

THE TRANSOBTURATOR TAPE (T.O.T. ®) IN THE TREATMENT OF FEMALE STRESS URINARY INCONTINENCE: MECHANISM OF ACTION

Aims of Study

The minimally invasive procedures currently available for the treatment of female stress urinary incontinence are largely based on the concept of the hammock described by De Lancey [1] and the integral theory by Ulmsten and Papa Petros [2]. The aim of this anatomical study was to analyse the mechanism of action of the transobturator tape (T.O.T. ®).

Methods

10 female anatomical subjects preserved without formol, aged between 74 and 89 years.

The T.O.T. ® was inserted as described in the first description of the technique, with the subject in the gynaecologic position and with an urethral catheter. An anterior vaginal incision was made over the middle third of the urethra, followed by lateral dissection of the space between the anterior wall of vagina and urethra towards the obturator foramen. A short incision was made in the thigh, 1 cm away from the lower margin of the ischiopubic ramus, at the plane of the urethral meatus. A special tunneler (Helical™) was passed through this incision towards the vaginal incision.

Abdominal and perineal dissection was performed to underline the anatomical elements supporting the urethra which are involved in the route of the tape.

Results

The T.O.T. ® passed above the perineal membrane and deep transverse perineal muscle and under the levator ani muscle at the level of its puborectal part. It passed under the tendinous arch of the pelvic fascia and into the muscular and fascial attachments of the vagina (pubovaginal muscle and paravaginal fascia).

It seems to reinforce the pelvic floor parallel to it. Its position in the plane and direction of the fibromuscular transverse tissue restores the vaginal hammock.

The T.O.T. ® acts at the posterior aspect of the middle third of urethra at the level of the striated sphincter (rhabdosphincter) offering a support. Its simple position remedy to the hypermobility of the urethra and to the loss of efficacy of the striated sphincter muscle of urethra. It respects the normal mobility of the cervico-urethral junction.

All the urinary continence mechanism in female seems rest on the transversal structures and the support they offer to the sphincteric part of urethra.

Conclusions

The T.O.T. ® acts as a support and not as a suspension. It emphasises the functional role of the transversal structure of the perineum in the stability and efficacy of the striated sphincter at the middle third of urethra.

References

[1] DE LANCEY J.O.L.

Structural support of the urethra as it relate to stress urinary incontinence : the hammock hypothesis

Am. J. Obstet. Gynécol., 1994, 170, 1713-1720

[2] PAPA PETROS P.E., ULMSTEN U.

An integral theory of female urinary incontinence.

Acta. Obstet. Gynecol. Scand. 1990; suppl.153, 69, 1-79