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# URODYNAMIC EVALUATION OF CHANGES IN URINARY CONTROL AFTER RADICAL RETROPUBIC PROSTATECTOMY

## Hypothesis / aims of study

Since January 1999 to December 2004, 364 patients underwent radical prostatectomy. 78 of them were evaluated by a urodynamic examination before and after surgery to obtain more information about the factors that affect continence.

## Study design, materials and methods

Urodynamic testing was done in 78 patients before surgery and at 1 and 3 month follow-up. Evaluation included the evaluation of bladder sensation, measurement of maximum cystometric bladder capacity, compliance and detrusor over activity, urethral functional profile length and the maximal urethral closure pressure (MUCP)at rest and during voluntary contraction of external sphincter. The statistic evaluation was done by means of T test for comparison of results obtained pre and post surgery.

## Results

10 out of 78 (12%) patients presented any degree of incontinent after 3 months.

| Parameters | Incontinent: Mean | Continent: Mean | T value | P |
|---|---|---|---|---|
| MUCP (cm H2O) Before surgery | 57,3 | 97,5 | -3,34 | 0,0013 |
| MUCP (cm H2O) 1 month | 43,8 | 71,6 | -2,53 | 0,0138 |
| MUCP (cm H2O) 3 months | 51 | 81 | -2,39 | 0,0193 |

## Interpretation of results

Among the evaluated parameters the bladder sensation and the maximum bladder capacity there were no statistical significance in the two groups (continent and incontinent patients). Also the urethral functional length did not showed any statistical significance if compared the continent group to the incontinent. The only significant parameter observed was the maximal urethral closure pressure. The mean value in the incontinent group was 43,8 cm H2O (SD 26) at 1 month and 51 cm H2O (SD 20,9) at 3 months. In the continent group the Maximum urethral closure pressure was 71,6 cm H2O (SD 31,6) at 1 month and 81 cm H2O( SD 36.6). The pressures differences were statistically significant in the two groups with p= 0.0193. Surprisingly the most statistically significant data was the comparison of the Maximum urethral closure pressures in the two groups at the base line, before the surgery. The incontinent group has the MUCP of 57,3 cm H2O (SD 19,1) while in the continent group was much higher, 97,5 cm H2O (SD 37,2) with the p= 0.0013

In both continent and incontinent group there where a tremendous reduction of the MUCP immediately after the surgery (1 month) with t= 4,14 and p= 0.00005. The reduction of the maximal urethral closure pressure indicate the partial functional damage of the sphincter muscular structure. The partial restore of the sphincter function starts within the first month. The other surprising finding was the leak of meaning of the urethral functional length. This should be considered for a critical review of the modification of the surgical technique for the bladder – urethral anastomosis, recently proposed in the literature, techniques that are advocating the increasing of the urethral length as mile stone in increasing continence rate after radical prostatectomy.

## Concluding message

After radical prostatectomy significant changes in urethral sphincter measurement are noted. Urethral closure pressure before the surgery seams to be an interesting parameter in the

patients counselling and can be probably used as a negative predictive factor for post operative incontinence.