

**EFFECTS AND EFFECTIVENESS OF THE TENSION-FREE
VAGINAL TAPE PROCEDURE FOR TREATMENT OF FEMALE
STRESS URINARY INCONTINENCE**

NINA KUUVA

Department of Obstetrics and Gynecology, Helsinki University Central Hospital

University of Helsinki, Finland

Academic Dissertation

To be publicly discussed with permission of the Medical Faculty of the University of Helsinki, in the Auditorium of the Department of Obstetrics and Gynecology, Helsinki University Central Hospital, Haartmaninkatu 2, Helsinki, on January 13th 2006, at 12 noon.

HELSINKI 2006

<http://ethesis.helsinki.fi>

ABSTRACT

The most usual type of female urinary incontinence (UI) is stress urinary incontinence (SUI). Conservative treatment options are helpful in mild cases, but treatment of moderate to severe SUI symptoms often requires operative means. Traditional operation alternatives, including open colposuspension and suprapubic slings, are invasive procedures associated with high risks and complications, whereas long-term results of less invasive operations, like needle suspension procedures, have been poor. Development of the tension-free vaginal tape (TVT) procedure evolved from the need to find an effective minimally invasive anti-incontinence procedure that could be performed on a day care basis under local anesthesia.

This study was undertaken to investigate the short- and long-term effectiveness as well as the intraoperative, immediate postoperative and long-term adverse events associated with the novel TVT procedure and to evaluate its applicability in general clinical practice.

We prospectively studied the effects and effectiveness of the TVT procedure in single center populations and in a multicenter population. The single center material included a heterogeneous group of 161 women comprising primary, recurrent, mixed urinary incontinence (MUI) and low-pressure urethra (LPU) cases and a homogeneous group of 54 women with recurrent SUI who were to undergo the TVT procedure. The multicenter material included a homogeneous group of 90 women with primary SUI who were to undergo the TVT procedure. Moreover, we retrospectively evaluated nationwide complications among 1455 women treated with TVT. All the involved surgeons were certified to perform the TVT procedure.

In the short term (< 5 years) the cure rate in the heterogeneous group was 87.0% and the cure rates in different incontinence categories were as follows: primary SUI 88.0%, recurrent SUI 84.4%, MUI 81.4% and LPU 66.7%. In the homogeneous group of recurrent SUI patients, the objective cure rate was 89.6% and the subjective rate 80.4%. The urge symptom improvement rate was 80% in the heterogeneous group and in the homogeneous group the urge symptom cure rate was 100%.

In the long term (≥ 5 years) the cure rate in the homogeneous group of primary SUI patients was 84.7%. In the heterogeneous group the rate of negative postoperative cough tests was 76.7% and it varied from 63.6% to 79.2% in different incontinence categories, whereas the rate of negative

postoperative pad tests was 85.3% and it varied from 81.8% to 93.9% in different incontinence categories. The urge symptom cure rate ranged from 56% to 89%.

Intraoperative and immediate postoperative (≤ 2 months) adverse events were recorded as follows: estimated bleeding of > 200 ml 0%–3.3%, bladder perforations 1.1%–5.9%, voiding difficulty 4.3%–7.6%, retropubic hematomas 0%–3.3%, urinary tract infection (UTI) 4.1%–7.8% and wound infections 0%–2.5%. In the nationwide material bladder perforation (3.8%) was the most common perioperative complication, whereas voiding difficulty (7.6%) was the most common postoperative complication.

Long-term (> 2 months) adverse events were recorded as follows: *de novo* urge 3.1%–5.9%, urogenital prolapses 1.6%–2.3%, recurrent UTI 1.2%–9.3%, lower urinary tract (LUT) symptoms 19.4% and tape exposure 3.1%.

Our results suggest that after a proper training period the TVT procedure is a safe and effective anti-incontinence operation, which can be successfully performed in the majority of patients generally thought to benefit from anti-incontinence surgery.