129

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COMPARISON OF ANATOMICAL AND CLINICAL RESULTS OF THE TRANSOBURATOR TAPE TECHNIQUE (TOT) USING ULTRASOUND

Hypothesis / aims of study

The advantage of minimally invasive procedures in the treatment of stress urinary incontinence (SUI) is that high cure rate is combined with low perioperative morbidity. The transobturator suburethral tape is a new technique using a polypropylene tape inserted via the transobturator route. It produces tension free stabilization of the mid urethra rather than fixation of the bladder neck . The needle used to place the TOT is passed through a groin incision, the obturator membrane and around the descending ischiopubic ramus. The transobturator tape forms a subfascial hammock of support under the urethra. Our study was carried out to evaluate the morphologic aspect of the TOT and understand which anatomical changes are correlated with a successful result.

Study design, materials and methods

We studied 21 women who underwent a TOT procedure in our clinic for SUI. We included only pts with a single tape procedure. All the pts underwent ultrasonographic evaluation 6 months after TOT employing three techniques (endovaginal and transrectal using a 7.5 MHz biplanar probe, perineal using a convex 3.5 MHz probe), using a 2 axis system ( ), to evaluate the shape and the position of the tape, its distance from the bladder neck and from the pubic symphysis, the mobility of the proximal urethra in relation to the surgical outcome (cured, improved, failed).

Results

18 pts were cured , 1 pt was improved, 1 was cured from SUI but had “de novo” urge incontinence and 1 failed. In the group of cured patients the cranial edge of the tape was situated an average of 12 mm above the symphysis on the x axis an an average of 15 mm on the y axis. During Valsalva manoeuvre it moved to 1 mm above the symphysis on the x axis and 13 mm on the y axis. The average tape movement was 10 mm and it occurred in a rotational motion compressing the tape against the symphisis. During Valsalva the bladder neck and proximal urethra were pushed against the cranial edge of the tape showing their compression and angulation over the tape. In a transverse scan, the distance of the 2 arms from the rabdosphincter was 23 mm. In 4 pts the length and arrangement of the 2 arms of the tape were asymmetrical. In the pt failed the position of the cranial edge of the tape during Valsalva manoeuvre was similar (13 mm on the x axis and 13 mm on the y axis) but the tape movement was decreased (3 mm). The bladder neck and proximal urethra do not angulate on the tape but they were quite fixed. Similar pictures were seen in the patient with "de novo" urge incontinence.

Interpretation of results

In the cured pts the TOT procedure seems not to alter the urethral mobility nor to elevate the bladder neck and proximal urethra. An important parameter for continence seems to be the tape mobility as the two pts with troubles had a fixed tape and urethra. If the length and position of the 2 arms of the tape were asymmetrical it didn't affect the result. The angle of the TOT is less acute than that of traditional pubovaginal sling procedures.

Concluding message

This ultrasound study demonstrates that the position of the TOT is quite similar to the natural position of the pubourethral ligament. The use of multiple ultrasound approaches gave an optimal view of the pelvic floor.