

# PREDICTORS OF SUCCESSFUL OUTCOME OF TRANS OBTURATOR VAGINAL TAPE (TOT) SURGERY AND ITS EFFECT ON FEMALE SEXUAL FUNCTION

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## ABSTRACT

### INTRODUCTION

To evaluate predictors of successful outcome of trans obturator vaginal tape (TOT) surgery and its effect on female sexual function

**METHOD:**Total 59 patients with Stress Urinary Incontinence underwent TOT repair using both “inside out” and “outside-in” technique. All patients were sexually active in the previous 6 months. Patient were compared before surgery and 6 months after surgery using :Patient global impression of improvement <PGI-I>, International consultation of incontinence questionnaire <ICIQ>, Urogenital distress inventory <UDI 6>, Female sexual Index Questionnaire <FSFI>, Patient perception of intensity of urgency scale <PPIUS>

### RESULT AND DISCUSSION

Out of 59 patient, 35 female were pre menopausal and rest 24 were post-menopausal. Mean age was 46.49 yrs of female undergoing surgery. Patients had SUI for 25.42 months before they decided to undergo surgery . Out of 59 patient , 38 patient cured (ICIQ=0 ), 18 improved (ICIQ <12), 3 had no improvement. Female sexual function improved overall and in all domains , according to FSFI scoring . In long term three patient had mesh erosion and underwent mesh release or excision.

### CONCLUSION

Trans obturator tape insertion for stress urinary incontinent patient has good success rate and factors like young age, less severity of urgency, milder grade of stress incontinence , decrease time gap between starting of symptoms and treatment , parity , lack of chronic co morbid condition had favorable effect. Patient had improvement in all domains of sexual function in both pre and post menopausal group.

**Key words:** Transobturator tape–stress incontinence–mesh–female sexual function–TOT complication

## 1 INTRODUCTION

Urinary incontinence (UI) is defined as the “complaint of involuntary leakage of urine” by the International Continence Society. Stress urinary incontinence (SUI) is condition with complaints of involuntary loss of urine during physical activity.

Stress incontinence (SUI) accounts for around 50% of total incontinence affecting women [1]. TOT (trans obturator tape) is most popular and effective surgical treatment for stress urinary incontinence. Though highly successful in treating the incontinence , there are various patient related, procedure related and other co morbid factors which effects the success and post operative complication of TOT surgery

Impact of TOT surgery on female sexual function is controversial. In literature, the effect of surgery varies between

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improvement, no change, or even deterioration of female sexual function [2].

There is still a paucity of data on the predictors of successful TOT surgery in urinary incontinence and its effect on female sexual function. Thus, in the present study we evaluated the TOT procedure for the treatment of SUI and its effect on female sexual function.

## 2 MATERIAL AND METHOD

This study was conducted in Government Medical College, Kozhikode from Sept 2017 to September 2019. All patients with stress urinary incontinence who underwent TOT placement surgery was included in the study. The diagnosis of stress incontinence was made clinically. Clinical status of patient and impact of surgery on incontinence and sexual function was evaluated with help of following questionnaire : Patient global impression of improvement <PGI-I>, International consultation of incontinence questionnaire <ICIQ>, Urogenital distress inventory <UDI 6>, Female sexual Index Questionnaire <FSFI>, Patient perception of intensity of urgency scale <PPIUS>

Patient with following condition were excluded from study :Women with detrusor over activity; mixed UI, in which urgency was predominant.,Grade 3 or 4 pelvic organ prolapse, Previous UI or prolapse surgery, Neurological disorders, Active vaginal infection, Female genital system malignancy and previous pelvic irradiation.

The data was tabulated and analysed using Statistical Package for the Social Sciences (SPSS\_ version 16)Categorical data was presented as numbers and percentages, whilst quantitative data are shown as means± standard deviations (SDs) and ranges. The chi-squared test was used to analyse categorical variables. A two-sided P < 0.05 was considered to indicate statistical significance.

## 3 RESULT

In total 59 patients were part of study 35 were pre menopausal and rest 24 were post menopausal . Age of patient was between 36 to 62 years (mean 46.49 years)

42 cases (71.1%) were of Stamey grade II stress incontinence followed by grade I (12cases, 20.33%) and grade III (5 cases, 8.47 %). Parity of patient undergoing TOT insertion ranged from 1 to 8 , mean of 2.67. Out of 59 , 12 patients underwent LSCS at least once . Patient duration of symptoms ranged from 5 months to 60 months , with average of 25.42 months.

According to Patient perception of intensity of urgency scale (PPIUS) :Preoperative assessment of symptoms revealed 48 patients had no urgency,6 patient had mild urgency, 5 patient has moderate urgency

Mean operative time was 28 minutes. Post operative stay was mean of 3.2 days

Complication in post operative period in our study comprised of UTI (n=8, 13.5%), febrile episode (n=4, 6.7%),

**Table 1. Patient profile**

Variable	
Urgency	
No	48
Mild	6
Moderate	5
Stress grading Stamey	
I	42
II	12
III	5
Cough test	
Negative	0
Positive	59
ICIQ mean, (SD)	14.7(4.4)

22 cases(37%) had mild to moderate voiding dysfunction, which was managed conservatively and two cases had urinary retention , which was managed by re catheterization. Two patients (3.3%) complained of thigh pain in post operative period. In follow up period three patients had mesh erosion and underwent mesh excision.

