

ORIGINAL ARTICLE

EVALUATION OF STRESS URINARY INCONTINENCE AMONG NON PREGNANT FEMALE PATIENTS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Urinary incontinence has been defined by the international continence society as a condition in which involuntary loss of urine is a social or hygienic problem and is objectively demonstrable. Stress urinary incontinence is the most common form of transurethral urinary incontinence in women.

Objective: To study the probable etiological factors in diagnosed cases of Stress urinary incontinence among non pregnant female patients attending outpatient department of Gynecology in SMIMER, Surat and to evaluate the cure rate of non-surgical and surgical treatment among them

Method: This study was conducted in the department of Obst and Gynec, SMIMER, Surat from May 2010 to December 2012. Non pregnant patients demonstrating SUI with full bladder were included in the study. Total 40 patients were studied.

Observation: Out of 40 cases 32 (80%) cases belonged to the age group of 40 to 59 years, 22 (55%) were in peri-menopausal age group and the median parity of the patients was 3. Other important observation was that 29 (54.7%) patients had associated utero-vaginal prolapse with SUI and maximum had third degree prolapsed. Both non-surgical and surgical treatment was offered to patients with good results.

Conclusion: This study indicates that SUI is quite common in peri-menopausal age group, it has strong association with multi parity and UV prolapse. Non-surgical management is still the acceptable mode of treatment. The TVT-O appears to be safe and effective surgical treatment for SUI.

Key words: Stress urinary incontinence (SUI), TVT-O, menopause, multi parity, Utero-vaginal prolapsed

Abbreviations: SUI stress urinary incontinence, UV prolapse-uterovaginal prolapse, VH-vaginal hysterectomy, HRT-hormone replacement therapy, UTI-urinary tract infection

INTRODUCTION

Definition of SUI- The international continence society defines stress continence as a symptom, a sign and a condition. The symptom indicates the patient's statement of involuntary urine loss during physical exertion, the sign is the objective demonstration of urine loss from the urethra synchronous with a physical exertion and condition is called "Genuine" Stress Incontinence and the urodynamic demonstration of the loss of urine when intravesical pressure exceeds the maximum urethral pressure in the absence of detrusor contraction.¹

Urge Incontinence- Leakage of large amount of urine at unexpected times, including during sleep. SUI results from the anatomic displacement of the UV

junction and proximal urethra outside the normal intra-pelvic location above the urogenital diaphragm.² There are three major determinants related to the condition SUI. These include -1. The resting urethral pressure 2.The pressure transmission ratio which is the percentage of bladder pressure increase with stress that reaches the urethra and is determined by anatomic relationship.3.The amplitude of the rapid increase in intra-abdominal pressure .Most of the surgical procedures for SUI primarily affect pressure transmission ratio. There are many factors responsible for loss of pelvic support which can lead to SUI. These factors may be developmental weakness, child birth trauma³, post menopausal estrogen deficiency⁴, obesity⁵, spinal cord lesion⁶, UTI, drugs side effects⁷, etc.

To demonstrate SUI, **Stress Test** is done in which the patient with full bladder is asked to cough. If the patient loses a spurt of urine synchronous with cough and ending abruptly with cessation of cough, almost certainly she has pure anatomical inconti-

nence. The investigations⁸ which may be needed in the patient's assessment are urine, routine, microscopic and culture sensitivity, USG⁹, uroflowmetry¹⁰, cystometry¹⁰, urethral pressure and urethral closure pressure profile¹⁰ etc. Urodynamic testing is not necessary in women with pure SUI (society of obstetrics and gynecologists, canada 2013)

There are various non-surgical and surgical methods of treatment for SUI depending upon its severity. Non-surgical methods include lifestyle changes, pharmacological agents, prosthesis, Kegel's exercises¹¹, urinary bladder training etc. The latest surgical procedure for SUI are midurethral sling procedures¹³ which can be TVT (tension free vaginal tape) or TVT-O (transobturator approach)¹⁴⁻¹⁷. TVT-O is comparatively easier and has lesser complication rate.

