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PELVIC FLOOR FUNCTION OUTCOME AFTER NERVE-SPARING RADICAL PROSTATECTOMY

Hypothesis / aims of study

Radical prostatectomy is the main cause of male urinary incontinence. In men the pelvic floor muscles (PFM) have to support the closing mechanism of the urethra and anus. The role of the PFM during sexual activity is also both contracting and relaxing. After radical prostatectomy the involuntary bladder neck sphincter is damaged and continence relies on an effective voluntary urinary sphincter supported by strong PFM that may present a partial neurogenic denervation. Sexual activity may be affected directly by neurovascular damage and indirectly by the presence of urinary incontinence. Van Kampen et al demonstrated the significant effectiveness of pelvic floor exercises in post-prostatectomy incontinence (1). In a previous prospective randomized study we investigate the effectiveness on urinary continence of early PFM training (PFMT) on a large population, that had undergone radical retropubic prostatectomy (RRP). We verified that nerve-sparing RRP (nsRRP) was associated with a better continence outcome than non nerve-sparing (p=0,0002) (2). The aim of this retrospective study is to evaluate the status of urinary continence and erectile function after nsRRP to investigate if the status of postoperative continence has in impact on erectile function.

Study design, materials and methods

In 183 patients we performed a standard uni or bilateral nsRRP for organ confined cancer. Preoperative sexual potency was evaluated according to the IIEF(5). Exclusion criteria included prior bladder or prostate surgery, prior urinary or faecal incontinence, neurogenic dysfunction of the lower urinary tract, a history of OAB, and pre-surgery erectile dysfunction (ED). We performed (by single skilled surgeon: G.N.) a retrograde anatomic radical retropubic prostatectomy, who requires the prostate be removed with controlled hemostasis to allow a careful apical dissection, visualization of the neurovascular bundles of the corpora cavernosa, and a bladder neck sparing. All patients used a phosphodiesterase type 5 inhibitors for prohylaxis/treatment of ED during the first 2 postoperative months. 78 patients took part in a structured PFMT program, 73 were not formally instructed. Postoperative evaluation: 1, 3, 6, and 12 months in the first year, every 6 months subsequently. Incontinence was assessed objectively using the 1 and 24 hour pad test, and subjectively by the ICS-male questionnaire. Sexual function was investigated by IIEF(5). A total of 151 patients after uni or bilateral nsRRP (respectively 22 and 129) were included in the study, continence status and erectile function were analyzed. We considered continent patients who use zero pads daily and sexual potent who have IIEF(5) score>21.

Results

Mean follow up period was 39,7 months (median 37±11,9). Overall 80,9% of the patients achieved continence after 18 months, with a significant sooner improvement (6 months) in PFMT group (Fisher's exact test p<0,0001). Rate of continence recovery was higher in younger than in older men (Pearson's product moment coefficient p<0,0001). Erection recovery was more likely in men who had uni vs bilateral nsRRP (Fisher's exact test p=0,0008). Young age was correlated to a significant potency recovery (Spearman's coefficient p<0,0001), also better continence status increased erectile function (chi-square test for trend p<0,0009) (Fig. 1).

Interpretation of results

Patients using zero pads had better erectile function than those using 1 or more pads daily. Age and continence showed a significant influence on postoperative erectile function recovery in multivariate logistic analysis (p<0,0001), moreover continence was significantly associated both to attempted bilateral nerve-sparing and age.

Concluding message

The advent of better understanding of the surgical anatomy of the prostate and the consequent more accurate excising technique, in association with rehabilitation programme for incontinence, and using of PDE5-inhibitors in the treatment of ED, has dramatically improved the management of these conditions. In our previous study we determined the positive influence of nerve-sparing technique on continence (2), this seems to be due to the preservation of almost a part of urethral sphincter innervations (3). In our study the preservation of both neurovascular bundles reduce incontinence and ED due to a preserved pelvic floor function, but also continence status seems to play a role on potency. We noted that patients dependent on 1 pad daily for urinary control experienced a significant reduction of their sexual function relative to those using no pads. Prevent and treat incontinence showed a collateral positive effect on erectile function with a rationale aim to improve pelvic floor function.

References

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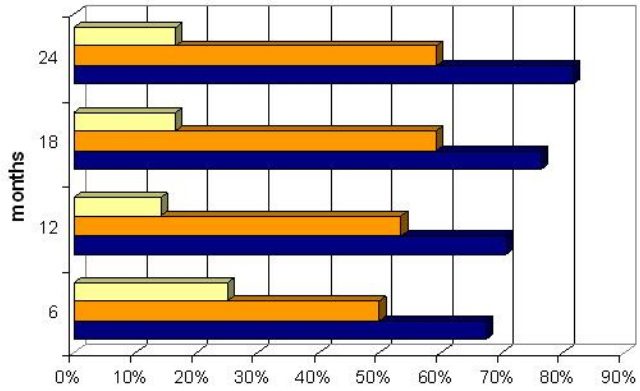

	6	12	18	24
Pads>1	25,00%	14,28%	16,60%	16,60%
Pads=1	50,00%	53,50%	59,20%	59,09%
Pads<1	67,41%	70,68%	76,27%	81,51%

Fig. 1: Erectile function and pads used daily.

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