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THE CHANGES IN ULTRASOUND PICTURE AFTER TVT PROCEDURE

Hypothesis / aims of study

The aim of the present study was to analyze ultrasound examination of urethral mobility after TVT.

Study design, materials and methods

The prospective study included 30 patients (mean age 50,4 years), who underwent TVT procedure between 1999 and 2002. Inclusion criteria was SUI, type II. Patients were divided into 3 groups.

Group I involved 10 patients, with total subjective cure;

Group II – 10 patients suffered from voiding dysfunction, such as poor stream, stop-start voiding, the need to strain and incomplete emptying (residual urine over 100 ml). Uroflowmetry showed obstructive urination in this group.

Group III involved 10 patients with recurrence of stress incontinence.

In each patient the introital ultrasound examination was performed with a vaginal ultrasound probe 7,5 MHz. The examination was performed after the patient had a desire to void. The mean volume of the bladder was 265 ml and was assessed by abdominal ultrasound examination.

The following parameters were established: angle α is the angle between the line, connecting the vertical axis of symphysis with the line of proximal urethra and bladder neck; angle β – posterior vesico-urethral angle (between proximal urethra and bladder bottom).

Measurements of ultrasound parameters were performed in rest and during Valsalva maneuver.

These parameters in each patient had been compared with original multidimensional questionnaire of QoL. The score of questionnaire range from 0 to12 (0 – very satisfactory, 12 – very unsatisfactory).

All data were analyzed statistically using Mann-Whitney criteria. For all analyses $p<0,01$ or $p<0,02$ was considered to indicate statistical significance.

Results

The mean value of angle α in group I in rest 20 – 28°, during Valsalva maneuver – 35 – 38°, angle β – 121 – 127 ° in rest, and 130 – 137 ° during Valsalva maneuver. Statistically no differences were observed in the same parameters in group III.

In group II the mean value of angle α in rest was 15 – 18°, during Valsalva maneuver difference was only 5° or less. Angle β –75 – 85 ° in rest and 105 – 110 ° during Valsalva maneuver.

According to the questionnaire, sum score in the group I was 0,9, in the group II – 5,4 and 5,6 in group III.

Interpretation of results

Basing on our ultrasound studies, we found out statistically significant differences in the urethral mobility between groups I, III and group II.

In group II urethral hypomobility probably is the reason for voiding dysfunction. The questionnaire of QoL shows, that continent patients (group II) were as dissatisfied with the results of surgery as patients with recurrence of stress incontinence (group III).

Concluding message

Ultrasound examination is a useful and cheap tool in the investigation of changes in urethral mobility after TVT. Urethral hypomobility is one of the reasons for voiding dysfunction.