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Original article

TO EVALUATE EFFICACY OF CUSTOMIZED POLYPROPYLENE MESH TAPE IN TRANS-OBTURATOR TAPE FIXATION SURGERY IN STRESS URINARY INCONTINENCE

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Abstract

Introduction: International Continence Society defines symptoms of urinary incontinence as complaints of any involuntary loss of urine. Stress Urinary Incontinence(SUI) is involuntary leakage of urine during exertion. SUI can significantly impair the life. Variety of treatments, both medical and surgical have been used to manage it. Various methods for surgical management of SUI is available in which Midurethral sling surgery by Trans-obturator approach with tape fixation is currently gold standard surgical treatment for SUI which is commonly done. Tapes available commercially is costly and unaffordable for lower economic class patients .Hence it is necessary to evaluate different materials used in terms of efficacy, cost effectiveness, and safety.From Polypropelene mesh tape is made customely and used in same surgery which may be equally effective and less costly.

Objective: To evaluate efficacy of Customized Polypropylene mesh Tape in Trans-obturator tape fixation surgery in Stress Urinary Incontinence

Methodology*:* Study will be done on 25 cases with SUI. All patients will be examined clinically after history taking and informed consent.Study population will be patients attending L.G.Hospital Gynec OPD and admitted in ward who have complain of involuntary passage of urine on coughing,straining or any other act which increase intra-abdominal pressure.Patients with urinary tract infection and Mixed incontinence werte ruled out.

Results: In Present study, 25 Patients with SUI were treated with customized polypropelene mesh tape by TOT surgery with 100% efficacy and no any major postoperative complication.

Conclusion: It is concluded that Midurethral sling surgery by transobturator approach with polypropelene mesh sling is safe and effective surgery for SUI. Customely made polypropelene mesh tape is equally effective and less costly than commercially available tape.

Key words: Stress Urinary Incontinence, Transobturator Midurethral Sling surgery, Polypropelene Mesh.

Introduction:

Urinary Incontinnce is a condition which affects 30-40% of older women, with the majority afflicted with stress urinary

incontinence(SUI).Conservative therapy helps large number of patients but cures very few. Surgical approaches for SUI became more common and currently having minimally invasive techniques. Stress Urinary Incontinence is defined by the International Continence Society as the 'Involuntary leakage of urine on effort'. SUI is a storage disorder for which characteristic symptom is involuntary leakage of urine on effort or exertion or on sneezing or coughing. SUI has significant impact on quality of life for many women. Variety of treatments, both medical and surgical have been used to manage it. Various methods for surgical management of SUI are available in which Midurethral sling surgery by Trans-obturator approach with tape fixation is currently gold standard surgical treatment for SUI which is commonly done. Tapes available commercially is costly and unaffordable for lower economic class patients .Hence it is necessary to evaluate different materials used in terms of efficacy, cost effectiveness, and safety.From Polypropelene mesh tape is made customely and was placed at midurethral level, extending from one paraurethral gutter to another and was fixed with Silk for management of female stress urinary incontinence.

Objective:

The Objective was To evaluate efficacy of Customized Polypropylene mesh Tape in Trans-obturator tape fixation surgery in Stress Urinary Incontinence.

Methodology:

- The retrospective study was done at Obstetrics and Gyaenecology department of LG Hospital affliated to AMCMET medical college, Ahmedabad. This study was done on 25 women with SUI. All of them were examined and investigated after taking their informed consent. Inclusion criteria were all Patients with complaint of involuntary passage of urine on coughing,laughing,straining or any other action suggested of increase in intra-abdominal pressure. Study population comprised lower socioeconomic group patients attending Gynaecology OPD at LG Hospital. It was an observational study to evaluate efficacy of customely made poplypropelene mesh tape in patients with SUI undergoing TOT fixation. Postoperative complications and efficacy and patient satisfaction was evaluated. A Total of 25 patients in age group of 50-70 years having clinical evidence of Stress urinary incontinence were included in study. Patients were evaluated preoperatively by history taking and detailed examinations and planned for surgery. A Polypropelene mesh of appropriate length of 15 ×4 cm was used and placed at midurethral level. Postoperative followup at 1 and 6 month of surgery included physical examination and assessing patient's satisfaction and cost effectiveness.

