Case Report of Voiding Difficulty after Intravaginal Slingplasty (IVS) Procedure: The Emphasize of Pre-service Training

Suvit Bunyavejchevin, MD, MHS*,
Apirak Santingamkun, MD**

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

Background: *The Intravaginal slingplasty procedure (IVS) is a minimally invasive surgery for the treatment of stress urinary incontinence (SUI). Too much tension during pulling the tape and the incorrect placing of the tape can cause urinary retention that may require release of the tape.*
Case Report: *A fifty one years old women with SUI had undergone IVS procedure in a private hospital. After the surgery, urinary retention occurred with prolonged catheterization for 20 days. The patient came to King Chulalongkorn Memorial Hospital on the 21st day after the operation. Surgical release of the tape which was located at the urethrovesical junction rather than the midurethera was done. The patient remained stress continent after the tape was released confirmed by the videourodynamic study one month later.*
Conclusion: *Too much tension, insertion of the tape too close to the urethrovesical junction or the tape migration may be the causes of prolonged urinary retention after IVS procedure. The authors found the surgical release of the tape to be the effective management for this complication. Pre-service training in models and practice under the supervision of an experienced surgeon are needed before attempting any on their own. From the authors extensive review, this is the first case report of urinary retention after IVS procedure that required tape incision*

Keywords: *Stress urinary incontinence, Intravaginal slingplasty, IVS*

J Med Assoc Thai 2005; 88(8): 1120-2
Full text. e-Journal: *http://www.medassocthai.org/journal*

The intravaginal slingplasty (IVS, Tyco) procedure is one of the synthetic sling procedures as the tension free vaginal tape (TVT, Ethicon) procedures which have become popular during the past few years[1-3]. The procedure aimed at placing the tape under the mid urethra[2-4] and acted as the pubourethral ligament[2-3,5]. This IVS created the suburethral hammock[2-3,5]. This procedure can be done on an outpatient basis and is defined as minimal invasive surgery. It causes less postoperative pain and fast recovery[1-3]. With these advantages, the IVS together with the other slings (such as TVT) are being done in increasing number by Urogynecologist, Urologists and general gynecologists.

During the learning curve, the surgeons should be aware of the potential complications and be skilled at managing them when they occur. Proper training for the correct techniques is required before attempting on their own.

The authors report a referred case of a Thai women whose post operative course was complicated by incomplete bladder emptying with prolonged cartheterization after the IVS procedure.

Correspondence to : Bunyavejchevin S, Department of Obstetric & Gynaecology, Faculty of Medicine, Chulalongkorn University, Rama IV Rd, Bangkok 10330, Thailand. Phone: 0-2256-4288, Fax:0-2250-1320, E-mail: fmedsby@md2.md.chula.ac.th

Case Report

A 51-year-old women, Para 2-0-0-2 underwent a total abdominal hysterectomy and bilateral salpingo-oophorectomy 10 years ago. She had the problem of SUI for 5 years. She underwent the IVS procedure and

posterior colpoperineorhaphy at a private hospital in Bangkok, Thailand. Pre operative pelvic examination revealed grade 2 rectocoel and positive cough test. The urodynamic study was not done. There were no intraoperative complications. The estimated blood loss was 100 ml. After the operation, there was no significant postoperative complication except for incomplete bladder emptying and difficult voiding. The patient could void only 20 ml with the post void residuals of >400 ml. She was put on a foley catheter for 21 days. Four attempts to remove the foley catheter were done but the urinary retention of more than 400 ml still occurred. On the 21st day, she asked to be refered to King Chulalongkorn Memorial Hospital for further treatment.

At King Chulalongkorn Memorial Hospital, the authors found that the foley catheter was pushed up close to the symphysis pubis. The urethra was kinking up. Urethral dilatation was done. Resistance was met at the urethrovesical angle. The authors decided to incise the tape transvaginally under general anesthesia. An 18 French Foley catheter was inserted. The anterior vaginal mucosa was incised only along the length of the urethra. The vaginal mucosa was sharply dissected off the underlying urethra and toward the peri urethral tunnels. Sharp dissection of the scar tissue under the urethra was reformed until the tape was visualized and palpable. The tape was identified at the proximal portion of the urethra, close to the urethrovesical junction. A 1-cm length piece of urethra was excised from under the urethra, and an immediate release of tension was noted. Three days after the operation, the patient voided without resistance. The voiding volume was more than 300 ml and post void residuals less than 50 ml. Six weeks after incision of the tape, she was completely stress continent. Videourodynamic study revealed no leakage during coughing, good urine flow and no detrusor overactivity. She was satisfied with the outcome.

