

# Modified and Simplified Stamey's Procedure for Stress Urinary Incontinence: A Comparative Clinical Study

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## Abstract

**Background:** The purpose of this clinical study was to assess whether a modified and simplified Stamey's procedure for stress urinary incontinence (SUI) has better effects when used for female SUI patients.

**Materials and Methods:** Randomized prospective studies were prepared performed in 30 patients with the SUI percutaneous vesical neck suspension. Technique was similar to advocated by Parra and Shaker (1990) except that no suprapubic catheter was used, and multiple knots were applied and central buttress we have used single stand of proline suture. The results were recorded.

**Results:** There were significant differences in urinary incontinence results. The 28 patients could void without leak. In 2 patients per urethral catheter had to be re-introduced and maintained for 10 days before they could void without retention.

**Conclusion:** Simplification and modification of standard stamey's procedure for stress urinary continence in females is much easy with comparatively better results are achieved.

**Key words:** Incontinence, Proline suture, Stamey's procedure, Stress urinary incontinence

## INTRODUCTION

The definition of stress urinary continence a condition of urine while straining, e.g., during coughing, sneezing, laughing, lifting heavy object, i.e., on raising intra-abdominal pressure.

Most of what we know about urinary continence in the normal female is from what we have learned about stress urinary incontinence (SUI). For this reason, plus the fact that SUI is very common, most of the emphasis in this chapter is on SUI, but the urologist should remember that

much of the information is applicable to patients with total urinary incontinence from widely diverse causes such as pelvic fractures, radiation incontinence, and iatrogenic surgical incontinence.

The percutaneous vesical neck suspension was first introduced by Pereyra but Stamey's established the technique for management of SUI. The original technique has been modified from time to time by various authors (Cobbs and Ragde, Gitte and Loughlin, Parra and Shaker) in attempting to make it similarly and easy.<sup>1-4</sup> We have performed this operation in a modified way. In variance to previous techniques we have used a single proline suture buttress with stay to one side suspension suture which was removed vaginally just by pulling out after voiding. In two cases of retention one side suspension suture was cut vaginally by pulling stay suture.

The aim of the study was to improve and compare by modification and simplification standard Stamey's

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procedure by not using suprapubic catheter and using single strand of proline and stay to the suspension suture.

## MATERIALS AND METHODS

The protocol was approved by the local Ethics Committee and written informed consent was obtained from each patient. A total 30 patients of stress incontinence have undergone this procedure after thorough evaluation. Their age ranged from 28 to 60 years. 25 patients developed stress incontinence in post-menopausal period, 3 following hysterectomy and 2 had their symptoms following delivery. Of 30 patients, 2 had Grade I, 23 Grade II and 5 had grade stress incontinence. Uterine prolapse cases were not included in this study. Urodynamically, they were evaluated.

### Operative Technique

As a standard technique, the patient is kept in lithotomy position under epidural or spinal anesthesia. A 16 F Foley's catheter is introduced and balloon is inflated. Two small suprapubic incisions are made on each side of midline 1 cm above pubic symphysis. Two Stamey's needles are introduced through one of suprapubic incision at a distance of 1 cm from each other and brought out lateral to bladder neck into vagina. Traction on Foley's catheter and finger palpation aids in recognizing and guiding the tip of the needle. The Foley's catheter is now removed and cystoscopy is performed to see that the needles are not passing through the lumen or the wall of bladder.<sup>5,6</sup>

In the center of number I proline suture 9-10 knots are made as shown in Figure 1. The ends of proline suture are threaded through two Stameys needles, which are similar procedure, are performed on the other side. The bladder is now distended with saline till urine leaks out. Both the sutures are pulled up till the leak stops even on putting pressure over the bladder suprapubically. Cystoscopic examination is performed before tying the sutures to see that the bladder neck is closed and if found satisfactory, the sutures are tied Figure 2. On one side of suspension suture a mersilk thread is put vaginally with loose knot. On 3<sup>rd</sup> post-operative day catheter is removed and voiding trial is given. Vaginally mersilk is just pulled out if she voids normally.

