

RISK INDICATORS FOR LONG-TERM FAILURE OF THE RETROPUBIC TENSION-FREE VAGINAL TAPE PROCEDURE

Hypothesis / aims of study

To investigate potential risk indicators for long-term (10-year) subjective and objective failure of the retropubic tension-free vaginal tape procedure (TVT)

Study design, materials and methods

Secondary risk analysis was performed using data from a previously published multi-centre study [1]. The data were merged with preoperative and operative data individually stored in the National Incontinence Registry Database. Subjective data from 483 women and objective data from 327 women were obtained 10 years after retropubic TVT surgery. A validated questionnaire was used for subjective data [2] and a cough/jump stress test for objective data. Uni- and multivariate logistic regression analyses were performed using preoperative and operative independent variables extracted from the National Incontinence Registry Database. The significance level for entering explanatory variables into the multivariate models was 0.20. We then used a backwards variable selection by stepwise removal of explanatory variables with significance levels > 0.05. The two separate outcomes (dependent variables) were 10-year subjective failure defined as women stating not cured, and objective failure defined as ≥ 1 -gram weight increase of a pad during stress testing. Repeat SUI surgery over the 10-year follow-up time was counted as failures for both outcomes. The 10-year incidence (absolute risk) of long-term subjective and objective failure is presented as the percentage of women having the outcome after dichotomization of variables.

Results

Age ≥ 56 years at the time of surgery was associated with both long-term subjective failure (OR: 2.15, CI: 1.40-3.30, $p < 0.001$) and objective failure (OR: 2.81, CI: 1.30-6.09, $p = 0.009$). Age cut-off was found using Receiver Operating Characteristics (ROC). Mixed incontinence was associated with long-term subjective but not objective failure, but only if the urgency incontinence component was severe (OR: 2.33, CI: 1.27-4.28, $p = 0.006$). Surgical complications occurring at or immediately following surgery were associated with both outcomes in the univariate analyses, but only remained significantly associated with long-term subjective failure when adjusting for age (OR: 3.02, CI: 1.53-5.95, $p = 0.001$).

Table 1. Long-term subjective failure 10 years after TVT

Independent variables assessed N = 483	10-year incidence (%)	Unadjusted OR (95 % CI)	Adjusted OR (95 % CI)
Total patient cohort	25.7		
Age at time of surgery			
< 56 years	18.3	1.00	1.00
≥ 56 years	34.5	2.36 (1.56-3.59)	2.15 (1.40-3.30)
Preoperative urgency incontinence index score (0-8)			
0	17.3	1.00	1.00
1-4	22.2	1.37 (0.74-2.53)	1.33 (0.71-2.51)
5-8	32.7	2.32 (1.29-4.18)	2.33 (1.27-4.28)
Preoperative stress incontinence index score			
≤ 7 (<33.3 percentile)	22.7	1.00	
8-9 (33.3-66.7 percentile)	24.3	1.09 (0.63-1.91)	
10-12 (> 66.7 percentile)	28.4	1.35 (0.84-2.17)	
Preoperative stress test			
0-24 grams (< 33 percentile)	26.1	1.00	
25-61 grams (33.3-66.7 percentile)	22.4	0.82 (0.49-1.38)	
62-350 grams (> 66.7 percentile)	26.9	1.04 (0.63-1.73)	
Preoperative MUCP			
≥ 20 cm H ₂ O	23.6	1.00	
< 20 cm H ₂ O	21.1	0.87 (0.28-2.71)	
Primary SUI surgery	25.3	1.00	
Recurrent SUI surgery	33.3	1.48 (0.65-3.38)	
No concomitant POP surgery	24.8	1.00	
Concomitant POP surgery	34.9	1.63 (0.84-3.16)	
No surgical complications	23.8	1.00	1.00
Surgical complications	45.2	2.64 (1.39-5.04)	3.02 (1.53-5.95)

Table 2. Long-term objective failure 10-years after TVT

Independent variables assessed	10-year	Unadjusted OR	Adjusted OR
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N = 327	incidence (%)	(95 % CI)	(95 % CI)
Total patient cohort	10.1		
Age at time of surgery			
< 56 years	6.0	1.00	1.00
≥ 56 years	15.8	2.95 (1.37-6.35)	2.81 (1.30-6.09)
Preoperative urgency incontinence index score (0-8)			
0	8.7	1.00	
1-4	8.7	1.00 (0.36-2.85)	
5-8	11.7	1.39 (0.51-3.79)	
Preoperative stress incontinence index score (0-12)			
≤ 7 (<33.3 percentile)	6.8	1.00	
8-9 (33.3-66.7 percentile)	9.2	1.38 (0.48-3.98)	
10-12 (> 66.7 percentile)	13.3	2.10 (0.86-5.11)	
Preoperative stress test			
0-24 grams (< 33 percentile)	7.4	1.00	
25-61 grams (33.3-66.7 percentile)	7.6	1.03 (0.37-2.86)	
62-350 grams (> 66.7 percentile)	13.8	2.01 (0.79-5.08)	
Preoperative MUCP			
≥ 20 cm H ₂ O	6.3	1.00	
< 20 cm H ₂ O	9.1	1.50 (0.17-12.92)	
Primary SUI surgery	7.3	1.00	
Recurrent SUI surgery	5.6	0.75 (0.09-6.26)	
No concomitant POP surgery	10.3	1.00	
Concomitant POP surgery	7.4	0.69 (0.16-3.07)	
No surgical complications	9.0	1.00	1.00
Surgical complications	22.2	2.90 (1.08-7.83)	2.58 (0.94-7.09)

Interpretation of results

Higher age at the time of surgery was in this cohort associated with increased risk of both subjective and objective long-term failure. A strong preoperative component of urgency incontinence, and surgical complications at or immediately following surgery, were associated with risk of long-term subjective, but not objective failure.

Concluding message

To better counsel patients wanting incontinence surgery, it is important to know as much as possible of the long-term results. Even though the 10-year results after retropubic TVT are found to be good for all patients [1], a higher age at time of surgery, a strong preoperative component of urgency incontinence, and complications occurring at or immediately following surgery, are risk indicators for long-term (10-year) failure.

References

1. Svehningsen R, Staff AC, Schjøtz HA, Western K, Kulseng-Hanssen S. Long-term follow-up of the retropubic tension-free vaginal tape procedure. *Int Urogynecol J* 2013 Feb 16. Epub ahead of print DOI 10.1007/s00192-013-2058-2
2. Kulseng-Hanssen S, Borstad E. The development of a questionnaire to measure the severity of symptoms and the quality of life before and after surgery for stress incontinence. *BJOG* 2003; 110:983-8

Disclosures

Funding: Funded by the institutions and by grants from the Nordic Urogynaecologic association (NUGA) and the Norwegian Urodynamic Discussion Group (UDYDIG) **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics not Req'd:** The Regional Committee for Medical and Health Research Ethics in South-Eastern Norway concluded that the study was a quality assurance measure for treatment already established and therefore exempt ethical approval outside the participating departments. Approval was given from all Department heads and institutional Personal Data Officers and written consent was obtained from all participating women. **Helsinki:** Yes **Informed Consent:** Yes