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RESEARCH ARTICLE

EFFICACY OF TRANSOBTURATOR TAPE IN THE TREATMENT OF FEMALE STRESS URINARY INCONTINENCE.

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Abstract

Objectives: To assess the effectiveness of transobturator tape in treatment of female stress urinary incontinence.

Patients and Methods: Prospective Observational study. 30 women with clinical and urodynamic features of genuine stress incontinence fulfilling the inclusion were enrolled in this study and underwent TOT operation. The follow-up was done after 6 months subjectively by UDI-6 and objectively by history and physical examination.

Results: Our objective assessment demonstrated 86.66% cure rate after 6 months. Subjective assessment using UDI-6 score demonstrated 90% cure rate.

Conclusion: The outside to in Trans-Obturator approach is a very effective treatment of SUI with low morbidity.

Introduction:-

Stress urinary incontinence (SUI) is defined as involuntary urine leakage on effort or exertion (e.g. on sneezing or coughing) without rise in detrusor pressure. [1] A large meta-analysis reported an estimated prevalence of urinary incontinence of 10% in women aged 30-60 yrs with approximately half of cases attributed to stress urinary incontinence[2.] The amount of urine lost at any one time is usually only a few drops. Stress urinary incontinence occurs as a result of variable combination of urethral sphincter weakness and defect in urethral support leading to ineffective closure of urethra. Normal urethral closure is maintained by a combination of intrinsic and extrinsic factors. The principal known risk factors are age, Body mass index (BMI) and parity.[3-7] Treatment of urinary incontinence can be either nonsurgical or surgical. In cases, where conservative therapy fails, women need surgical treatment. Minimally Invasive Mid-Urethral Sling procedures (TVT and TOT) have been developed to avoid the complications of open procedures. The minimally invasive Retropubic Transvaginal tape (TVT) was introduced in 1996. However potential immediate surgical complications with TVT included bladder perforation, injury to pelvic vessels and bowel. In 2001 Delorme described a new method of inserting the tape, which passes through the obturator foramen, thus avoiding some of the complications such as bladder perforation and bowel perforation[8]. The transobturator tape is a tension free sling as the resting urethral angle is not changed by procedure, nor is it necessary to correct urethral hypermobility.

Materials and method:-

It was a prospective observational study conducted in the Department of Gynecology and Obstetrics, Lalla Ded Hospital, Government Medical College Srinagar, over a period of one year including 30 patients from April 2014 to April 2015. Patients diagnosed with SUI were explained about their disease. Patients who were willing for an operative procedure and were desirous of transobturator tape placement were finally recruited for this study after obtaining written informed consent. Before surgery, the patients were evaluated by history, physical examination, stress test, cotton swab test (Q tip Test), ultrasound and all baseline investigations. All woman underwent urodynamic evaluation preoperatively. A standard protocol for preoperative and 6 months postoperative evaluation was followed which included a gynecological examination, a stress test performed in standing position with comfortably filled bladder, a 24 hr pad test, and residual urine measurement by catheterization or ultrasound. Patient with urge incontinence or mixed incontinence or pure intrinsic sphincter deficiency were not included in the study. The TOT procedure is done under spinal anaesthesia. The patient is placed in lithotomy position. At a point 1cm proximal to the urethral meatus, a 2cm midline incision is made on the anterior vaginal wall. Perivesical space on either side is created. The right and left curved needles are navigated through the stab incision made on either side about 2 cms from clitoris. The ends of the polypropylene sling is threaded on the needles and brought out through stab incision. The wide centre of the sling is positioned at the level of midurethra where it serves as hammock for the urethra. The redundant ends of sling are cut flush with the skin. The Foley catheter is removed on the next day of surgery and patient is discharged two days following the procedure. The operation is covered with antibiotics. Follow up was done at 2 months and 6 month interval subjectively by UDI-6 and objectively by history and physical examination. We defined the cure of SUI as the disappearance of subjective and objective SUI using UDI-6 and 24 hours pad test and negative cough test on physical examination.. Per-operative and post-operative complication were also taken into account.

Results and analysis:-

Thirty women were recruited in this study who fulfilled the inclusion criteria and underwent TOT procedure. The mean age was 55.8±6.38 years (range 42-70) and minimal follow up was 6 months.

Out of 30 patients, 23 (76.7%) were para 2-4. 3 (10%) patients were para 4 or more. The mean and S.D values of BMI of patients was found to be 25.1±3.88.

Preoperatively, Cough stress test was positive in all the patients. Preoperatively, 25(83.3%) patients had < 20 gm weight gain on 24 hr pad test, 3 (10%) patients had weight gain of 20-74 gm/24h and 2 (6.7%) cases had values≥75 gm/24hr.

Table 1: Pre-operative Urodynamic data of patients

Variable	**Pre-operative**	
	Median	**Range**
First sensation (ml)	171.5	36-443
Bladder Capacity (ml)	493.5	342-789
MUCP (cmH2O)	30.5	12-38
PVR	122.5	100-150
Uroflow (Q Max)	22.5	20-30

The mean duration of surgery in studied patients was =19.1±3.29. The mean hospital stay was 2.7±0.827 days and the average blood loss was 61.5±8.46 ml.

In postoperative period, Cough stress test was negative in 28 (93.3%) patients and positive in 2 (6.6%) patients. Postoperatively, On follow up after 6 months, 26 (86.6%) patients were dry on 24 hr pad test and 2 (6.6%) patients had weight gain of less than 8 grams. Only 2 (6.6%) patients had weight gain of more than 8 grams on 24 hr pad test.

Table 2: Objective outcome of TOT after six months post procedure in studied patients		
Outcome	**No. of patients**	**Percentage**
Cured	26	86.6
Improved	2	6.7
Not Cured	2	6.7

Out of 30 patients, 26 (86.6%) were cured while as 2 (6.6%) patients were improved after six months follow up.

Subjective assessment using UDI-6 score demonstrated 90% cure rate and significant improvement in quality of life.

Table 3: Post operative complications in patients		
Complication	**No.**	**%age**
Bladder Injury	0	0.0
Dysuria	2	6.7
Denovo Urgency	4	13.3
Transient Retention	1	3.3

The complication rate was low. Only 2 (6.7%) patients complained of dysuria in postoperative period. 4(13.3%) patients developed denovo urgency and transient retention was reported in only 1(3.3%) patient.

Discussion:-

1. Stress Urinary incontinence is a common disorder among females and has a negative impact on the quality of life.

2. Incidence of SUI increases with age. In our study, majority of the patients were in age group of 50-59(63.3%), mean age being 55.8±6.38 years. It was comparable to study conducted by **Taweel W A et al (2010)[9]** in which mean age of patients was 52 years.

3. SUI is more common in obese women. In our study mean BMI of patients was 25.1 where as **Bratu O, Radulescu, Spinu D et al (2013)[10]** reported mean BMI of 28.76 with limits between 22.5 and 38.3.

4. SUI is more common in parous women. In our study 23 (76.7%) patients were of para 2-4. In the study conducted by **Chattopadhyay N, Kundu M K, Saha M K et al (2014)[11]** 63.33% patients of SUI were para3 or more and 30% patients were para2.

5. The mean duration of surgery was 19±3.98 minutes, the range being 15-27 minutes. **Magon N, Chopra V S (2012)[12]** in their work found that the mean duration of surgery was 21.69 minutes and mean blood loss was 76.78ml which was calculated by using pre weighed swabs. The mean blood loss in our study was 61±8.46ml.

6. Objective outcome using cough stress test and 24 hours pad test revealed 86.6% cure rate in our study. 2(6.6%) patients were improved and only 2 (6.6%) patients were not cured. Total success rate of TOT was 93.2% as observed by **Magon N, Chopra V S (2012)[12]** where as **Chattopadhyay N, Kundu M K, Saha M K et al (2014)[11]** demonstrated 100% cure rate.

7. Subjective assessment using UDI-6 score demonstrated 90% cure rate and significant improvement in quality of life.

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