125: A two para-median incisions versus the standard longitudinal incision of trans-obturator tape procedure for management of stress urinary incontinence

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Abstract

Mid urethral sling remains the definitive management of stress urinary incontinence (SUI). In trans-obturator tape (TOT), tension and location of the tape are directly related to the postoperative clinical outcome through restoring the urethral support. Reappearance of symptoms of SUI has been related to tape migration. We aimed to increase the success rate of TOT procedure by minimizing the risk of tape migration.
We conducted a prospective randomized clinical trial involving 90 patients with SUI, they were divided into 2 groups according to the two different surgical techniques. The clinical outcomes were analyzed at 3,6 and 12 months after surgery as well the tape location was assessed using trans-labial ultrasound to assess the migration rate and its clinical impact. Other perioperative outcomes like operation duraiton, postoperative pain, pelvic pain, tape erosion and the appearance of DiNovo urgency were evaluated.
Among the 90 patients enrolled in our study, 48 patients underwent the classical surgical technique representing group1 and 42 patients underwent the two paramedian incisions representing group 2. Continence at 3 months in group 1 was 70.8%, 22.9% showed improvement in symptoms while only 3 cases representing 6% of case showed no improvement while in group 2, cure rate was 78.6%, 16.7% showed improvement in symptoms while only 2 cases representing 4% showed no improvement. 41.1% of cases showed tape migration either proximal or distal by trans-labial ultrasound in group 1 resulting in recurrence rate of 25% of cases, on the other hand no migration was noted in group 2 up to 12 months postoperative.
We strongly believe that this type of incision provides an island of tissues proximal and distal to the tape that allow more stabilization and less migration of the tape which enhance the success rate of the procedure, minimizing recurrence of symptoms.

Introduction

Different treatment modalities are available ranging from lifestyle modification, pelvic muscle training, medications up to surgery. Mid urethral sling operations remains the definitive therapy for SUI that involves restoring the urethral support which are performed with varies surgical techniques using different types of mechs [1] [2].
In trans-obturator tape (TOT) both tension and location of the tape are related to the surgical outcome where recurrence of symptoms are due to tape migration in more than half of the cases, in spite of being initially placed at mid urethral zone that usually occur after 1 year [2], this could be assessed by trans-labial ultrasound.
We aim through our study to increase the success rate of TOT by decreasing the incidence of tape migration by using a new surgical technique of 2 paramedian incisions that allow tape stabilization with less dissection along the urethra versus the standard procedure using vertical incision.

Methods and Materials

90 patients were selected for our study, complaining of genuine stress incontinence between January 2012 and February 2014 at urology department, Ain-shams University hospitals. Those patients were randomly allocated into two groups using sealed envelopes, patients were blinded to the type of intervention, informed consent were obtained for all patients prior to the surgery, 48 patients underwent the classical TOT procedure (group 1) and 42 patients underwent 2 paramedian vaginal incisions (group 2). Women with neurological disease, pelvic organ prolapse, previous urethral or pelvic floor surgery were excluded.
In group 1, a classical vertical incision was done proximal to external urethral meatus with dissection along the axis of the urethra till the mid urethral zone that is identified by palpating the urethral catheter balloon through the vaginal at the bladder neck, while in group 2, 2 paramedian incisions were done 1cm long in the anterior vaginal wall 2 cm apart parallel to the urethra till identification of the mid urethral portion, creating a tunnel between the 2 incision 1 cm wide where the tape will be placed, this technique provides an island of tissues proximal and distal to the tape that allow more stabilization and less migration (figure 1). The rest of the procedure is the same as the standard procedure of Trans-labial US Technique is the investigation of choice for tape evaluation regarding urethral position, the urethral tape can not be assessed by X-ray or MRI but could be visualized by ultrasound. (figure 2).

