

Martan A¹, Masata J¹, Svabik K¹, Drahoradova P¹, Pavlikova M², Hlasenska J³, Voigt R⁴
 1. Dpt. of Obstetrics and Gynecology, Charles University, Prague, Czech Rep., 2. EuroMISE centre of the Charles University and Academy of Sciences, Prague, Czech Rep., 3. EuroMISE centre of the Charles University and Academy of Sciences, Prague, Czech Rep., 4. Dpt. of Obstetrics and Gynecology, Robert-Koch-Krankenhaus, Apolda, Germany

CHANGES IN VALUES OF MUCP AND ITS POSITION AFTER TVT OPERATION

Hypothesis / aims of study

To ascertain how the TVT operation affects the value and position of MUCP in women without any previous uro-gynaecological operation. If possible, also to determine how the values of these parameters differ between groups of women who are without problems after the operation, women who suffer urgency, and women who continue to suffer from stress incontinence.

Study design, materials and methods

59 women were included in the study with an average age of 54.8 (SD-10.5), BMI 27.6 (SD-4.7) and parity 1.9 (SD-0.6). A urodynamic examination was performed on the patient in the supine position, the urinary bladder was filled with 300 and 500 ml of normal saline solution. The pressure profile was examined at rest, at maximal Valsalva manoeuvre and with coughing. During examination of the urethral pressure profile we ascertained MUCP, the functional length of the urethra (FUL) and the relative distance of the MUCP point from the inner urethral orifice, which was calculated as the ratio of the MUCP position with respect to FUL. Of the 59 patients who underwent the operation, 47 were subsequently with no problems (A), 8 suffered with urgency symptoms (B), and in 4 (C) stress incontinence still persisted.

The data were summarised as means with SD and medians. Measurements before and after the operation were compared using the paired t-test and paired Wilcoxon test where appropriate. Groups A, B, C were compared using ANOVA and Kruskal-Wallis test where appropriate. The level of significance was set at 0.05.

Results

No statistically significant changes were observed in values of MUCP before and after surgery, at rest, at Valsalva or with coughing, or with varying volumes of the urinary bladder of 300 and 500 ml. Nor did we observe any difference in values of MUCP between the individual groups (A,B,C) of patients after surgery.

We observed mild shortening of FUL at both volumes of the bladder at rest, but no change was observed at Valsalva. The distance of the point of MUCP from the inner urethral orifice was shifted by the operation, from 44% to 57% at rest; small shift at Valsalva was not statistically significant. No statistically significant differences in these parameters were observed between subgroups A, B, C (Table 1).

Table 1 a, b, c

MUCP, FUL and position of MUCP for before and after operation at rest and during maximal Valsalva manoeuvre – successful operations only, bladder filled with 300ml of sterile saline

a)

MUCP	at rest	during maximal Valsalva-value manoeuvre	
before operation	46.0 (22.3)	41.0 (19.6)	0.0471
after operation	43.5 (22.1)	43.9 (24.6)	NS
p-value	NS	NS	

b)

FUL	at rest	during maximal Valsalva-value manoeuvre	
before operation	25.7 (5.6)	22.7 (6.1)	NS
after operation	22.6 (5.8)	22.7 (6.9)	NS
p-value	0.0039	NS	

c)

Position of MUCP	at rest		during maximal manoeuvre		Valsalva-p-value
	mean	median ratio	mean	median ratio	
before operation	11.5	44%	12.1	52%	NS
after operation	12.8	57%	12.6	56%	NS
p-value	0.0010		NS		

NS=non significant

Tables a, b: data are presented as means (standard deviation), p-values are obtained from paired t-tests

Table c: data are presented as means of measured position from the internal orifice of the urethra and as medians of the ratio of the MUCP position with respect to FUL; p-values are obtained from the Wilcoxon paired test

For the group of patients with MUCP before surgery ≤ 30 cm H₂O, 67% women were without problems after the operation. For women with MUCP >30 cm H₂O, 84% were without problems. This difference, however, was not statistically significant.

Interpretation of results

The results of our study imply that the value of MUCP at rest and at Valsalva manoeuvre do not change after surgery. The surgery slightly shortens the FUL at rest, but no such change was registered at Valsalva. The distance of the MUCP point from the inner urethral orifice at rest slightly lengthened, which can be explained by placing the tape under the urethra between the medium and lower third of the urethra. The tape supports the urethra and slightly moves the MUCP distally upwards, which thus shifts towards the outer urethra orifice and may consequently cause a minimum shortening of the FUL at rest - which, however, does not show at Valsalva.

Concluding message

The results of our study imply that the tape in TVT operation, if properly placed and not tight, does not change MUCP either at rest or at Valsalva. It slightly shortens the FUL at rest and causes a minor shift of the MUCP point towards the outer urethral orifice. Pre-operation values of MUCP cannot be used to forecast the effect of the operation, though we are aware of the fact that our results were ascertained on a rather small number of patients in the groups of patients with complications.

This work was supported by the Grant Agency of the Ministry of Health of the Czech Republic, Grant NH7378-3

FUNDING: This work was supported by the Grant Agency of the Ministry of Health of the Czech Republic