Post operative scoring revealed, Cured patient were (ICIQ=0): 38 (64%) while other had Improved (ICIQ<12): 18(27%) and 3 (5.08%) patient has no improvement

Based on Patient global impression of improvement (PGI):Result obtained were Very much better :28, Much better :19, Little better: 9, Little worse: 2, Much worse: 1, Very much worse : 0

**On evaluation of patient with best result ( ICIQ=0 ) (N=38)**

Mean age was 42.3yrs and time period before surgery was 17.3 months while mean Parity was 2.2 . Out of 38 patients, history of surgery was present in six. Thus patient with less age, less time gap between onset of symptoms and less parity had better outcome of TOT surgery.

**Questionnaire Scoring :**

**Female sexual function evaluation :**

## 4 DISCUSSION

In our study we had 38 females (64%) as cured (ICIQ =0) and 18 females (27%) as improved (ICIQ less than 12). Cured rate from other studies (3,4,5) has been in similar range , reaching upto 85%. Complication rate are less and are mostly managed conservatively and even the most dreaded complication of mesh erosion occurred in 3 patients only.

On evaluation of female with maximum benefit after TOT insertion (n=38) ,having ICIQ =0, these 38 female had mean parity of 2.2, which was less than mean of 2.67. Mean age of these females were 42.3 yrs as compared to mean of 46.49yrs in rest of females. None of these 38 females had long standing chronic disease like DM, HTN . The grade of mean SUI was less compared to rest of females and only 6 had previous history of surgery and 3 had mild urge incontinence. Thus we concluded patient of younger age, less parity, lack chronic disease , lesser grade of stress incontinence and absence or minimal urgency component

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**Table 2. UROGENITAL DISTRESS INVENTORY –SHORT FORM (UDI-6)**

	PRE OPERATIVE (MEAN) (SD)	POST OPERATIVE (MEAN) (SD)	P value
Frequency of urination	1.03 (0.84)	0.88 (0.61)	0.27
Feeling of urgency	0.64 (0.63)	0.84 (0.59)	0.078
Stress incontinence	2.8 (0.74)	0.67 (0.64)	<0.001
Leakage	2.57 (0.64)	0.66 (0.65)	<0.001
Difficulty in urination	0.86 (0.67)	0.74 (0.62)	0.315
Lower abdominal pain	0.81 (0.70)	0.74 (0.62)	0.56
<b>TOTAL</b>	<b>8.79 (2.46)</b>	<b>4.57 (2.75)</b>	<b>&lt;0.001</b>

**Table 3. FSFI SCORING**

FSFI	PRE MENOPAUSAL (n=35)		
	PREOPERATIVE Mean (SD)	POST OPERATIVE	
Desire	2.72 (0.80)	3.23 (0.53)	<0.001
Arousal	3.54 (0.73)	4.50 (0.68)	<0.001
Lubrication	3.96(0.60)	4.46 (0.61)	<0.001
Orgasm	3.93(0.72)	4.45 (0.64)	<0.001
Satisfaction	4.04(0.54)	4.77 (0.62)	<0.001
Pain	4.09(0.70)	4.88 (0.43)	<0.001
<b>Total</b>	<b>22.30(1.98)</b>	<b>26.32 (1.32)</b>	<b>&lt;0.001</b>

**Table 4.**

FSFI	POST MENOPAUSAL (n=24)		
	PREOPERATIVE	POST OPERATIVE	
Desire	2.66(0.46)	3.18 (0.51)	<0.001
Arousal	3.35 (0.76)	4.25 (0.57)	<0.001
Lubrication	3.73 (0.61)	4.57(0.45)	<0.001
Orgasm	3.45 (0.67)	4.10 (0.58)	<0.001
Satisfaction	4.08 (0.43)	4.91 (0.68)	<0.001
Pain	3.63 (0.86 )	4.95 (0.66)	<0.001
<b>Total</b>	<b>20.92 (1.85)</b>	<b>25.99 (1.24)</b>	<b>&lt;0.001</b>

had better success rate with TOT surgery.

According to urogenital distress inventory scoring - short form (UDI -6) improvement was observed in the domain of leakage and stress incontinence with P value <0.01, while other domain like frequency of micturition , urgency , difficulty in urination and lower abdominal pain did improve but it was not statistically significant.

According to FSFI scoring done before and 6 months after surgery, there was improvement in all domains (Desire, Arousal,Lubrication,Orgasm,Satisfaction,Pain) of female sexual function. Both premenopausal and post menopausal group showed improvement in all the domains. (TABLE 3). Similar result was obtained in other studies Soliman(6), though various other studies had contradictory results , reporting either partial improvement (7) or no improvement in sexual domains (8). Few studies like Naumann et al (9) had mixed reports, with 53.3 % female having improvement in FSFI score while 6.7 % showed deterioration and 38 % had no effect on sexual function.

Limitation of our study includes a short follow up of six months and scoring with FSFI does not take into consideration relationship between urinary incontinence and sexual function and symptoms like incontinence during intercourse are not evaluated. As its understood that female sexual dysfunction is a complex entity and only pelvic floor muscle disorder or incontinence are not the only factors controlling

it.

## 5 CONCLUSION

Trans obturator tape insertion for stress urinary incontinent patient has good success rate and factors like young age, less severity of urgency, milder grade of stress incontinence , decrease time gap between starting of symptoms and treatment , lesser parity , lack of chronic co morbid condition had favorable effect. Patient had improvement in all domains of sexual function in both pre and post menopausal group.

Thus after failure of initial conservative management, trans obturator tape placement by inside out or outside in method remains good treatment modality for stress incontinence and also lead to improvement in sexual function.

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