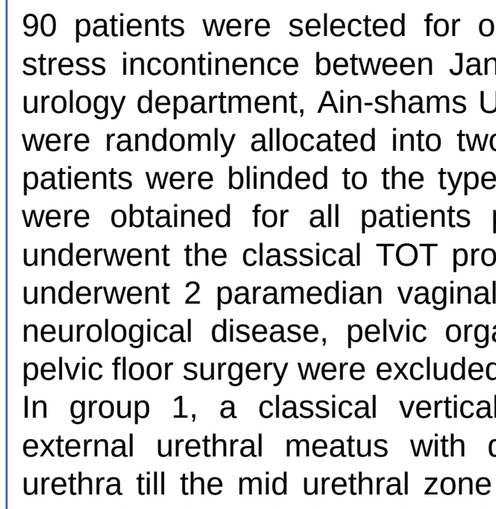

Figure 1.: tunnel created

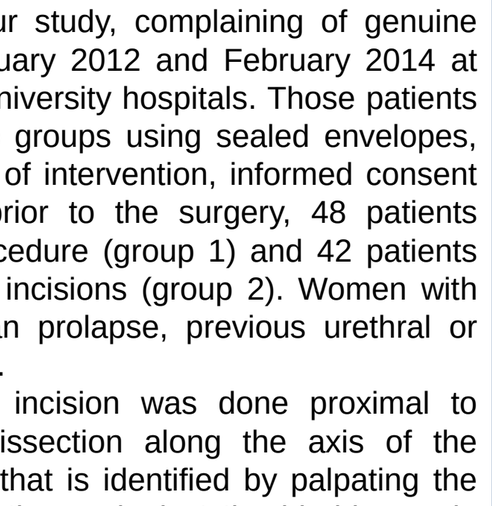

Figure 2.: Trans-Label U/S showing the tape

Results

90 patients underwent surgical intervention for SUI randomly allocated into 2 groups, where 48 patients underwent the classical repair representing group 1 and 42 patients underwent the 2 paramedian incisions technique representing group 2, the mean age was 55 and 56 years in group 1 and 2 respectively, body mass index was 34 kg/m2 in both groups. The mean operative time was 33.46 ± 4.64 minutes for group 1 and 42.98 ± 10.38 minutes in group 2, there is no considerable blood loss or any intraoperative complications in both groups.
The continence after surgery was assessed by cough test after 3,6 and 12 months after surgery. Continence at 3 months in group 1 was 70.8%, 22.9% showed improvement in symptoms while only 3 cases representing 6% of case showed no improvement while in group 2, cure rate was 78.6%, 16.7% showed improvement in symptoms while only 2 cases representing 4% showed no improvement, after 12 months 6 cases in group 1 showed recurrence of symptoms compared to 1 case in group 2 representing 10% and 2% respectively while the cured rate showed no change over 12 month of follow up as shown in the following table.
No post-operative urinary retention was noted in our patients in both groups, DiNovo urgency was shown in 10 cases of group 1 and 3 cases in group 2 representing 20% and 7% respectively, only one case of vaginal erosion was encountered in group 1 after 2 month of surgery that required tape removal.

		Standard technique	**2 paramedian incisions**
		No. = 48	**No. = 42**
Continence at 3 months	No improvement	3 (6.3%)	2 (4.8%)
	Improved	11 (22.9%)	7 (16.7%)
	Cured	34 (70.8%)	33 (78.6%)
Continence at 6 months	No	3 (6.3%)	2 (4.8%)
	Recurrence of symptoms	5 (10.4%)	0 (0.0%)
	Improved	6 (12.5%)	7 (16.7%)
	Cured	34 (70.8%)	33 (78.6%)
Continence at 12 months	No	3 (6.3%)	2 (4.8%)
	Recurrence of symptoms	5 (10.4%)	1 (2.4%)
	Improved	6 (12.5%)	6 (14.3%)
	Cured	34 (70.8%)	33 (78.6%)
DiNovo urgency	No	38 (79.2%)	39 (92.9%)
	Yes	10 (20.8%)	3 (7.1%)

Discussion

The curative effect of the sling procedures depends mainly on the mechanical compression on the urethra and narrowing the gap between the symphysis pubis and the tape, as well the tape location relative to the urethra especially in the middle portion of the urethra which is important for the continent mechanism[3]. Based on this study, our new technique showed no tape migration compared to 40% migration rate in the standard technique, 25 % of the cases that showed recurrence of symptoms could be attributed to tape migration especially distal migration. Postoperative urgency was seen clinically correlated to tape placement in the proximal urethra and near the bladder neck.
Tape location was evaluated by ultrasound in previous studies that showed variable positioning of the tape, it is believed that proximal placement of the tape is associated with a DiNovo urgency [4], Bougusiewicz et al. 2014, evaluated 141 patient underwent TOT and concluded that the highest failure rate was associated with proximal placement of the tape and the optimum site of placement to be at the middle and distal portion of the urethra [15], in our study distal urethral migration showed higher recurrence rate while proximal placement was associated with higher rate of urgency.
Yang et al.2012, concluded that tape outside the middle portion of the urethra is associated with higher rate of urgency and other voiding dysfunction. Pirtea et al. 2015, evaluated 51 patients underwent TOT placement with a transverse incision versus the longitudinal aiming for more stabilization of the tape, their technique showed more stabilization rate compared to the standard technique with 82.1% of cases using technique with less dissection along the urethra [5], we adopted the same principle with a new surgical technique that showed no migration of the tape.

Conclusions

Tape migration was associated with recurrence of symptoms especially in distal migration of the tape and appearance of DiNovo urgency in some cases of proximal tape migration.
We strongly believe that this type of incision provides an island of tissues proximal and distal to the tape that allow more stabilization and less migration of the tape which enhance the success rate of the procedure, minimizing recurrence of symptoms.

References

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