังจากนั้นได้ทำการตรวจภายในเพื่อดูภาวะความหย่อนของผนังช่องคลอด*

ผลการศึกษา *: อายุเฉลี่ยประมาณ 46.68 $\pm$ 8.78 ปี โดยพบว่าอัตราการเกิดภาวะปัสสาวะค้างในกระเพาะปัสสาวะภายหลังการผ่าตัดเท่ากับ 43.3% พบภาวะการเกิดภาวะปัสสาวะเล็ดขณะไอ จามภายหลังการผ่าตัดในปีที่ 1, 2, 3, 4 และ 5 เท่ากับ 0, 8.51%, 21.28%, 29.79% และ 46.81% ตามลำดับ*

สรุป *: จากผลการศึกษาพบว่ามีอัตราการกลับเป็นซ้ำของภาวะปัสสาวะเล็ดขณะ ไอ จามในอัตราที่สูงถึง 46.81% ที่เวลา 5 ปี ภายหลังผ่าตัด ควรให้คำปรึกษาก่อนผ่าตัดเกี่ยวกับโอกาสการกลับเป็นซ้ำของการผ่าตัดชนิดนี้*