

# SUBURETHRAL SLINGS IN THE TREATMENT OF STRESS URINARY INCONTINENCE IN WOMEN

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**Abstract:** *The adjustment of suburethral slings “tension free” (TVT – tension free vaginal tape or TOT – transobturator tape) represents the preferred method for many urologists for the surgical treatment of stress urinary incontinence. There are many controversies regarding one or another method used, but it is the surgeons choice depending on his experience.*

**Key words:** *stress urinary incontinence, suburethral slings, TOT, TVT.*

## 1. Introduction

Stress urinary incontinence (SUI) represents the loss of urine through the urethra, which takes place at a moment of physical effort which leads to an increase of intraabdominal pressure. Stress urinary incontinence can be mild (just a few drops of urine, or only during sustained effort) or severe (great loss of urine or during mild physical effort) [1].

This disease knows an increase in frequency and stress urinary incontinence is still a underdiagnosed disease. Regardless, the psychological and social impact of this pathology regarding women is obvious, numerous patients considering themselves handicapped in a socio-human way [2, 3].

The occurrence in some important European Countries is: 17-28% in France, 4.6 -16.6% in Italy, 13.5-28.5% in Spain and 24.5-27% in Great Britain [2], [4].

The mechanisms of appearance for the stress urinary incontinence are not yet eluded.

The neuromuscular dysfunction of the pelvic floor is considered of great importance in the development of this disease but also trauma or other dysfunctions of the sustain tissues of the urethra or bladder neck. Lately there are more and more discussions about the loss of intrinsic urethral tonus. This represents a consequence of urethral mucosal atrophy or of the neuromuscular dysfunction of the striated sphincter.

As it was recently determined, the causes of this disease are not well known, but the development of stress urinary incontinence is obviously related to a few risk factors such as: pregnancy (especially birth), menopause, obesity, chronic pulmonary disease, chronic constipation, sustained physical effort,

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pelvic irradiation, surgical interventions in the pelvic sphere [1, 2], [4, 5].

Stress urinary incontinence diagnostic is mainly based on interrogation. This has to and some urine loss tests. Imagistic investigations are very useful for the diagnostic, especially the abdominal echography, cystourethrography and the intravenous urography. Cystoscopy offers us information referring to other possible cause of incontinence.

Last but not least, the usual laboratory tests complete the large picture that concerns the patient and constitutes the mandatory time during the preoperative evaluation. Extremely important are: haemogram, biochemistry, urine culture, urine analysis and coagulation tests.

Stress urinary incontinence treatment is based on some hygienodietetic measures, quitting smoking, weight loss, avoiding sedentariness, but also avoiding excessive and sustained efforts. Above these, as a conservatory treatment, reeducation of the urinary bladder measures, Kegel exercises, estrogen therapy, electrical stimulation methods [1, 2, 3].

Minimal invasive surgical treatment is less used and consists of injecting resorbing or nonresorbing agents or installing paraurethral balloons.

The main curative method for this disease is the surgical treatment. This consists especially of containing mechanisms restoration using surgical methods. The main surgical method used in this purpose is the Burch technique, a procedure with implantation of an artificial sphincter and anterior colporaphy.

In the last period, a new surgical procedure has been dictated in the whole world: the adjustment of suburethral slings in a „tension free” way. This way TOT and TVT represent the main procedures used in the treatment of stress urinary incontinence. Both techniques are based on sustaining the urethra during physical

be done in great detail, because it can offer extremely precious information. Physical examination will contain the abdominal examination, perineogenital examination efforts and this is made possible by installing suburethral unresolvable slings.

Regarding the advantages and disadvantages of the two methods, the studies are contradictory but the main majority does not demonstrate a significant difference between the 2 methods, regarding the results, but regarding the possible complications. The risk of intraoperative complications is higher when using TVT.

Adjusting the transobturator suburethral slings placed by „tension free” type (TOT) has been first described in Holland in 1998. This technique basically means the insertion of a polypropylene sling through the obturator hole by the „outside-in” or „inside-out” procedure.