## RESULTS

All the patients withstood the operation well without any immediate post-operative complications. Out of 30, 28 patients could void without leak. 2 patients could not void in immediate post-operative period per urethra catheter was put for 10-day. Subsequently, they also voided without leak. One patient there was retention and vaginal sling thread was pulled and suspension suture of one side was just cut and

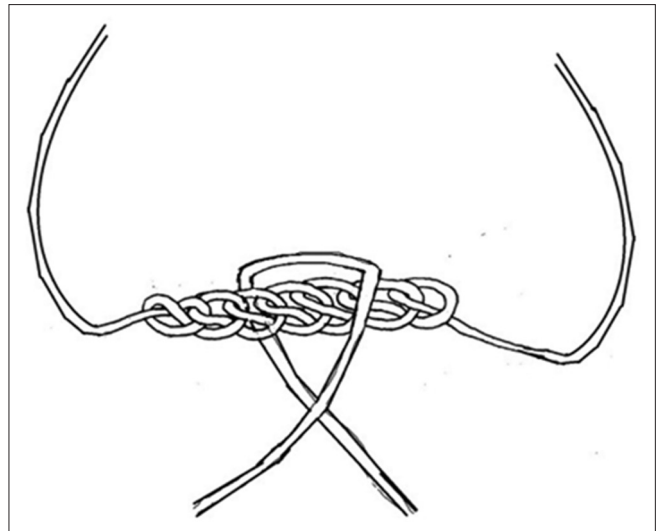


Figure 1: Central buttress suture with vaginal knot



Figure 2: Stamey's suture before being tied with vaginal sling

later she voided well. Delayed recurrence was seen in one patient. She presented with leak after 1-year.<sup>7-9</sup>

Table 1 depicts grading of cases of present study as given by Ingelman-Sundberg.

Clinical grading (Ingelman-Sundberg):

- Grade I: When leakage or urine occurs on straining
- Grade II: When incontinence occurs following abrupt movement
- Grade III: When leakage occurs on just getting up from bed or even in lying position in bed.

Clinical features like leakage of urine is the sole presentation, leakage on stress, Bonney's test, associate prolapsed are presented in Table 2.

Complications are presented in Table 3 like wound infection suprapubic, retention of urine, urinary incontinence.

**Table 1: Grading of cases**

Grade	Cases
I	2
II	23
III	5

**Table 2: Clinical features**

Clinical assessment	Number of cases
Leakage of urine is the sole presentation	8 cases
Leakage on stress	22 cases
Bonney's test	Positive
Associate prolapsed	Not included

**Table 3: Complications**

Post operative complication	No: of cases
Wound infection suprapubic	1 case diabetic - anti-biotics given
Retention of urine	2 cases
Urinary incontinence	1 case after 1-year

## DISCUSSION

The results of present study demonstrated that the modifications and simplification of procedure are excellent and a control stay on suspension suture on one side. The results are reproducible.

### Advantages and Comparison with Other Methods

In classical Stamey's procedure vaginal incision is given and Dacron or Gortex buttress is used for pubovaginal suspension. Gittes and Loughlin modified the technique advocating no vaginal incision and instead of Dacron buttress they took 3-4 bite through vaginal wall.

Parra and Shaker further modified the procedure and their technique was same as Gittes and Loughlin except instead of vaginal suture, they advocated double barrel knot. It requires two stands of proline sutures and cut ends of each remains inside the vagina. We have further modified and used single stand of proline suture with buttress made in the center with specially designed knots which is much easier to make. There is no fear of slippage of ligature which is a possibility in Parra and Shaker technique as well as there are no free cut ends of proline sutures in the vagina which may be troublesome to the patients.<sup>5,10,11</sup>

In our method, we have applied vaginal sling to suspension suture of one side so that in case of retention one side can be cut. This helps in controlling or cutting suspension suture if it is very tight. Without this suspension thread it is very difficult to cut the vaginal sling, in lithotomy position and no anesthesia is required.

In SUI, the suspension of bladder neck by proline suture works by incorporation of suture into tissue and subsequent fibrous band formation on either side of the bladder neck. We have used a centrally knotted single strand of proline suture that would act as a buttress support in pulling the bladder neck when suture will be tied. We have used single Stamey's needle punctured twice suprapubically with 1 cm spacing. We have used vaginal sling for cutting bladder neck suspension suture in case there is retention. Our results with this technique are comparable with others.

## CONCLUSION

On the basis of our current study modification and simplifications has an advantage over standard Stamey's suspension for female stress incontinence in cases.

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