

## DIAGNOSIS OF POST RADICAL PROSTATECTOMY INCONTINENCE AND LOWER URINARY TRACT FUNCTION WITH: 'TREATMENT SIMULATING URODYNAMIC INVESTIGATION TECHNIQUE'.

### Hypothesis / aims of study

Incontinence after radical prostatectomy affects the patient's quality of life and the treatment of this condition is challenging the medical community. Adequate selection of treatment depends on a correct diagnosis. Urodynamic investigation (UDI) is the cornerstone in the diagnosis of incontinence after radical prostatectomy. The a priori prevalence of sphincter deficiency is in this group of patients, however, high. Without performing urodynamic investigation sphincter deficiency can be expected in these patients on the basis of history and symptoms (e.g: 'incontinence since prostatectomy –and not before the surgery'; 'dry at night or when sitting quietly and wet while rising and -or coughing and -or lifting weight') or on the basis of signs: patient leaks as a result of coughing during clinical investigation (when the bladder is not empty as a result of continuous leaking). Initial treatment of post prostatectomy incontinence is pelvic floor muscle training.

Pelvic floor muscle training is effective in many patients. A proportion of patients however remains bothersome incontinent after one year of conservative measures and training. Many of these patients request further treatment. Investigators have not being able to predict success of surgical treatment (bulking, sling, cuff or other treatments) on the basis of severity of incontinence or urodynamic parameters as leak point pressure, detrusor overactivity or detrusor compliance (1,2) Diverse methods have been published for preoperative urodynamic evaluation but standardization is lacking.(3)

We are a tertiary referral centre with the skills and the resources to perform artificial sphincter implantations. We designed a standardized urodynamic workup to evaluate the eligibility for surgical therapy: the treatment simulating urodynamic investigation technique (TSUIT).

### Study design, materials and methods

The majority of the patients that we present was referred for diagnosis and treatment for incontinence after radical prostatectomy. Thirty-nine patients were mean age 66 (53-77) years at the time of urodynamic investigation. Of all patients 25% underwent robotic prostatectomy. Pelvic floor exercise programs according to local protocols were completed by 58% of patients with, in 29% of the patients, 'some' or 'positive' effect. Nevertheless 91% of the patients was completely incontinent but 61% had no urine loss while asleep. 58% of the patients voided on the toilet more than once a day and 74% used condom catheter or diapers. The other patients used 'only' pads. When referred to our hospital for further investigation 50% was on (or had tried) anticholinergic treatment and 14% of the patients has had injections with bulking agents.

Subtraction urodynamic studies were done in sitting position with 9F transurethral catheter with room temperature water with medium fill-rate.

All to date published studies have used (ICS) standard urodynamic investigation and have concentrated on the demonstration of (the cause) of incontinence. We have tested the feasibility of a treatment simulating urodynamic investigation technique (TSUIT). We have, with this technique, not focussed on incontinence but on the storage and emptying capacity by *preventing* leakage. We have done so by simply squeezing of the penis during cystometry.

### Results

With the treatment simulating urodynamic investigation technique (TSUIT) we were able to fill until an average capacity of 374 ml (range 150-1000 ml) in these patients (that had usually continuously leaking empty bladders while physically active). 42% had normal bladder storage phase, no detrusor-(over)activity and normal sensation. In 31% storage phase was abnormal because of detrusor overactivity and in 27% patients because of reduced compliance. Four patients (7%) had obstructed voiding on pressure flow analysis.

### Interpretation of results

As a result of our TSUIT -diagnosis, concentrating on the situation that is to be expected after restored sphincteric function, we have observed various filling and voiding abnormalities that we would not have seen trough filling until 'only at' (stress or urge) leakage. We are better aware of detrusor behaviour at larger volume and also could perform pressure flow analysis of voiding, in all patients. We have better been able to direct our treatment.

We have observed that TSUIT is feasible, provides plausible and applicable results and causes no extra discomfort to the patient.

We propose (to International Continence Society) to consider TSUIT as a (much demanded) standard for workup of patients with (clinical stress) urinary incontinence after radical prostatectomy. However the real advantage of TSUIT over conventional urodynamic technique can only be demonstrated in a comparative prospective trial where also the outcome is measured.

### Concluding message

Treatment simulating urodynamic investigation technique (TSUIT) for patients with incontinence after radical prostatectomy is feasible with no (extra) patient discomfort over standard urodynamic technique. The results of TSUIT-diagnosis are relevant for selection of treatment and anticipation of lower urinary tract function after restored sphincter function. TSUIT can be adopted as a new standard diagnostic strategy for patients with incontinence after radical prostatectomy.

### References

1. Rocha et al: Urology, 71, 85-89 (2008)
2. Thiel et al: Urology, 69; 315-319 (2007)
3. Porena et al: Eur Urol, 52; 38-45 (2007)

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none

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**Is this a clinical trial?**

No

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**What were the subjects in the study?**

NONE

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