TVT is different because of the passing of the retropubic sling and it's appearing at a tegumentary suprapubic level [1, 2, 3], [5].

The purpose of this study is to evaluate the efficiency, but also the complications of the transobturator suburethral slings placed by „tension free” type (TOT), in the experience of the Urology Clinic from Brasov.

## 2. Materials and Method

Between January 2008 and November 2008 in the Clinic of Urology, part of the Emergency County Hospital Brasov, there have been treated by TOT 28 patients diagnosed with stress urinary incontinence.

The medium age was 58 years old.

Investigation protocols contain detailed clinical history, full clinical examination (including vaginal examination), laboratory examinations (urine analysis, urine culture and coagulation tests), urethrocytoscopy (with concomitant use

of Marshall or Ulmsteen procedures), abdominal echography and in some cases intravenous urography.

In 14 cases the administration of estrogens pre and post operative was considered opportune.

All the procedures were performed under rahtidian anesthesia.

Postoperatory, all the patients have received analgesics, antiinflammatory, antibiotic medication accompanied by low molecular weight heparin.

The urethro-vesical catheter was pulled out at 24-48 hours postoperatory.

The patients have been released 4 days after surgery and reexamined 14 days after releasing.

### 3. Results

Both techniques (TOT and TVT) can be accompanied by post-op complications. With all that, for the patients operated in our clinic, the results were favorable, in all the 28 cases.

We will now state the main possible complications during surgery and post-op:

- intraoperative bleeding – 0;
- bladder or urethra perforation – 0;
- development of urethrovaginal fistula – 0;
- erosion of the vaginal wall - 3 cases with favorable evolution under conservatory treatment;
- urinary retention (acute urinary retention after taking out the urethro-vesical catheter) – 0;
- urinary infection – 0;
- disuria - 5 cases (spontaneously disappears after 24 hours);
- dyspareunia – 0;
- detrusor hyperactivity „de novo” – 0;
- voiding urgency - 6 cases.

### 4. Discussions

Urinary incontinence represents a frequent disease in women's pathology, but it is still avoided by patients in their discussion with the doctor, because of diverse reasons. It is appreciated that at least 5 years will pass until the SUI patients present herself to the surgeon concerning this matter.

Urinary incontinence has a huge effect on many aspects of the patient's life. It can affect the social life, sexual life and most of all the psychological comfort of the woman. Sleep disorders are numerous and can determine chronic fatigue and decrease in concentration. An aspect not to be neglected is the self image of the woman, which in these situations is profoundly affected. Numerous patients describe their psychological and social state as a great handicap [1 – 3].

It is considered that in the curative treatment of SUI, there are 2 procedures which have proven their effectiveness on long term: Burch colposuspension and suburethral slings procedures.

There are numerous controversies linked to choosing one of the „tension free” methods TOT or TVT, but in general the choosing of one belongs to the urologist.

Studies exist, that demonstrate the differences between TOT and TVT, not regarding the rate of success but referring to the post-op complications. The studies sustain that TOT is the safest procedure and much faster in execution. It is appreciated that TVT, even if rarely followed by complications, has a much higher risk of lesions of some important elements, because of the approach of the front abdominal wall. The only threatening reason in TOT is based on the possible lesion of the obturator vessels, even if pelvic arteriography demonstrates that if the

steps of the technique are followed correctly, the insertion of the guided needle is made through a relatively safe area, at least 3 cm away from the obturator vessels [1], [2],[6], [7], [8].

The advantages of TOT seem to be: safer technique, faster, a low risk of lesions of some important elements, a low risk of bleeding, no retropubic passage, no abdominal incision and a lower rate of irritative symptoms. In case of obese patients or patients that have abdominal post-op scars, the use of TVT techniques is quite risky, therefore TOT represents the chosen technique for these cases.

Post-op voiding urgency seems to be the most frequent complication in patients to which TVT was performed. Other complications like (fever, hematoma, vaginal erosion) represent a subject of controversy (more frequent in TVT in some studies) [1], [2], [6].

Our study concludes that the treatment of stress urinary incontinence with TOT is an effective treatment, with minimal complications and well supported by patients.

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