Discussion

Suburethral slingplasty has become increasingly popular due to its advantage of minimally invasive technique. The meshes (eg. Tension free vaginal tape (TVT), Ethicon; IVS, Tyco) were designed with the pores larger than 75 mm to allow the admission of fibroblasts, collagen, macrophages and blood vessels[6]. With the special design of these prolene tapes, there was less tissue reaction and better elasticity. The overall success rate of IVS was 78 to 81%[1,3] and TVT of 86-90%[4,7,8]. However, there are reports of complications of the incomplete bladder emptying up to 4 months in 4 - 7.5%[9,10]. The authors found only one case of 136 TVTs performed having transient urinary retention. The woman required only self intermittent catheterization for 5 days.

In this referred case, the gynecologist at the private hospital did not have proper training for IVS procedure nor practice under supervision before. This was one of his first 5 cases. So there was a likely chance that he had pulled up the tape too high. The authors also found the inappropitate position of the tape in the present case. The tape was located too close to the proximal urethra instead of the mid urethra.

Fortunately, in cases with urinary retention, after suburethral slingplasty, there were reports that 74-100% of the patients who had undergone partial sling excision remained subjectively free of stress incontinence after the procedure[11-13]. The authors also found a good result after tape incision in the present case, 4 weeks after the tape incision.

It is likely that TVT and IVS procedures will be more widely used. So the complications such as tape erosion; urinary retention and voiding dysfunction (de novo detrusor overactivity) will become more apparent[2-4,7-10].

To avoid or lessen these complications, the authors did agree with the recommendation that the gynecologists must have experience in cystoscopy, be knowledgeable about retropubic anatomy, trained in models before, and should preferably see five suburethral slingplasty procedures carried out by an experienced surgeon and then do five under supervision, before attempting on their own[14].

Conclusion

Based on the findings of the urethral kinking and too proximal of the tape, careful tape pulling to adjust the tension and the correct incision site are important. The authors emphasize the importance of pre-service training before attempting on their own. From an extensive review, the authors believe the present case to be the first case report in Thailand of urinary retention after IVS procedure that required tape incision.

References

1. Falconer C, Ekman-Orderg G, Malmstrom A, Ulmsten U. Clinical outcome and change in connective tissue metabolism after intravaginal slingplasty in stress incontinence women. Int Urogynecol J Pelvic Floor Dysfunct 1996; 7: 133-7.

2. Ulmsten U, Petros P. Intravaginal slingplasty (IVS): an ambulatory surgical procedure for treatment of female urinary incontinence. Scand J Urol Nephrol 1995; 29: 75-82.
3. Petros PP. Medium-term follow-up of the intravaginal slingplasty operation indicates minimal deterioration of urinary continence with time. Aust N Z J Obstet Gynaecol 1999; 39: 354-6.
4. Ulmsten U, Johnson P, Rezapour M. A three-year follow up of tension free vaginal tape for surgical treatment of female stress urinary incontinence. Br J Obstet Gynaecol 1999; 106: 345-50.
5. Summitt RL, Bent AE, Ostergard DR. Suburethral sling procedure for genuine stress incontinence and low urethral closure pressure: a continued experience. Int Urogynecol J 1992; 3: 18-21.
6. Barbalias GA, Liatsikos EN, Athanasopoulos A. Gore-Tex sling urethral suspension in type III female urinary incontinence: clinical results and urodynamic changes. Int Urogynecol J 1997; 8: 344-50.
7. Ulmsten U, Henriksson L, Johnson P. An ambulatory surgical procedure under local anesthesia for treatment of female urinary incontinence. Int Urogynecol J 1996; 7: 81-6.
8. Olsson I, Kroon U. A three-year postoperative evaluation of tension-free vaginal tape. Gynecol Obstet Invest 1999; 48: 267-9.
9. Kuuva N, Nilsson C-G. A nationwide analysis of complications associated with the TVT procedure (abstr). Neurourol Urodyn 2000; 19: 394.
10. Meschia M, Difarotti P, Bernasconi F. Tension free vaginal tape: analysis of outcome and complications in 404 stress incontinence women. Int Urogynecol J 2001; Suppl 2: S24-7.
11. Kammerer-Doak DN, Rogers RG, Bellar B. Vaginal erosion of cadaveric fascia lata following abdominal sacrocolpopexy and suburethral sling urethropexy. Int Urogynecol J 2002; 13: 106-9.
12. Myers DL, LaSala CA. Conservative surgical management of Mersilene mesh suburethral sling erosion. Am J Obstet Gynecol 1998; 179: 1424-8.
13. Young SB, Howard AE, Baker SP. Mersilene mesh sling: short and long term clinical and urodynamic outcomes. Am J Obstet Gynecol 2001; 185: 32-40.
14. Stanton SL. Some reflections on tension-free vaginal tape - a new surgical procedure for treatment of female urinary incontinence. Int Urogynecol J 2001; Suppl 2: S1-2.

