

ONCOLOGY

Erectile Function Recovery After Nerve-Sparing Radical Prostatectomy for Prostate Cancer: Is Back to Baseline Status Enough for Patient Satisfaction?



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ABSTRACT

Introduction: Several definitions of erectile function (EF) recovery after bilateral nerve-sparing radical prostatectomy (BNSRP) have been proposed based on the results of the International Index of EF (IIEF).

Aim: We aimed at evaluating overall satisfaction (OS) after BNSRP according to the ability to achieve the pretreatment EF.

Methods: We evaluated data of 652 patients treated with BNSRP for clinically localized prostate cancer (PCa). Erectile dysfunction (ED) was classified according to the IIEF-EF domain score. Return to baseline EF was defined as patients who reached the same preoperative ED category during the 3-year follow-up. Cox regression analyses were fitted to predict return to baseline IIEF-EF and to predict OS defined according to the IIEF-OS in the overall population. Logistic regression analyses were performed to analyze OS in men who reached the back to baseline status.

Main Outcome Measures: The outcome of the study was to evaluate back to baseline EF status and to correlate it with postoperative OS.

Results: Preoperative satisfaction was reported by 218 (33.4%) patients. Postoperative satisfaction was achieved by 103 patients. Overall, 383 patients were able to achieve the preoperative IIEF-EF score. However, only 26.9% reported being satisfied. Age and preoperative IIEF-EF score were significantly associated with baseline IIEF-EF recovery (all $P \leq .02$). Patients who were able to return to baseline IIEF-EF were more likely to be satisfied ($P < .001$). Time elapsed between surgery and achievement of baseline IIEF-EF was significantly associated with OS ($P < .001$). Among patients who were able to achieve the baseline IIEF-EF score, a preoperative IIEF-EF of 22–25 and 26–30 was significantly associated with postoperative satisfaction (all $P < .001$).

Conclusion: After BNSRP, reaching the baseline IIEF-EF score is not always sufficient to obtain patient satisfaction. Only patients with a preoperative IIEF-EF ≥ 22 who reached the baseline score after surgery considered themselves satisfied. This should be taken into account in preoperative patient counseling.

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Key Words: Bilateral Nerve-Sparing Radical Prostatectomy; Erectile Function Recovery; Patient Satisfaction

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INTRODUCTION

Radical prostatectomy (RP) represents one of the most commonly used first-line treatment modalities in patients with localized prostate cancer (PCa).^{1–3} Despite excellent long-term oncological results, RP might have negative impact on functional outcomes, such as urinary continence (UC) or erectile function (EF).⁴ For this reason, the success of RP should be measured not only on cancer control outcomes but also on the recovery of full functional status.⁵ However, although the vast majority of patients will eventually recover UC over time,⁶ recovery of a satisfactory EF after RP still remains a major challenge.^{1,6–8} Wide ranges of EF

recovery rates have been reported due not only to patient selection but also to use of different surgical approaches and heterogeneous definitions.^{9,10} Several studies proposed different cut-offs based on the EF domain of the International Index of Erectile Function (IIEF-EF) to define postoperative EF recovery.^{11–13} However, this approach may have limitations, as many patients already suffer from moderate to severe ED prior to surgery. Therefore, it is unlikely they will ever reach high IIEF-EF domain score after RP. To overcome this limitation, the concept of “back to baseline” EF has been recently introduced with the aim of improving patient prediction outcomes and counseling.¹⁴ However, whether back to baseline status is associated with adequate patient satisfaction has never been tested. This is pivotal, since any definition of EF recovery after RP should be coupled with an assessment of patient sexual satisfaction. To address this void, we evaluated postoperative satisfaction and correlated it with back to baseline EF status in a large population of men treated with bilateral nerve-sparing RP (BNSRP). We hypothesized that reaching preoperative IIEF scores after BNSRP may not be always sufficient for adequate patient satisfaction. Our analyses would allow us to (a) validate the concept of back to baseline definition for EF recovery; (b) improve patient counseling and outcome predictions; (c) evaluate predictors of patient satisfaction, which may allow tailoring timely treatments according to individual patient characteristics.

