

*Comparison between Tension free vaginal tape  
and Trans-obturator tape operations in  
management of genuine stress incontinence*

Essay for fulfillment of Master degree in  
Obstetric and Gynecology

*BY*

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## **Abstract**

Stress urinary incontinence in females has been a problem due to the variety of treatment methods with long hospital stay and with many complications.

The new minimally invasive methods named Tension-free vaginal tape and Transobturator tape had changed the view as regarding the easy technique, the less complications and the less time spent at hospital.

## **Key words**

- ✓ Female stress urinary incontinence
- ✓ Tension-free vaginal tape (TVT)
- ✓ Transobturator tape (TOT)

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## *List of abbreviation*

|                     |                                         |
|---------------------|-----------------------------------------|
| cm                  | Centimeter                              |
| cm H <sub>2</sub> O | Centimeter of water                     |
| CMG                 | Cystometrogram                          |
| gm                  | Gram                                    |
| ICS                 | International continence society        |
| ISD                 | Intrinsic sphincter deficiency          |
| LPP                 | Leak point pressure                     |
| mg                  | Milligram                               |
| MUCP                | Maximum urethral closure pressure       |
| MUT                 | Multichannel urodynamic testing         |
| OAB                 | Overactive bladder                      |
| PVR                 | Postvoid residual                       |
| SUI                 | Stress urinary incontinence             |
| TOT                 | Trans obturator tape                    |
| TVT                 | Tension-free vaginal tape               |
| TVTS                | Tension-free vaginal tape secure system |
| UPP                 | Urethral pressure profile               |

## **Introduction**

Stress urinary incontinence is defined by the International Continence Society (I.C.S) as the complaint of involuntary leakage of urine during effort or exertion or during sneezing or coughing. When stress incontinence is confirmed during urodynamic testing by identifying leakage from the urethra coincident with increase abdominal pressure in absence of bladder contraction, the diagnosis of urodynamic stress incontinence is made. **(Abrams et al 2002)**

The world medical literature produces more than one article per week on stress incontinence, and probably more than 200 operations have been suggested as surgical management for this condition. This alone should alert the surgeon to the fact that the ideal operation has yet to be described. **(L. Lewis Wall 2003)**

The aim of any surgical procedure for urinary incontinence should be the correction of any anatomical defect responsible for the loss of urine, as descent of the bladder neck outside the sphere of intra-abdominal pressure, intrinsic sphincter weakness and loss of urethral support.

The surgeon should be careful not to be too aggressive to avoid urinary retention or voiding dysfunction which may occur and be aware of each individual patient's medical / surgical history,

age, severity of symptoms and occurrence of prolapse or other related conditions

**(Vssallo and Karram 2003)**

Taking the above concerns into account, one should decide whether an abdominal or vaginal approach is better. The side-effects of each operation should also be considered, so clinical opinion continues to play a large role in the choice of the operation. While transvaginal needle suspension and Kelly's plication have fallen out of favor due to their inability to provide lasting cure, they still may play an important role in certain carefully selected patients.

**(Vassallo and Karram 2003)**

Recently, the primary approach to stress incontinence involves a choice between bladder neck suspension procedures and sling operations. Gynecologists have traditionally reserved sling operations for cases of recurrent incontinence or in patients with evidence of obvious intrinsic sphincter deficiency, while many urologists apply sling procedure as a primary treatment of genuine stress incontinence. From the theoretical point of view, the major drawback of sling procedures has been the concern for voiding dysfunction caused by the obstructive nature of sling operations. In comparison, patients undergoing retro pubic

suspension can also develop voiding dysfunction and are at risk for developing pelvic organ prolapse.

**(Nyggard and Heit 2004)**

A new surgical technique have been developed which offer long term results with reduced hospital stay and a quicker return to normal activity with low incidence of complications.

Tape procedure is one of these new techniques. In this model continence is maintained at the mid-urethra and not at the bladder neck. Tension-free Vaginal Tape (TVT) was the first developed tape procedure, where a prolene mesh tape is placed at mid-urethra using a special trocher where the tape will be lying free at rest and only exerts sufficient pressure on the urethra during cough to prevent leakage of urine, it is simple to perform under local, regional, or general anesthesia and was proved to be a safe treatment for stress urinary incontinence, with minimal complications in experienced hands however, injuries have occurred, likely due to the blind passing of metal trocars from the vagina upward through retro-pubic space, routine cystoscopy is therefore required.

**(Merlin and Ulmsten 2001)**

Less invasive procedure was developed which is Trans Obturator Tape (TOT) using polyester ribbon passed through the obturator foramen and around the urethra in a space which was

extensively studied and was found to be safe to work in. It has transmuscular insertion through obturator and puborectalis muscle. This reproduces the natural suspension fascia of the urethra while preserving the retro-pubic space. It produces the same high cure rate as Tension-free vaginal tape (TVT) but with no risk of bladder injury and very low risk of other complications as sepsis and post-operative urinary retention.

**(Delorme E., 2001)**

## **Aim of the work**

To compare Tension-free vaginal tape (TVT) and Trans obturator tape (TOT) operations and find the more suitable operation for patients with genuine stress incontinence.

# INTRODUCTION

## **Definition**

The International Continence Society's terminology committee has defined lower urinary tract dysfunction into the logical sequence of symptoms, signs, and urodynamic diagnosis. **(Luber, 2004)**

The symptom of Stress Urinary Incontinence (SUI) is described as “the complaint of involuntary leakage of urine on effort, exertion, sneezing or coughing.” This differs from symptom of urge incontinence “the complaint of involuntary leakage accompanied by or immediately preceded by urgency”. **(Abram et al., 2003)**

The sign is the observation by the physician of involuntary leakage of urine from the urethra on exertion, effort, sneezing or coughing. **(Abram et al., 2003)**

The International Continence Society's committee on terminology described urodynamic SUI as “the involuntary leakage of urine during increased abdominal pressure, in the absence of a detrusor contraction, noted during filling cystometry” **(Luber, 2004).**