

Original Article

Placard-shaped *in situ* vaginal wall sling for the treatment of stress urinary incontinence

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Purpose: To evaluate the efficacy of a simple and economic procedure using a placard-shaped *in situ* anterior vaginal wall sling for the treatment of stress urinary incontinence, with or without cystocele repair.

Methods: From July 2003 to July 2004, 14 female patients (mean age 45.21 years, range 37–57) were operated upon because of stress urinary incontinence (SUI) with the placard-shaped *in situ* anterior vaginal wall sling technique. The average follow-up period was 11 months (range 4–14.5 months). Twelve patients were operated primarily with this technique and only two patients had undergone previous surgeries for the treatment of SUI (one patient had had two previous surgeries and the other had had one previous surgery). In all patients urethral hypermobility or/and bladder prolapse were observed. Filling cystometry showed sufficient bladder capacity with no detrusor overactivity.

Results: No urinary retention was observed in any patient in the postoperative period. While 11 patients have 100% cure of incontinence, three patients started leakage of urine after 1–2 months after the operation (one patient had been operated upon twice before (and who was diabetic and obese) and two patients were primarily repaired by our technique). In two patients, suprapubic tenderness and redness were observed, and were treated by oral antibiotic and anti-inflammatory drugs.

Conclusion: The placard technique is simple, cost-effective and has low incidence of urinary retention in the post-operative period. The success rate seems to be satisfactory and it can be applicable to patients who are primary cases of SUI with average body mass index. Yet longer term follow up and larger number of patients are needed before final conclusion can be drawn.

Key words placard technique, stress urinary incontinence, vaginal sling.

Introduction

Genuine stress incontinence is invariably associated with weakness of pelvic floor support, permitting hypermobility of the vesicourethral segments with/without bladder prolapse, which in turn impairs the efficacy of the sphincteric musculature. The basic principles of surgical treatment are to prevent the abnormal descent of urethra that occurs during increases in abdominal pressure and to provide a backboard against which the urethra is compressed during increases in abdominal pressure. Although the tension-free vaginal tape (TVT) procedure offered an attractive and simple treatment modality, there is evidence to support the concept of utilizing the anterior *in situ* vaginal wall sling for the treatment of SUI.^{1,2}

Materials and methods

Fourteen patients with a mean age of 45.21 years (range 37–57) were operated due to genuine stress incontinence, using the placard vaginal sling technique, between July 2003 and July 2004. Gynecologic examination revealed

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urethral hypermobility with or without cystocele (one patient had grade III cystocele, one patient had grade I cystocele and four patients had grade II cystocele), and urodynamic study showed sufficient capacity of the bladder with no detrusor overactivity. Out of the study group, two patients had had prior surgeries due to SUI (one patient underwent two previous surgeries by TVT and retropubic approach; the other patient had a retropubic approach). In the patient who had previously undergone TVT, the tape was left in its place because it was fibrotic. One patient with a history of previous surgery had an unstable bladder during urodynamic test, so anticholinergic therapy was given for 1 month and a control urodynamic test was found to be normal. Patients were followed up for a mean period of 11 months (range 4–14.5). The operation was done under spinal or general anaesthesia in lithotomy position. The placard-shaped incision is done at the anterior wall of the vagina (Fig. 1), then the dissection is done at this incision. The dissection at the lateral side of the *in situ* sling was done until a finger could be felt easily from the suprapubic area. Cauterization was avoided in the vaginal region. At the lateral side of the placard incision, two suspension sutures were taken (Fig. 1) and passed lateral to the urethra.

