

SEVERE POSTPROSTATECTOMY INCONTINENCE: THE ROLE OF URODYNAMICS.

Hypothesis / aims of study

The recommendation of performing complete invasive urodynamic evaluation in all patients before surgical treatment of postprostatectomy incontinence (PPI) is not evidence-based and can be questioned. We studied urodynamic and clinical findings of patients with patient-reported persistent severe PPI after radical prostatectomy (RP) for prostate cancer (PCa) using standardized methods and terminology according to the International Continence Society (ICS) (1,2). The main aim was to evaluate the role of urodynamics before surgical treatment of PPI.

Study design, materials and methods

This national prospective study concerned 844 patients treated with RP between 2005-2009. Adverse effects were patient-reported by questionnaires (EPIC-50, UCLA-PCI) at baseline and 12-month follow-up by 735 patients (87% response rate). Based on an additional follow-up questionnaire (EPIC-26) in February 2011 we identified patients with *persistent PPI*.

These instruments have four identical items comprising the urinary incontinence domain (UID) (3). Response options for each item are converted to a 0-100 scale, with higher scores representing better QOL. The UID score is the mean of the four item scores. To select patients for clinical evaluation we defined *patient-reported severe PPI* as UID score <35, corresponding to the 80-percentile of the UID scores.

Ninety-four patients (13%) with *patient-reported persistent severe PPI* were invited to a clinical and urodynamic evaluation. Where indicated, surgery for PPI was performed and postoperatively the patients were evaluated by a final questionnaire (EPIC-26) in January 2014.

Results

Seventy-six patients (81%) attended clinical evaluation at median 30 months (range 12-73 months) after RP. In this sample median number of pads/day was 3.5 (range 1-13) and median urinary leakage was 85 grams/24h (range 4-1870 g/24h) (Figure 1). All patients but one complained of stress urinary incontinence and 12 of urgency incontinence.

Among these patients 75 (99%) had intrinsic sphincter deficiency (ISD) and in 51 patients (67%) urodynamic bladder dysfunction was coexisting with ISD: 21 had detrusor overactivity (DO), 9 had reduced bladder compliance, 5 had bladder outlet obstruction, and 39 had reduced bladder contractility (the latter two according to Schäfer's nomogram and the bladder outlet obstruction index, BOOI, and the bladder contractility index, BCI, respectively). However, low BCI was confirmed as clinically significant only in three patients who also had reduced bladder voiding efficiency on catheter-free uroflowmetry. Similarly, 24 patients' bladder outlets were regarded as obstructed or equivocal (high BOOI); however 20 had normal free flow and/or no stenosis on urethrocystoscopy. Stenosis was found in three patients. Valsalva voiding was observed in 13 patients and was not significantly more common in patients with high BOOI or low BCI. The presence of bladder dysfunction was not significantly associated with degree of PPI (UID score and leakage in g/24h).

Surgery for PPI was offered 53 patients and by January 2014, 46 patients had been operated with either AMS800® or a sling (AdVance®, ATOMS®). Of the operated patients, 98% "would choose surgery for PPI again" and 86% reported less "problem with urinary leakage" postoperatively compared with preoperatively. Satisfaction with the outcome of PPI surgery was not associated with presence of bladder dysfunction or other preoperative variables, but was only associated with more severe urinary symptoms postoperatively (i.e. less improvement).

Interpretation of results

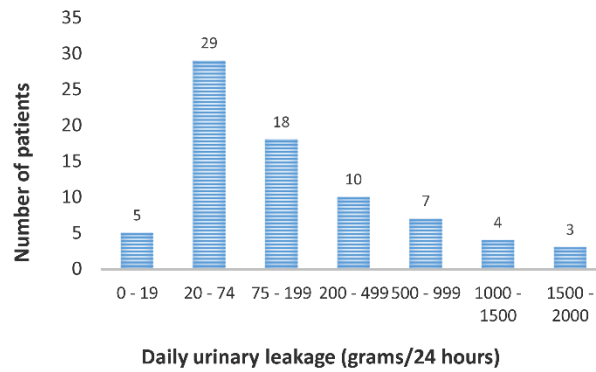
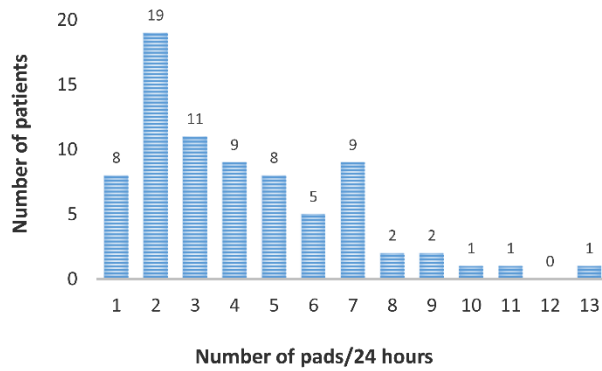
The pressure flow study assesses the bladder contractility and the bladder outlet, but the standard urodynamic definitions might be invalid for prostatectomized men. After RP the urethra offers little resistance to micturition, thus low detrusor pressures are sufficient for a normal urinary flow rate. Hence, the indices BOOI and BCI can be misleading in patients with PPI, and should be interpreted with care and rather be used in addition to free uroflowmetry and urethrocystoscopy where indicated.

Our results indicate that the recommendation of performing urodynamics in all patients before PPI surgery is questionable. Major dysfunctions will be symptomatic or obvious on non-invasive catheter-free uroflowmetry and warrant closer evaluation with invasive urodynamics/urethrocystoscopy. Regarding cystometry, minor asymptomatic bladder dysfunctions are probably not necessary to identify before PPI surgery. DO that becomes symptomatic after PPI surgery, can be treated medically. Finally, a pressure-flow study is not necessary if the free uroflowmetry is normal, indicating normal bladder contractility and outlet.

Concluding message

In our sample with patient-reported persistent severe PPI the presence of bladder dysfunctions was not significantly associated with degree of PPI prior to surgery, being referred for PPI surgery, or later satisfaction with PPI surgery. Our results support the view that complete invasive urodynamic investigation is not necessary in all patients undergoing PPI surgery, only in selected cases.

Figure 1. Pad use and leakage (g/24h) among the 76 patients with patient-reported persistent severe post-prostatectomy incontinence.



References

1. Abrams P, Cardozo L, Fall M, et al.: The Standardisation of Terminology of Lower Urinary Tract Function: Report from the Standardisation Sub-committee of the International Continence Society. *Neurourol Urodyn* 21: 167-178, 2002
2. Schafer W, Abrams P, Liao L, et al. Good urodynamic practices: Filling cystometry and pressure flow studies. *Neurourol Urodyn* 2002;21:261-274.
3. <http://www.med.umich.edu/urology/research/epic.html>

Disclosures

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