MATERIALS AND METHODS

Study Population

After IRB approval was obtained, 725 clinically localized PCA patients treated with BNSRP at a single tertiary center between 2002 and 2013 were evaluated. In order to avoid biases, 73 patients who received adjuvant radiotherapy were excluded from the current analyses. This resulted in an overall cohort of 652 patients. Nerve-sparing technique was offered on the basis of baseline patient and cancer characteristics at diagnosis. Nerve-sparing approach was performed using a standardized technique that implied incising the levator and prostatic fasciae high anteriorly (1 and 11 o'clock positions) over the prostate, developing the plane between the prostatic capsule and the prostatic fascia, and displacing the neurovascular network localized between the 2 fasciae laterally.¹⁵

Covariates and Follow-up

All patients had complete data including age at surgery, Charlson Comorbidity Index (CCI), body mass index (BMI), preoperative PSA, and the IIEF questionnaire administered prior to surgery. Erectile function was categorized according to the classification by Cappelleri et al¹¹: no erectile dysfunction-ED (IIEF-EF score 26–30), mild ED (IIEF-EF score 22–25), mild to moderate ED (IIEF-EF score 17–21), moderate ED (IIEF-EF score 11–16), and severe ED (IIEF-EF score 0–10). All patients had complete preoperative satisfaction data, assessed by the overall satisfaction (OS) domain of the IIEF-EF administered prior to surgery (namely, IIEF-OS domain score) and

categorized as follows: “satisfaction” (namely, IIEF-OS domain scores 9–10) and “no satisfaction” (namely, IIEF-OS domain scores <9).¹² All patients were prospectively followed and had complete postoperative data on EF and OS. Patients were asked to fill the IIEF-EF and IIEF-OS every 3 months after surgery for a period of 3 years. Patients were encouraged to attempt sexual intercourse as soon as possible after catheter removal and were stimulated to use either a full dose of a phosphodiesterase type 5 inhibitor (PDE5-I) on demand or a low dose of PDE5-I every day for a period of 3 to 6 months. Intracavernous injection therapy was considered only in patients who did not respond to PDE5-Is. The decision on the type of ED treatment administered followed surgeon and patient discussion about possible treatment options and expectations.

Outcomes

Back to baseline EF status was defined as reaching the same or higher preoperative IIEF-EF category. Postoperative satisfaction was defined as IIEF-OS domain score of 9–10. Postoperative UC was defined as use of no pad over a 24-hour period.¹⁶ Time to back to baseline status consisted of the time period elapsed between surgery and back to baseline EF. For those patients who did not reach their back to baseline EF status, time to back to baseline status consisted of time between surgery and last observation.

Statistical Analyses

Medians and interquartile ranges (IQRs) were reported for non-normally distributed continuous variables. Frequencies and proportions were reported for categorical variables. Mann-Whitney and χ^2 tests assessed the statistical significance of differences in medians and proportions, respectively. First, Kaplan-Meier analyses were used to assess back to baseline EF status. The same analysis was performed to assess time to postoperative satisfaction in the overall population and after stratifying patients according to year of surgery (2002–2005 vs 2006–2009 vs 2010–2013). Second, uni- and multivariable Cox regression analyses were used to identify predictors of back to baseline EF status. Covariates consisted of age, BMI, CCI, surgical technique, postoperative continence, and preoperative IIEF EF score. Third, logistic regression analyses were used to assess predictors of postoperative satisfaction in the overall population and in patients who experienced back to baseline EF. Covariates consisted of age, BMI, CCI, surgical technique, postoperative continence status, postoperative IIEF-EF category, and time to back to baseline EF status. Fourth, pre- and postoperative satisfaction rates were calculated in the overall population, and analyzed according to preoperative IIEF categories. Finally, pre- and postoperative satisfaction rates were compared between men who reached back to baseline EF status and those who did not after stratification according to preoperative IIEF-EF categories.

All statistical tests were performed using the SPSS 22 (IBM Corp. Armonk, NY, USA) and R statistical package (R Foundation for

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