Small transverse incision of 4–5 cm was done over the symphysis pubis without cutting the rectus fascia. Before

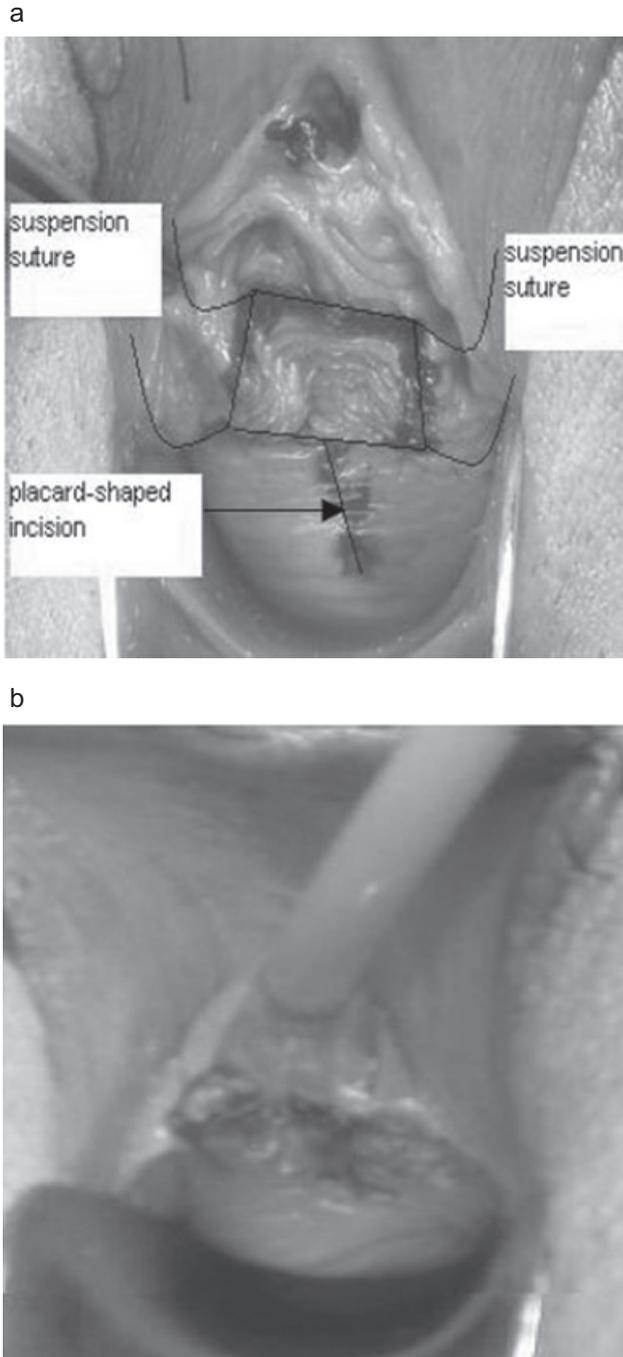


Fig. 1 (a) Shows placard-shaped incision at the anterior vaginal wall with two lateral suspension sutures in a patient with SUI and cystocele. (b) Early postoperative view of the same patient reconstructed by placard technique with 18 F Foley catheter.

fixation of the suspension polypropylene sutures with the periosteum of the symphysis pubis, the bladder was filled with 250–300 mL isotonic solution and manual pressure was applied to the suprapubic area to define the Valsalva leak-point pressure, and thus adjust the tension of sutures. The degree of tension of the suspension sutures is the key

point in all treatment modalities of SUI. The placard incision edges are sutured tightly over the placard shaped *in situ* sling, thus increasing the background support and the length of the urethra. Cystoscopy was used to verify the integrity of bladder. All patients were hospitalized for 1 day. A Foley catheter of 18 F was left for 5–10 days. Catheterization period was determined according to postoperative discomfort caused by catheter, presence of cystocele reconstruction, extensive dissection and the improvement in the clinical situation of the patient in the postoperative period. After catheter removal, post void residual urine was measured using abdominal real time ultrasonography after micturition. Vaginal sponge was placed at the end of operation and removed 24 h after the operation. Cystocele with various degrees (grade I–III) were observed in six patients, and were reconstructed through the operation. The operation time ranged from 45 to 90 min. In the postoperative period the patients were asked to avoid sexual intercourse and carrying heavy weights for a period of 3 months.