METHODOLOGY

This prospective retrospective study was conducted in dept. of Obst & Gynec, SMIMER Hospital, Surat from May 2010 to Dec 2012. Total 40 patients were studied fulfilling the inclusion criteria i.e. demonstrable SUI with comfortably full bladder & patient's consent for study. Patients with pregnancy, urge incontinence or voiding difficulty were not included. All subjects were inquired for detailed menstrual & obstetric history with special emphasis on the number and mode of delivery. Past history of bronchial asthma, bronchitis & chronic constipation was looked for. H/O smoking, tobacco, antihypertensive drug was noted. Detailed general, systemic & local examination was done in all subjects. Local examination was done in dorsal position with comfortably full bladder, after repositioning of utero-vaginal prolapse when the patient was asked to cough, a spurt of urine through external urethral meatus on coughing was considered as a positive objective evidence of SUI. Thus SUI was confirmed by stress test.

Routine investigations were done for surgical fitness. Special attention was given to urine analysis to exclude UTI. All patients were counseled and given option for non-surgical and surgical management of SUI. In non-surgical methods antibiotics, HRT, local estrogen, kegel exercises and Duloxetine was given according to the need on outpatients bases. In surgical management TVT-O (trans obturator ap-

proach) was done along with other surgeries like vaginal hysterectomy, anterior and posterior colporrhaphy as needed. The time taken for TVT-O was noted from opening to closure of the sub urethral vaginal mucosa only.

Intra operative complications like heavy bleeding, bladder injury, urethral injury etc were noted. Early postoperative complication (up to 14 days) like UTI, fever, local hematoma, urinary retention was noted. The indwelling Foley catheter was removed on the second post op day. On the day of discharge the postvoid residual urine was measured which if less than 100ml was considered normal. Patients were followed on 7th post op day, at 3 months, 6 months and 12 months after surgery. A negative stress test was the objective measure of success used in this study. The outcome of treatment was classified in four categories-cure of SUI, improvement, failure and recurrence.

Cure of SUI after the procedure was defined as the absence of a subjective complaint of leakage and absence of objective leakage on Stress Testing.

Improvement was defined as no urine loss on the Stress Test plus the subject's report of some leakage but there was overall subject satisfaction.

Failure- No improvement or symptom aggravation.

Recurrence- The development of leakage again during the follow-up after initially achieving a cure.

The study was approved by institutional ethical committee.

RESULTS

Out of 40 subjects the median age of the patients was 46.5 years with the range between 35 to 56 years. 32 patients (80%) belonged to age group of 40 to 59 years. The mean parity of the patient was 3 with the SD of 0.87. The median parity of the patient was 3 with range between 2 to 5. 28 patients (70%) with SUI were third para or above. In our study 22 (55%) of the subjects were in peri-menopausal age group, which shows that SUI is quite common before menopause. According to the place of delivery 25 (62.5%) of the subjects had home delivery leading to repeated trauma to ligaments and hence and increased incidence of SUI.

Table 1: Distribution according to type of non-surgical treatment taken and its out come

Variable	No.	3 months	6 months	12 months
Antibiotics (UTI)	3	No SUI	No SUI	No SUI
HRT	2	No SUI	1-No SUI 1-partially improve	1-no SUI 1-loss to follow up
Duloxetine + exercise	7	3-not improved 2-partially improve 2-totally improve	2-surgical treat 2-loss of follow up 3-totally improve	4-no SUI 3-loss to follow up

Table 2: Distribution of subjects according to intra-operative complications

Variable	No. (%)
Difficulty in passing needle	3 (10.00)
Excessive bleeding	2 (6.67)
Bladder/urethral injury	0
Total	5

Table 3: Distribution of subjects according to objective assessment of SUI

Result of objective assessment	3 Months	6 Months	12 months
No SUI	38/38	33/33	29/29
SUI present	00	00	00
Lost to follow-up	02	06	08
Not completed 12 months after treatment	00	01	03
Total	40	40	40

Table 4: Distribution of subjects according to final outcome of surgery

Outcome of surgery	3 months (%)	6 months (%)	12 months (%)
Cure	34/38 (89.47)	31/33 (93.55)	29/29 (100)
Improved	4 (10.53)	2 (6.45)	0
Failure	0	0	0
Recurrence	0	0	0

