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SAFETY AND EFFICACY OF THE TRANS OBTURATOR TAPE IN THE TREATMENT OF STRESS URINARY INCONTINENCE

Aims of Study

In the past years many new surgical techniques have been presented for the treatment of urinary stress incontinence. The principal target of these therapies is achieving continence, reducing surgical invasiveness, and improving the safety and practicability of the procedure. The Trans Obturator Tape (TOT), is a new technique, based on an entirely new concept of positioning of a tape under the middle urethra horizontally through the obturator foramina. The safety, feasibility and efficacy of the TOT was evaluated.

Methods

The study was done using a tape named Obtape, produced by Porges Mentor. The tape is made of polypropylene, with a particular design which allows the in growth of the tissue and with interesting characteristics of elasticity (only 5%). This low elasticity permits an easier placement and accurate tension adjustment reducing the risk of an excessive tensing of the tape.

Cadaveric dissection was performed to evaluate the anatomy of the obturator foramina. The female frozen cadaver was positioned in standard lithotomy position. A Foley catheter was inserted into the urethra and a small (2cm) incision was performed 1 cm below the external meatus in order to allow the digital dissection of the paraurethral space toward the internal surface of the pubic bone. Through the skin the obturator foramen was identified and another small incision was done in the medial part just above the level of the urethral meatus bilaterally .After that a hooked tunneler was inserted through the incision at the level of the obturator foramen. The tunneler is directed antero-posteriorly until the obturator fascia, which covers completely the obturator foramen, is perforated. After that the tunneler is turned and directed medially in the para urethral space previously prepared. The tunneler is inserted through the vaginal incision under direct digital control. The tiny extremity of the tape is inserted into the eye of the tunneler. Retracting the tunneler the tape enters the obturator foramina. The procedure is repeated on the other side. Particular care must be given to avoid extra tension under the urethra.

Subsequently the endopelvic space was opened and the endopelvic fascia prepared. Further more incising the pelvic fascia the urethra and the bladder neck was exposed and the obturator fossa was opened to isolate the tape. In the obturator fossa particular attention was paid to the relation between the tape and the obturator nerve and vessels. All the distances between the tape and the neighbouring anatomical structures were obtained.

Furthermore 50 patients with urinary stress incontinence where treated with TOT. The mean age was 57 (range 36 – 76). 70% of the patients (35/70) had genuine stress incontinence (GSI), 30% (15/50) had stress incontinence associated with urgency. Patients where evaluated preoperatively and at one year follow up with a physical examination, Boney test, uroflowmetry and voiding diary.

Results

Cadaveric measurements :

(Average)	Endopelvic space	Obturator foramen
Distance between lateral wall of urethra and tape	2 cm +/- 0,5	2 cm +/- 0,5
Distance between obturator nerve / vessels and tape	5 cm +/- 0,3	4 cm +/- 0,3
Angle urethra – tape	15 ° +/- 0,5	15 ° +/- 0,5

88% (44/50) patients where dry one year after the surgery and 12% (6/50) where improved. No perioperative complications where observed. In one case, complicated with extrusion of the tape and secondary infection the tape had been removed. One other patient had developed de novo instability, correlated with recurrent urinary tract infections). No statistically significantly changes in uroflowmetry parameters was observed after the surgery.

Conclusions

The trans obturator tape is a simple, direct and quick procedure with a very low risk of obturator nerve and vessel perforation due to the distance between these structures and the tape. The indications are represented by genuine stress incontinence as a primary surgical option or as a combined procedure during an anterior prolapse repair.

The anatomical study shows that the TOT is a minimally invasive procedure with a very low risk of obturator nerve and vessel perforation due to the distance between these structures and the tape. This distance represents a considerable guarantee of safety of these structures at risk during this procedure. The tape is positioned below the endopelvic fascia which avoids bowel injury or risk of perforation of the iliac vessels, described for instance with TVT or similar procedures. The direction of the tape is a guarantee of avoiding hyper correction. The angle between the urethra and the tape is on average 15 degrees and no anti anatomical tensions which pushes the urethra toward the pubic bone are applied. The tape lies under the urethra re-establishing the anatomical support that restrains hypermobility.