Transobturatory sling tape and polypropylene mesh sacrocolpopexy in pelvic organ prolaps and occult urinary incontinence

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Abstract

Objective: To assess the efficiency to prevent occult urinary incontinence of the association between polypropylene mesh sacrocolpopexy with transobturator suburethral sling in patients with urogenital prolapse and occult urinary incontinence.

Material and methods. Between 2007 - 2011 we performed in 13 cases of high grade urogenital prolapse associated with occult urinary incontinence (clinically detected- after manual or instrumental reducing of prolapse- and urodynamic confirmed), aged between 42 and 73 years (mean 47.8 years), with an average parity of 3.1 (0-5), transobturatory suburethral sling placement and transabdominal polypropylene mesh sacrocolpopexy.

Results. Over a period of approximately three years were followed 8 patients (these we refer to), the average follow-up was 24.7 months (18-38 months) postoperative continence rate was 87.5 % for occult urinary incontinence (one patient complain of urine loss after surgery).

Conclusions. Application of a midurethral transobturatory sling concomitantly to correction of severe genital prolapse with transabdominally polypropylene mesh sacrocolpopexy is a safe and effective method to prevent the appearance of urinary incontinence after surgery for pelvic organ prolapse with 87.5 % continence success rate against occult urinary incontinence. The combination of both surgeries gives an integral solution to the pelvic organ prolapse and occult urinary incontinence that are frequently associated.

Key words: urinary incontinence, urogenital prolapse, sacrocolpopexy, suburethral sling

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Introduction

Pelvic floor dysfunctions are a major health care problem, affecting millions of women throughout the world. One in every nine American women will undergo surgery for a pelvic floor disorder in her lifetime, with 30% of those women requiring additional surgical procedures for recurrence of the same condition [1]. Estimations from the United States suggest that annually 135,000 women have surgery for urinary incontinence and 200,000 for prolapse [2–4]. It is thought that in the next 30 years due, to the demographic distribution of the population and the increasing prevalence of pelvic floor dysfunction with age the demand for surgery for pelvic floor disorders will increase by 45% [5]. The pathophysiologic bases of occult urinary incontinence have not been completely understood and several hypotheses have been suggested as well as several surgical treatments. Since the first reports from the Ulmsten group [6], tension-free vaginal tape has become one the most commonly performed procedures worldwide due to the ease of performance and high success rates and, to date, several hundred thousand TVT procedures have been performed. Moreover, several devices have been introduced on the market to make the midurethral sling procedures even less invasive, including suprapubic arc (SPARC) sling, intravaginal slingplasty (IVS), transobturator slings, prepubic TVT, and so on [7]. In 1997, Olsen - showed that 11.1% of women reaching 80 years of age had been operated on for prolapse or urinary incontinence, or both conditions, and also that 29.2% of them required reoperation for recurrence. Both prolapse and urinary incontinence are pelvic floor disorders that share the same risk factors. In clinical practice we will observe that damage to the supporting tissues can cause prolapse and urinary incontinence. This damage can occur from overdistension, weakening or rupture by compression. For all these reasons, it is not infrequent to find prolapse in association with urinary incontinence in our patients [6]. When correction of severe genital prolapse is done without having previously evaluated the possibility of coexisting occult urinary incontinence, we may find ourselves with a partially corrected pelvic floor disorder after surgery. This is because the patient has an increased risk of occult urinary incontinence, which will only be evident after prolapse surgery. The occurrence of urinary incontinence after correction of a prolapse can be very frustrating for both the patient and the physician and require another surgical procedure for urinary incontinence. Our patient with pelvic organ prolapse underwent clinical examination with full bladder, reduction of the prolapse manually or by simple valve and is asking to cough to discover urinary incontinence after prolapse reduction. Urodynamic test with prolapse reduction by simple vaginal valve before surgery is always performed to discover occullt urinary incontinence.

Material and methods.

Between 2007-2011 we diagnosed 13 cases of high grade urogenital prolapse associated with occult urinary incontinence (clinically detected after manual or instrumental reducing of prolapse and bladder filling with 300 ml saline solution and ask the pateint to cough- and urodynamic confirmed), age between 42 and 73 years (mean 47.8 years), with an average parity of 3.1 (0-5). In all patients we used a detailed history, a questionnaire to see the impact on quality of life (before and after treatment), gynecological examination, urine culture, urinalysis, ultrasound, urodynamic examination. Women with occult urinary incontinence were operated on for pelvic organ prolapse (transabdominally polypropylene mesh sacrocolpopexy) and a prophylactic midurethral polypropylene tape (TOT) was applied in the same surgical procedure. In other published experiences to detect the presence of occult urinary incontinence in patients with severe genital prolapse, the pessary test has been used successfully [11, 12]. In our country this devices is hard to find it and expensive, so the prolapse is corrected by vaginal insertion of a valve which can be left in place for the urodynamic test and to demonstrate possible urine losses. However, there are also experiences, in which the position of the cystocele was corrected with a pessary and then immediately followed by multichannel urodynamic testing to certify the presence of incontinence, i.e., similar to the procedure followed in our series [7, 8]. The preoperative urodynamic study of patients undergoing surgery for severe prolapse allows occult urinary incontinence to be detected and to classify those in whom incontinence is already evident together with cystocele. The urodynamic study thus helps to plan optimal treatment strategies, which include surgery for correction of the prolapse and a midurethral transobturatory polypropylene sling. The combination of both surgeries in patients who require them allows both problems to be solved at the same time [10]. The use of vaginal valve is a simple and rapid