We found that, 29(54.7%) of subjects had associated urogenital prolapse which may be due to common etiological factors like trauma due to repeated child birth. 13 out of 40(32.5%) had 3rd degree uterine-prolapse, while 9 out of 40(22.5%) had second degree prolapse, 13(24.5%) subjects had isolated SUI, 27 subjects(67.5%) had a cystocele with SUI. As seen in table-1, out of 40 patients 12(30%) had non-surgical management and 28(70%) had surgical management. Out of 12 managed conservatively, 3 was given antibiotics for UTI, 2 were given HRT for menopausal symptoms and 7 were treated with tablet Duloxetine + Kegel exercise. After 12 months, 8 patients were totally improved of which 2 had surgery due to intolerance to Duloxetine & 4 subjects lost to follow up.

TVT-O was done for SUI alone or along with concomitant surgery like VH, NDVH, ant colpography, AP repair etc. The intra-operative time taken for TVT-O in 21 subjects (70%) was 5-10 minutes, in 4 subjects (13.34%) time taken was 10 -15 minutes, only in 5 patients more than 15 min were taken. As shown in table 2,

Intra-operative complications noted were difficulty in passage of needle (in 3 patients i.e. 10%) & haemorrhage (in 2 patients i.e. 6.67%). No case had bladder or urethral injury. Early post operative complications were urinary retention & fever. Late post operative complications were tape erosion, groin

pain, dyspareunia & de novo urgency. The median hospital stay of the patient was 4 days with range of 2 to 5 days. After surgical and non-surgical treatment, patients were followed at 3 months, 6 months and 12 months. As shown in table 3, all patients examined at 3 months (n=38), 6 months (n=31) & 12 months (n=29) showed no objective evidence of SUI when they were examined in supine as well as erect position, giving an objective cure rate of 100%.

As shown in table 4, at three months follow up, 34/38 subjects (89.47%) were completely cured i.e. they neither had subjective nor objective evidence of SUI and 4/38 subjects (10.53%) had improvement i.e. though subjectively they reported some degree of urinary incontinence, there was no evidence of SUI. At 6 months, 31 out of 33 available subjects had cure, 2 out of 31(6.45%) had improvement. And at 12 months follow up, 29 out of 29 available subjects had cure.

DISCUSSION

In our study maximum number of subjects (45%) were from 40-49 years which indicates increased incidence of SUI in the elderly women which can be due to decreased urethral vascularity and abnormal smooth and skeletal muscle efficiency resulting in low resting urethral pressure and abnormal stress response. 70% subjects had parity of 3 and above indicating SUI more common in multiparous patients. This is because repeated vaginal deliveries causes damage to pelvic floor and permanent elongation of pubourethral supporting ligaments. In our study SUI was common in premenopausal and postmenopausal suggesting estrogen deficiency to be the cause of SUI. SUI was associated with uterovaginal prolapse in 54.9% cases, in which 3rd degree uterine descent was most common. This association could be because the contributory factor to both has been seen to be multi-parity leading to repeated trauma during child birth.

Out of 12 subjects who accepted medical treatment 8 subjects were completely improved. Most common concomitant surgery associated with TVT-O was VH+AP repair (11 subjects that is 36.7%). In 70% patients TVT-O was completed in 5-10 minutes with minimal complications. So TVT-O is a relatively safe surgery as far as intraoperative complications are concerned. The false passage was the only intraoperative complication noted in 3 subjects (10%) which was slightly higher as compared to studies of Teo et al¹⁴ (4.9%), Sola et al¹⁵ (0%), and Lim et al¹⁷ (0%). None of the subject had an objective evidence of SUI on 3, 6 and 12 months follow up-giving cure rate of 100%.

CONCLUSION

This study of Evaluation of SUI indicates that SUI is quite common in perimenopausal age group, associated with multi parity and uterovaginal prolapse. Non-surgical management is still the acceptable mode of treatment. The TVT-O appears to be a safe and effective surgical modality of treatment and can be performed with other gynec surgery.

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