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ANTTI VALPAS
**EVALUATION OF LAPAROSCOPIC
COLPOSUSPENSION AND THE
TENSION-FREE VAGINAL TAPE
PROCEDURE IN THE SURGICAL
TREATMENT OF FEMALE STRESS
URINARY INCONTINENCE**

Academic Dissertation to be presented with the
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Abstract

Though not a life threatening condition, involuntary loss of urine is a miserable situation. It has a multidimensional effect on the afflicted individuals, both men and women – and for the society. The purpose of this study was to evaluate two modern, minimally invasive surgical techniques for the treatment of female stress urinary incontinence (SUI). The techniques evaluated were laparoscopic colposuspension with mesh and staples (LCM) and the tension-free vaginal tape procedure (TVT).

The study consisted of four parts. The first part (Study I) was an observational retrospective follow-up study. Data on the first forty patients operated on with LCM at Oulu University Hospital were collected. Patients had SUI or mixed urinary incontinence (MUI) with predominantly stress incontinence. The Studies II–IV were parts of a randomized, multicenter clinical trial, where LCM was compared with TVT. According to the predefined inclusion criteria 128 SUI women were randomly allocated into two treatment groups: 70 patients received TVT treatment as allocated and 51 LCM. There were seven drop-outs after randomization.

After one year of follow-up the cure and improvement rate of the patients operated with LCM were ~ 90%. Also a significant improvement was found in Urinary Incontinence Severity Scores (UISS). At base line the score was 12.1 and after one year follow-up 2.7 ($p < 0.001$). The bladder perforation rate was 15%. In Study II immediate cure rates and complications of LCM and TVT were studied. After six weeks of follow-up there was no difference in cure rates (~ 90%) between the procedures. There was no difference in complication rates. A significant difference was found in the use of anti-inflammatory / opioid drugs in the immediate post-operative period to relieve the pain in favour for TVT. Hospital care was also significantly shorter after TVT than LCM. After one year of follow-up (Study III) TVT was found to give better result both objectively and subjectively. Negative stress test result was recorded in 85.7% in the TVT group and 56.9% in the LCM group. A significant difference was also found, when Visual Analogue Scale (VAS), King's College Health Questionnaire (KHQ) and UISS were used as outcome measures, in the favour of TVT. When 48-hour pad test was used as outcome measure there was no statistically significant difference between the groups. The cost-effectiveness (Study IV) of TVT was found to be better than that of LCM after one year of follow-up.

In conclusion, the results of this study suggest, that TVT procedure is on the whole a cost-effective alternative for LCM in the treatment of female SUI.

Keywords: cost-effectiveness, female urinary incontinence, randomized clinical trial, surgery