418

Kirschner-Hermanns R[1], Naijjari L[2], Zeuch V[1], Blum R[2], Maass N[3], Heidenreich A[4]
1. *Continence Clinic/Clinic of Urology, University Clinic, RWTH Aachen,* ***2.*** *Continence Clinic/Clinic of Genecology, University Clinic, RWTH Aachen,* ***3.*** *Clinic of Genecology, University Clinic, RWTH Aachen,* ***4.*** *Clinic of Urology, University Clinic, RWTH Aachen*

2D AND 3D/4D PERINEAL ULTRASOUND – FIRST EXPERIENCES IN MEN WITH URINARY INCONTINENCE AFTER RADICAL PROSTATECTOMY

Hypothesis / aims of study

With newer insights in anatomic features of in women with stress incontinence perineal ultrasound has developed to one of the most important tools in the diagnosis of female urinary incontinence in addition to functional tests like urodynamics. Bladder neck and urethral hypermobility support are evaluated using functional 2D and more recently also 3D/4D perineal ultrasound. This has been shown especially beneficiary before doing surgery in stress incontinent women. Similar to surgical approaches in women, male slings have become an accepted method of surgery for men with mild and moderate stress incontinence after radical prostatectomy. We investigated the possibilities of perineal ultrasound in men who are incontinent after radical prostatectomy.

Study design, materials and methods

In 20 male patients with incontinence after RP and in 11 male patients with no incontinence (ICIQ and ICS *male* questionnaire and no pad use) we accomplished in collaboration with our gynecological colleagues within our interdisciplinary Continence Clinic a 2D and 3D/4D perineal ultrasound. For this we used a GE Kretz Volusion 730 expert system with an abdominal ultrasound probes (7-4 Mhz) which an acquisition angle of more than 85 degree which allows a 3D/4D multislice imagine in real time.

Results

In all patients bladder neck, urethra, the mobility of the proximal urethra at pressing and coughing and paraurethral tissue could be seen well. Especially with 3D/4D techniques scaring after adiuvant radiotherapy which can limit hypermobility of the proximal urethra could be visualized. Similar to the measurements in female patients hypermobility of the urethra could be quantified. Hypermoblity of the bladder neck and the proximal urethra was only seen in patients with incontinence. In all patients conscious contractions of pelvic floor muscle could be demonstrated not only to the investigator but also to the patient.

Interpretation of results

Our first results show that particularly before planning a functional surgery of stress incontinence after radical prostatectomy using a male sling procedure male, perineal sonographic investigation might be a useful diagnostic addition especially to functional urodynamic testing. Analog to TVT in women with stress incontinence the sling is intended to gives additional support of the urethra and to reduce hypermobility of the urethra. For conservative treatment perineal 2D sonography can be used for visual bio feedback to check for correct and sufficient pelvic floor contraction after physiotherapy and to teach patients who don't know how to contract their pelvic floor muscles adequately. Although biofeedback is partly also possible with transrectal ultrasound perineal ultrasound is much less interfering with pelvic floor contraction and much more comfortable for the patient.

Concluding message

2D and 3D/4D perineal ultrasound are new techniques which provide more insight in diagnosis of male stress incontinence after radical prostatectomy. Its usefulness in planning surgical procedures on the one hand and conservative treatment on the other hand should be further evaluated.

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Was this study approved by an ethics committee?	**Yes**
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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**