รายงานผู้ป่วยที่มีอาการปัสสาวะลำบากภายหลังการผ่าตัดใส่สายคล้องท่อปัสสาวะทางช่องคลอด (IVS): ความจำเป็นของการฝึกอบรมก่อนที่จะให้บริการในผู้ป่วยจริง

สุวิทย์ บุณยะเวชชีวิน, อภิรักษ์ สันติงามกุล

***บทนำ**: การผ่าตัดใส่สายคล้องท่อปัสสาวะทางช่องคลอด (IVS) เป็นการผ่าตัดที่บาดเจ็บต่อเนื้อเยื่อน้อยในการรักษาโรคไอจามปัสสาวะเล็ด การดึงสายเทปมากเกินไปและการวางเทปในตำแหน่งที่ไม่เหมาะสม อาจทำให้เกิดอาการปัสสาวะลำบากที่จำเป็นต้องตัดสายเทปได้*

***ผู้ป่วย**: สตรีไทยอายุ 51 ปี ได้รับการผ่าตัด IVS ในโรงพยาบาลเอกชนแห่งหนึ่ง ภายหลังการผ่าตัด พบภาวะปัสสาวะลำบากซึ่งจำเป็นต้องใส่สายสวนปัสสาวะ เป็นเวลา 20 วัน ผู้ป่วยไปรับการรักษาต่อที่โรงพยาบาลจุฬาลงกรณ์ ในวันที่ 21 หลังผ่าตัด ได้ทำการตัดสายเทป พบว่าวางอยู่ตำแหน่งของคอกระเพาะปัสสาวะแทนที่จะเป็นตำแหน่งกลางท่อปัสสาวะ หลังตัดสายเทป ผู้ป่วยปัสสาวะปกติดีและไม่มีอาการไอจามปัสสาวะเล็ด และยืนยันโดยการตรวจด้วย videourodynamic ที่เวลา 1 เดือน หลังตัดสายเทป*

***สรุป**: การดึงสายเทปตึงเกินไป การใส่สายเทปใกล้กับคอกระเพาะปัสสาวะมากเกินไป หรือการเกิดการเลื่อนของสายเทปอาจทำให้เกิดภาวะปัสสาวะลำบากหลังการผ่าตัด IVS ผู้รายงานพบว่าการตัดสายเทปเป็นวิธีที่ได้ผลในการรักษาภาวะแทรกซ้อนนี้ การฝึกอบรมในหุ่นจำลองและฝึกหัดภายใต้การดูแลของผู้เชี่ยวชาญก่อนที่จะให้บริการในผู้รับบริการเป็นสิ่งจำเป็นเพื่อเลี่ยงภาวะแทรกซ้อนดังกล่าว จากการทบทวนวรรณกรรม พบว่ารายงานนี้เป็นรายงานผู้ป่วยรายแรกที่มีภาวะแทรกซ้อนปัสสาวะลำบากและต้องการผ่าตัดสายเทปหลังจากการรักษาโดยการผ่าตัด IVS*