Results

No urinary retention was observed during the postoperative period. The results were satisfactory in 11 patients and incontinence was cured 100%, while two patients who were operated upon for the first time had resumed the incontinence within 1–2 months in the postoperative period. Also one patient who had two previous operations (and who was diabetic and obese) did not benefit from the operation. If we exclude this patient, as the chance of her benefiting from any kind of incontinence reconstruction is very low, the success rate of placard technique (11/13, 84.6%) is acceptable (without excluding this patient the success rate is 11/14, 78.6%). Two patients had pain and tenderness in the suprapubic area, and were treated by antibiotic and non-steroidal anti-inflammatory drugs. As the incision in the suprapubic was small and was subcuticularly closed, it did not create any cosmetic problem.

Discussion

The current trend in surgical correction of female SUI, favors the pubovaginal sling over traditional abdominal colposuspension technique, due to the results of the sling in terms of efficacy, morbidity and hospital stay.³ TVT is introduced as simpler technique than other sling techniques, although there are some papers which state that there is no clinically significant difference between both procedures.^{4,5} Urinary retention and cost-effectiveness are important considerations of this procedure.^{6,7} The placard technique is mini-invasive, cheap, and with satisfactory rate of success. The hospitalization period was short (1 day) and postoperative complications related to surgery are clinically insignificant. In contrast to that of TVT, even if urinary retention occurs in the placard technique, dilatation of the urethra gives good results, while in TVT, fibrosis of the tape around urethra sometimes make it difficult to get rid of difficulty in urination only by urethral dilatation. The tight closure of the placard-shaped incision seems to

be useful in supporting the background of the sling and lengthening the urethra, thus improving the success rate of the procedure. In the same way, backing vaginal sponge with betadine and antibiotic cream decreases the percentage of vaginal infections, and supports the sling in the early postoperative period. Moreover, keeping the patient away from straining and vigorous sexual contact for 3 months in the postoperative period helps in improving the success rate. As a result we believe that in all surgical treatment modalities of SUI, the experience of the surgeon and the following of the surgeon's recommendations by the patients play important roles in the outcome of the operation.

In conclusion, this procedure can be an accepted treatment modality for patients with SIU, especially for patients with primary cases of SUI and an average body mass index. The advantages of this technique include its simplicity, low complication rates, cost-effectiveness and good rate of success. However long-term studies should be carried out with a large number of patients for further evaluation of this procedure.

References

- 1 Appell RA. In situ vaginal wall sling. *Urology* 2000; **56**: 499–503.
- 2 Viseshsindh W, Kochakarn W, Waikakul W, Roongruangsilp U, Siripornpinyo N, Viseshsindh V. Randomized controlled trial of pubovaginal sling versus vaginal wall sling for stress urinary incontinence. *J. Med. Assoc. Thai.* 2003; **86**: 308–15.
- 3 Appell RA. The use of the bone anchoring in the surgical management of female stress urinary incontinence. *World J. Urol.* 1997; **15**: 300–5.
- 4 Abdel-Fattah M, Barrington JW, Arunkalaivanan AS. Pelvic pubovaginal sling versus tension-free vaginal tape for treatment of urodynamic stress incontinence: a prospective randomized three-year follow-up study. *Eur. Urol.* 2004; **46**: 629–35.
- 5 Tseng LH, Wang AC, Lin YH, Li SJ, Ko YJ. Randomized comparison of suprapubic arc sling procedure vs tension-free vaginal taping for stress incontinent women. *Int. Urogynecol. J. Pelvic Floor Dysfunct.* 2004; **16**: 230–235.
- 6 Kilonzo M, Vale L, Stearns SC *et al.* Costeffectiveness of tension free vaginal tape for the surgical management of female stress incontinence. *Int. J. Technol. Assess. Health Care* 2004; **20**: 455–63.
- 7 Lukacz FS, Luber KM, Nager CW. The effects of the tension-free vaginal tape on voiding dysfunction: a prospective study. *Int. Urogynecol. J. Pelvic Floor Dysfunct.* 2004; **15**: 32–8.