

URODYNAMIC ABNORMALITIES IN 44 PATIENTS BEFORE RADICAL PROSTATECTOMY.

Aims of Study

Urinary incontinence after radical prostatectomy is a frequent problem. Percentages ranging from 5 to 60 have been reported. The problem is mostly ascribed to urethral sphincter deficiency which can be a consequence of less than perfect operative technique possibly in combination with existing anatomical variations in sphincter geometry. However, it is unknown whether preoperative prognostic factors for postradical prostatectomy incontinence exist. To elucidate this question we performed preoperative urodynamic studies in a consecutive series of men who were listed to undergo a radical prostatectomy for prostate cancer. The aim of the study was to establish a baseline database of the prevalence of urodynamic abnormalities in such group of men. Such information can later be used in correlative studies of postoperative lower urinary tract dysfunction. Eventually, urodynamic information could be used as part of the counselling process of patients before a radical prostatectomy.

Methods

From February 2000 to March 2002 a total of 165 men were listed for a radical prostatectomy in our institution. All continent men who lived within a distance of approximately 75 km of the institution were asked whether they were willing to participate in a randomised study of the effect of physiotherapy-guided pelvic floor exercises versus exercises instructed to patients through an information folder. 44 men consented to participate in this study and were randomised to one of both treatment arms if they lost more than 2 grams of urine at a 1-hour pad test one week after removal of the stenting transurethral catheter. All 44 men underwent comprehensive urodynamic study before the operation. The urodynamic study consisted of two medium speed filling cystometries with room temperature water or contrast fluid: one in supine and one in standing position. Transrectal and transurethral (2x) catheters were used to measure rectal and intravesical pressures. Each cystometry was followed by a pressure/flow study. Additionally, two urethra pressure profile measurements were performed with a 5F catheter 20 mm/sec. Detrusor instability was defined as phasic activity in the filling phase with an amplitude of more than 15 cm H₂O. Bladder outlet obstruction parameters (URA, p/Q plot), W_{max} and compliance were calculated by AUDACT™ software.

Results

These men had an average age, PSA and prostate volume of 62 years (range 47-71), 8.1 ug/l (range 2.2-28) and 55 cc (range 24-115). cT1, cT2 and cT3 prostate cancer was diagnosed in 17, 22 and 5 men, respectively. Mean bladder capacity was 467cc (range 300-930) and 25 patients showed instable contractions during the filling phase (range 20-88 cm H₂O). Low bladder compliance was never found. 16 males were obstructed according to URA >29 H₂O, 11 according to the ICS p/Q nomogram. Also 15 males were found in the equivocal zone. Mean W_{max} was 8.7 (range 6.3-15.3). Residual volumes more than 50cc were found in 10 measurements. From those who were obstructed according to the ICS nomogram (n=11) six showed bladder instability (ranges 23-88 cm H₂O). In the urethra pressure profile measurements we measured a mean sphincter(peak) pressure of 53 cmH₂O (range 30-87) and a mean functional urethra length of 52 mm (range 15-77).

Conclusions

Urodynamically, the study reveals bladder instability in more than 50 % of the subjects before radical prostatectomy. These abnormalities would imply that urinary incontinence after radical prostatectomy has a multifactorial etiology and cannot be ascribed to secondary urethral sphincter deficiency alone. Bladder instability cannot be ascribed to bladder outlet obstruction alone since it was also seen in a considerable portion of non-obstructed patients. The urodynamic outcomes also suggest that a large number of middle aged males should have lower urinary tract symptoms (LUTS) because of the large number of patients with bladder outlet obstruction and/or instability we found. The prevalence of LUTS in society can thus be underestimated in the middle aged male. Of course, we need pre and post-radical prostatectomy urodynamic and quality of life studies in large groups of patients to reveal prognostic factors for postradical prostatectomy incontinence. These studies can also be helpful in detecting the prevalence of LUTS in the middle aged male.