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Tanase K[1], Takahara N[1], Seki M[2], Inamura S[3], Okada M[4], Taga M[5], Kurokawa T[6], Yokokawa R[7], Maegawa M[8], Shioyama R[9], Akino H[1], Yokoyama O[1]

1. *Department of urology, Faculty of medical science, University of Fukui,* ***2.*** *Department of urology, Nagano red cross hospital,* ***3.*** *Department of urology, Noto general hospital,* ***4.*** *Department of urology, Kouseiren Takaoka hospital,* ***5.*** *Department of urology, Fukui saiseikai hospital,* ***6.*** *Department of urology, Fukui red cross hospital,* ***7.*** *Department of urology, Nagahama city hospital,* ***8.*** *Department of urology, Nakamura hospital,* ***9.*** *Department of urology, Sugita Genpaku memorial Obama municipal hospital*

ANALYSIS OF RISK FACTORS FOR POST-OPERATIVE URINARY INCONTINENCE IN PATIENTS RECEIVING TVT-O SURGERY. CAN WE PREDICT RISK FACTORS BY PRE-OPERATIVE CHAIN CYSTOGRAPHY?

Hypothesis / aims of study

Tension-free vaginal tape-obturator (TVT-O) mid-urethral sling surgery was preformed to patients with stress urinary incontinence. We analyzed the anatomical changes in chain cystography （CCG） and the voiding function before and after TVT-O operation. Furthermore, we investigated the risk factors of remaining urinary incontinence in post-operative state, whether it could be predicted in pre-operative CCG.

Study design, materials and methods

Thirty-five patients with stress or mixed incontinence received TVT-O mid-urethral sling surgery in our institute. Pre- and post-operative voiding functions and CCG were assessed in 32 patients. Post-operative evaluations consisted of questionnaire, uroflowmetry, and CCG 3 months after surgery. Overactive bladder symptom score (OABSS), international prostate symptom score (IPSS), quality of life questionnaire (QOL), international consultation on incontinence questionnaire-short form (ICIQ-SF) and King's health questionnaire (KHQ) were adopted as questionnaires for lower urinary tract symptoms or QOL. Maximum flow rate (Qmax), average flow rate (Qave) and residual urine (RU) were measured by uroflowmetry. Using CCG on rested and the valsalva style with stand up position, we evaluated the posterior urethrovesical angle (PUVA), length from lower end of the pubic symphysis to the internal urethral orifice, angle of long axis of the pubic symphysis and posterior urethra, length of the internal urethral orifice and the line of the pubic-coccygeal bone, mobility of the proximal urethra.

We also investigated whether remaining urinary incontinence after TVT-O could be predicted pre-operatively by CCG, and what anatomical changes were happened in the pelvic floor in patients by TVT-O.

Results

All patients had over 120 degrees in PUVA at the valsalva style with stand up position, and 7 patients beyond 180 degrees. Patients with over 180 degrees in PUVA showed much more decrease in post-operative OABSS, ICIQ-SF, RU, and also increase in post operative Qmax and Qave, with statistically significance, compared to patients with PUVA less than 180 degrees. (fig.)

Stress incontinence was cured in all of 32 patients. However, 9 of these patients remained urgency incontinence. All patients with remained incontinence complained of urgency incontinence and stress incontinence before the surgery. In the patients with remained urgency incontinence were significantly higher in pre-operative OABSS ($P<0.01$) and ICIQ-SF ($P<0.001$) and significantly lower in QOL ($P< 0.001$). In radiological examinations, patients with remained urgency incontinence had lower pre-operative PUVA at rested and valsalva style with stand up position ($P< 0.05$), and lower post-operative mobility of the proximal urethra ($P<0.05$).

Interpretation of results

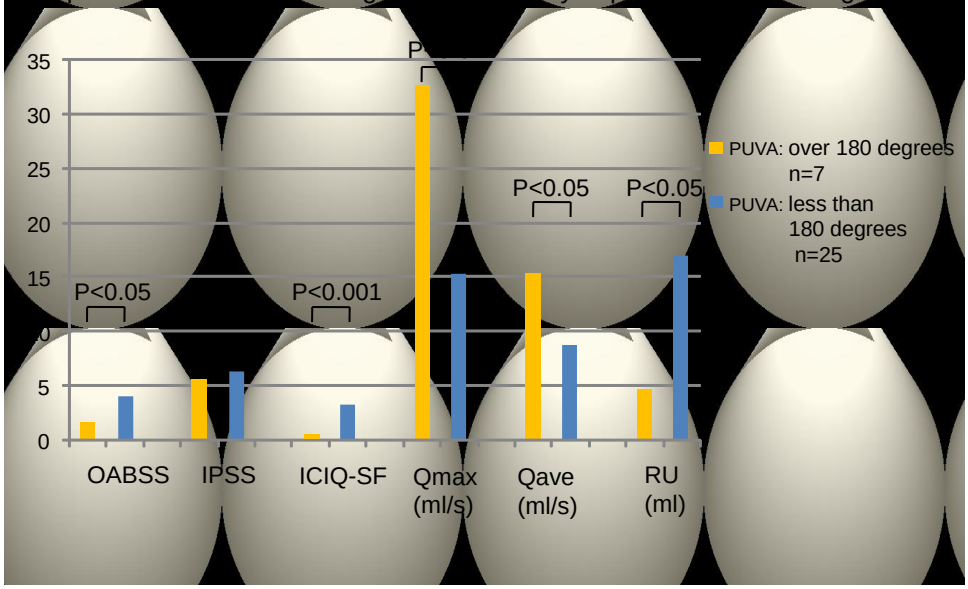
The aim of mid-urethral sling operations such as TVT, TVT-O is to support mid-urethral region with tension free tape and to correct the urethral hypermobility. This study suggests that TVT-O mid-urethral sling surgery is useful for patients with pure stress incontinence, and pre-operative evaluation by CCG is useful to predict of post-operative urinary incontinence. Especially, patients with over 180 degrees in PUVA at the valsalva style with stand up position, TVT-O surgery may has the possibility to cure symptoms without influencing voiding function and incontinence. In patients with less than 180 degrees in PUVA, urgency incontinence may be remained after the surgery. These patients may be estimated as lower PUVA because of latent subclinical pelvic organ prolapse.

Concluding message

The pre-operative measurement of PUVA in CCG is beneficial for predicting post-operative urgency incontinence after TVT-O.

Fig.

Comparison of each parameter between patients with over 180 degrees in PUVA and with less than degrees pre-op ely. Parameters patients 180 degre ntly impro the surger



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