Inclusion Criteria:

- All Patients with complained of involuntary passage of urine on coughing,laughing,straining or any other action suggested of increase in intra-abdominal pressure.

Exclusion Criteria:

- Patients with Mixed incontinence and Urge Incontinence
- Patients with UTI
- Patients who had previously corrective surgery for stress incontinence
- Patients with pregnancy
- Patients with any other medical disorder

Surgical Technique: During induction of anesthesia and positioning of patient tape was made from polyproprlrnr mesh. A Foley catheter was done. Submucosal saline injection was done(Hydrodissection) to elevate the vaginal mucosa easing the dissection. Outside-In technique for TOT approach was used which emphasize spped,safety and ease of placement. Finger was inserted through vaginal incision at midurethral level to reach ischipubic ramus. A point in the groin fold level with clitoris is selected and a 5 mm incision made on each side. The needle passer is inserted through groin incision and guided by finger until it penetrates the obturator membrane. The needle is then rotated under pubic ramus and vaginal index finger guides it into the vaginal incision. Tape is fixed with silk at midurethral level. Vaginal incision is closed

with absorbable sutures. Urinary catheter was removed after 72 hours of surgery.

Results and Discussion:

Majority of the women were among age group between 51 and 60 years as per Table-1. In our study,we found all multigravida and there was no primigravida as per Table-2.

Table-1: Case distribution according to age group.

Age in Years	Patients	Percentage
40-50%	06	24%
51-60%	18	72%
61-70%	01	04%
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Table-2: Case distribution according to parity group.

Parity	Patients	Percentage
Multigravida	25	100%
Primi and Nullipara	0	0%

Table-3: Mean Hospitalization time and post catheterization.

Mean post-operative catheterization	3 days
Mean Hospitalization time	3 days

No intraoperative complications such as bladder injury or bleeding exceeding 100 ml were seen. Only 2 patients developed minor voiding difficulty which were relived spontaneously and 1 patient had urinary tract infection which was cured with antibiotics.There was no postoperative groin pain.Postoperative complications like febrile

morbidity, local and systemic infection, retention of urine or rejection of mesh was not seen in any of the patients.During the preoperative and postoperative assessment period cough stress test was carried out. Postoperative assessment was carried out at 1 month and 6 months follow up.Cough stress test and Post void urine volume assessed. There was no failure rate in postoperative patients in case

with polypropelene mesh used in TOT fixation with customized tape.

Table-4: Pre and post operative assessment of cough stress test.

Cough stress test	Patients	Results
Preoperative assessment of cough stress test	25	25
Postoperative assessment of cough stress test	25	00

Table-5: Complications

Complications	Patients	Percentage
Minor voiding difficulty	2	8%
Urinary tract infection	1	4%
Bladder Perforation	0	0%
Postoperative urinary retention	0	0%
Postoperative groin pain	0	0%
Rejection of mesh	0	0%
Mesh erosion	0	0%

Succcess Rate: No recurrence had been recorded. In all the 25 cases, none had reported with failure,thus giving 100% cure rate for SUI.

Conclusion:

To conclude midurethral transobturator sling surgery with customized poilypropelene mesh is a safe, efficient, reproducible and low cost technique for treating SUI. The Polypropelene mesh commonly available in the markets are costly and unaffordable for lower socioeconomic groups. Thus an attempt was made to design a technique to make this mesh economical. The use of this custom made polypropelne mesh in this way makes the procedure very cost-effective and affordable. This is because one mesh is costing INR 2500/- can easily used in 4 patients, which brings down the cost to not more than INR 650/- per patient. Thus surgery with customized tape is equally effective and less costly.

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