

THE ADVANTAGE OF TRANSOBTURATOR TAPE PROCEDURE (OB-TAPE) FOR SURGICAL TREATMENT OF FEMALE STRESS URINARY INCONTINENCE.

Hypothesis / aims of study

Surgery is the primary treatment option for stress urinary incontinence (SUI) in female. Recently the treatment of SUI has been revolutionized, by introducing new more compatible materials and using less invasive techniques with low morbidity. The introduction of the tension-free vaginal tape procedures in the late 90's set a good example in this domain that radically changed the treatment of SUI. The aim of this study is to evaluate the short-term outcome, complications, and safety of the transobturator suburethral tape procedure in the treatment of female stress urinary incontinence.

Study design, materials and methods

Ob-Tape, a non-woven, non-elastic polypropylene tape with a 15 mm long central (suburethral) section was inserted via the transobturator route. The tape is inserted tension-free in a horizontal plane underneath the middle of the urethra between the two obturator foramina. The ends of the tape are tunnelled percutaneously with a tunneller.

The patient was put in exaggerated lithotomy position with hyper flexion of the thighs that were bent back on the abdominal wall. Mild abduction of the legs would expose better the crural areas and correctly placing the landmarks on the skin. A head down (10 degrees) position would allow better visualization of the vestibular roof. A urethral catheter is inserted to evacuate the bladder. A vertical incision 2 cm long is made in the suburethral vaginal wall, starting 1.5 cm from the external urethral meatus (in the midurethral segment). After minimal paraurethral dissection of the vaginal wall from the urethra using a blunt scissor, the index finger is introduced to feel the medial border of the inferior pubic ramus (ischiopubic) forming the boundaries of the obturator foramen. The neurovascular bundle (obturator nerve and vessels) can be felt at the upper boundaries of the foramen. The finger is used to feel the ischiopubic ramus (where to stop), the obturator membrane, and to avoid injury of the neurovascular bundle. An already assigned point formed by interception of a horizontal line passing at the level of the clitoris and another vertical one delineating the outer (lateral) boundaries of the labia majora, represent the first mark. Another point is taken 2.5 cm lateral to the first mark and at the same horizontal level represents the site of the tape exit. A 0.5 cm incisions is made in the skin at this point. The tunneler is held in the same hand as the side on which the operator is working. The tunneller is held vertically with the handle downwards, its tip is then introduced through the skin incision downward and medially-anterior toward the obturator foramen to cross the obturator membrane. As the membrane is crossed, a specific resistance is felt which is easily recognised. The tunneller is then turned to a horizontal position, with the handle pointing medially. The index finger is introduced into the vaginal incision to fold the urethra upward and protect it from the needle. The finger will then make contact with the tip of the tunneller laterally underneath the symphysis pubis. The tunneller is then guided by the finger into the vaginal incision. The tapered end of the tape is introduced into the eye of the needle and then pulled through retrieving the free end of the tape for few cm above the skin level. The same steps are repeated at the other side. There is a black mark (vertical line) that should be centralized under the urethra by equally pulling the free ends of the tape at their skin exits. A head-tilted up position would make the adjustment in a more physiological urethral position. Inserting and opening the blades of a Mayo-scissor between the tape and the urethra (leaving few millimeters between them) insure absence of any tension exerted by the tape on the urethra. Complete homeostasis is insured, the excess edges of the tape are trimmed, one or two stitches are taken in the skin incision, and the vaginal incision is closed with interrupted 3/0 vicryl sutures. The catheter was removed 24 hours later.

From January 2003 to January 2005, 34 patients with stress urinary incontinence were operated and a minimum of 1 year follow-up was available for 28 patients (mean follow-up 15 months; range 3-24). The operation was carried out under regional anesthesia in 16 patients

and under general anesthesia in 18 patients. The mean age was 49 years (range 38-62). The study was performed following approval from the local ethics committee. Each patient gave written informed consent before the start of the study. All patients were assessed before surgery by clinical and urodynamic examination. 2 patients presented incompetent urethral closure mechanism (maximum closure pressure <20 cm H₂O). 5 patients presented with recurrent stress urinary incontinence after Burch procedure or TVT. 7 patients presented with mixed urinary incontinence, 3 of them with idiopathic detrusor overactivity confirmed by cystometry. The results were evaluated by clinical examination, cough test & measurement of urine flow. The outcome of the procedure is measured at 3,6,12,18&24 months. Patients were considered to be cured when they no longer wore any protection, had no stress leakage, and had no leakage during a cough test. Patients were considered to be improved when they judged themselves to be improved, and used less protection. The results were considered as failure for patients who did not meet the above mentioned criteria. Voiding disorders suggesting bladder outlet obstruction were defined as the presence of the following two criteria: - maximum flow rate <15 ml/s, - post void residual >20% of the bladder capacity.

Results

31/34 patients (91%) were cured and 3/34 (9%) were improved. Mean operating time was 15 minutes. No intra-operative complications were recorded. There were no problems with urethral erosion, or functional impairment related to the tape. Mild urethral pain was reported in 3 patients that resolved spontaneously in 2-3 weeks. All patients voided spontaneously post-operatively. High fever was developed in one patient. 1 patient developed post operative vaginitis and vaginal discharge that was treated medically. 1 patient developed post operative vaginal erosion and tape exposure, that was managed by excision of the exposed part of the tape. 1 patient developed de novo urge incontinence that was treated medically.

Interpretation of results

The results in this report (91%) cure rate and 9% significant improvement, agree with other studies using the same technique, (1), (2), which means that the transobturator tape operation is an effective and safe procedure for the treatment of female stress urinary incontinence confirmed after more than 1 year of follow-up. The post-operative morbidities associated with this technique are minimal and manageable. No postoperative urine retention. High fever was developed in one patient, may be due to extra transvaginal-paraurethral dissection to exteriorize the tape following marked adhesions from previous surgery. As the retropubic space is preserved intact, the transobturator approach avoids the risk of bladder, bowel or vascular injuries, and cystoscopy is not required. Evaluation of the results after a longer follow-up period is needed.

Concluding message

Transobturator tape is a simple, effective and safe procedure for the treatment of female stress urinary incontinence confirmed after more than 1 year of follow-up. It may offer increased safety when compared to traditional retropubic slings. The post-operative morbidities associated with this technique are minimal and manageable. Evaluation of the results after a longer follow-up period is needed.

REFERENCES:

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