way to correct prolapse while urodynamic testing is performed, which allows us to simulate the condition of a corrected cystocele. Different studies have demonstrated the presence of occult urinary incontinence in women with severe cystocele, with a prevalence ranging from 30 to 80%. In 2006, Brubaker et al. showed in patients undergoing sacrocolpopexy for genital prolapse that the risk of occult urinary incontinence was reduced when Burch colposuspension was performed concomitantly. In cases of occult incontinence, there are studies showing effectiveness with corrections using the Burch technique, endopelvic fascia plication, and application of TVT [7, 8, 9]. Suburethale sling procedure is well known (not detail) and was made before the placement of the transabdominally polypropylene mesh sacrocolpopexy (mesh implant between vaginal stump remaining after previously hysterectomy or posterior vaginal wall and promontory). The novelty is the combination of these techniques for solving patients in one surgical time. Urodynamic evaluation was made before surgery and postoperatively every 6 months in first year in all patients.

Results

Over a period of approximately three years were followed 8 patients (these we refer to), the average follow-up was 24.7 months (18-38 months) postoperative continence rate was 87.5 % for occult urinary incontinence (one patient complain of urine loss after surgery). Study also showed that one patient had emptying dysfunction and another two patients showed de novo bladder iritative symptoms (de novo urgency). Three patients required long term bladder catheterization (more than 3 days) after surgical correction of the prolapse. The average of hospitalization was 6.3 days (4-7 days). There were no bleeding or infectious complications in our patients (table 1).

Table 1. *The characteristics of our patients*

Polypropylene mesh sacrocolpopexy/ sling TOT	**13**
Hospitalization	6.3 days (4-7 days)
Surgical time	110.6 min. (90-185 min.)
Bladder catheterization	2.4 days (1-7 days)
Bleeding	127.5 ml (70-305 ml)
De novo urgency	2
Continence rate	87.5 %

Discussion

This kind of association is an effective technique for patient with high grade urogenital prolapse and occult urinary incontinence. In the recent past for this pathology surgeons performed Burch procedure, anterior colporrhaphy near to different type of hysteropexy and the results for urinary incontinence were very poor (continence rate between 30 and 50 %). In our series the continence rate was 87.5 %. Anticholinergic medication was administered for one month postoperatively for the improvement of urgency. All patients received postoperative long term vaginal oestrogenotherapy.

Conclusion

The preoperative urodynamic test with correction of severe genital prolapse by a simple vaginal valve is an efficient method to detect occult urinary incontinence. This allows planning a prophylactic incontinence surgery to prevent previously undiagnosed asymptomatic incontinence from being detected postoperatively. In our series, application of a midurethral transobturatory sling concomitantly to correction of severe genital prolapse with transabdominally polypropylene mesh sacrocolpopexy is a safe and effective method to prevent the appearance of urinary incontinence after surgery with 87.5 % continence success rate. The combination of both surgeries gives an integral solution to the pelvic organ prolapse and occult urinary incontinence that are frequently associated.

References:

1. Olsen AL, Smith VJ, Bergstrom JO, Colling JC, Clark AL. *Epidemiology of surgically managed pelvic organ prolapse and urinary incontinence.* Obstet Gynecol 1997;89:501–6.
2. Waetjen LE, Subak LL, Shen H, et al. *Stress urinary incontinence surgery in the United States.* Obstet Gynecol 2003;101: 671–6.
3. Boyles SH, Weber AM, Meyn L. *Procedures for pelvic organ prolapse in the United States, 1979–97.* Am J Obstet Gynecol 2003;188:108–15.
4. Brown JS, Waetjen LE, Subak LL, ThomDH, Van den Eeden, Vittinghoff E. *Pelvic organ prolapse surgery in the United States, 1997.* Am J Obstet Gynecol 2002;186: 712–6.
5. Luber KM, Boero S, Choe JY. *The demographics of pelvic floor disorders: current observations and future projections.* Am J Obstet Gynecol 2001;184:1496–503.
6. Ulmsten U, Henriksson L, Johnson P, Varhos G. *An ambulatory surgical procedure under local anesthesia for treatment of*

female urinary incontinence. Int Urogynecol J 1996;7:81–6
7. Gordon D, Gold RS, Pauzner D, Lessing JB, Groutz A. *Combined genitourinary prolapse repair and prophylactic tension-free vaginal tape in woman with severe prolapse and occult stress urinary incontinence: preliminary results.* Urology 2001; 58:547-50.
8. Bump RC, Mattiasson A, Bo K, Brubaker L, DeLancey JOL, Klarskov P, et al. *The standardization of terminology of female pelvic organ prolapse and pelvic floor dysfunction.* Am J Obstet Gynecol 1996;175:10-7.
9. Bergman A, Elia G. *Three surgical procedures for genuine stress incontinence: five years follow-up of a prospective randomized study.* Am J Obstet Gynecol 1995;173:66-71.
10. Borstad E, Rud T. *The risk of developing urinary stress incontinence after vaginal repair in continent women: a clinical and urodynamic follow-up study.* Acta Obstet Gynecol Scand 1989;68:545-9.
11. Klutke JJ, Ramos S. *Urodynamic outcome after surgery for severe prolapse and potential stress incontinence.* Am J Obstet Gynecol 000;182:1378-81.
12. Drutz HP, Alnaif B. *Surgical management of pelvic organ prolapse and stress urinary incontinence.* Clin Obstet Gynecol 1998;41:786-93.