

THE CHANGES OF VOIDING PATTERN AND THE RISK FACTORS OF VOIDING DYSFUNCTION AFTER MID-URETHRAL SLING (TVT-S, TVT-O, T-SLING)

Hypothesis / aims of study

The purpose of this study was to determine the changes of voiding pattern after mid-urethral sling according to the time and to investigate the risk factors of voiding dysfunction occurring 1 day after surgical treatment of urinary incontinence. We also evaluated whether type of mid-urethral sling can be affected to early voiding pattern after operation.

Study design, materials and methods

From March 2007 to December 2010, 247 women underwent a mid-urethral sling, TVT-s, TVT-o and T-sling in order of precedence. Twenty-one were excluded from analysis because of pelvic organ prolapse, previous anti-incontinence operation, detrusor underactivity (<20cmH₂O) and low flow rate (<15 ml/sec). The data from 226 women were collected. Seventy women were operated by TVT-s (group I), 74 were operated by TVT-o (group II) and 82 were operated by T-sling (group III). Multiple parameter including demographic data, type of surgical procedure (TVT-s, TVT-o & T-sling), IPSS questionnaire, post-operative pain score, uroflow and residual urine were analyzed at post-operative 1 week, 4 weeks, and 12 weeks. Preoperative urodynamic study findings were analyzed. Postoperative voiding dysfunction was defined as post-void residual urine measuring greater than 100cc at two or more successive trials.

Results

Total IPSS scores were 7.3±2.3, 7.5±3.1, 8.1±2.5 in group I, II and III preoperatively, 13.6±5.5, 14.2±8.4, 14.1±6.2 at 1 week, 9.8±5.3, 12±6.1, 14.1±4.6 at 4 weeks, and 8.7±6.5, 11.4±5.3 and 13.2±3.6 at 12 weeks. The voiding sub-scores (1, 3, 5, 6) were 4.5±2.3, 5.2±2.9, 5.3±3.8 in group I, II and III preoperatively, 7.77±4.8, 9.83±6.2 and, 10.4±3.9 at 1 week, 6.6±3.8, 9.8±5.9 and, 9.6±4.8 at 4 weeks and 6.9±3.7, 8.4±3.9 and, 8.3±3.8 at 12 weeks. Qmax were 21.52±14.75, 22.5±8.9 and 24.1±12.4 ml/sec in group I, II and III preoperatively, 19.3±6.8, 15.3±6.7 and 18.3±5.9 at 1 week, 21.5±7.5, 17.2±11.2 and 20.3±4.7 at 4 weeks, and 21.7±6.3, 19.1±10.2 and 20.6±4.4 at 12 weeks. Pain score were 3.2±0.8, 5.1±1.1, and 5.2±1.3 in group I, II and III on op. date, 2.2±0.6, 2.5±0.7 and 2.6±0.6 at 1 week, 1.0±0.3, 1.1±0.4 and 1.1±0.2 at 4 weeks, and 1.0±0.3, 1.0±0.2 and 1.0±0.1 at 12 weeks. Age, preoperative VLPP, MUCP, maximal capacities were not associated with an increased risk of voiding dysfunction. Low Qmax had a tendency to increase postvoid residual volume but, Qmax was not statistically significant. Post-void residuals were not clinically different and seven patients(3.1%) required postoperative catheterization for urinary retention (median duration 3 days)

Interpretation of results

Regardless of flow rate, the patients who complaint voiding difficulties were 4.3% (3/70), 14.9% (11/74) and 19.5% (16/82) in group I, II and III at 12 weeks. Early postoperative voiding difficulty, which urethral catheterization was needed, occurred in 4.4% (10/226) of women, 2.9% (2/70) in group I, 4% (3/74) in group II and 6% (5/82) in group III. No preoperative urodynamic findings including age were associated with an increased risk of voiding dysfunction.

Concluding message

There was a tendency of decreasing flow rate and increasing IPSS score after mid-urethral sling. 13.3% (30/226) of mid-urethral sling patients still complaint voiding difficulty with or without low flow rate. No preoperative urodynamic parameters were related to an increased risk of voiding dysfunction. TVT-s may minimally affect the early voiding dysfunction, but in the other hands, we have to watch over the long term success rate.

References

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Is this a clinical trial?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	No
This study did not require ethics committee approval because	Compare of standard surgical procedure
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes