

ERECTILE DYSFUNCTION

A Retrospective Study of Erectile Function and Use of Erectile Aids in Prostate Cancer Patients After Radical Prostatectomy in Denmark



Martha Kirstine Haahr, MD,^{1,2} Nessn H. Azawi, MD, PhD,^{1,2,3} Line Grønbaek Andersen,² Steen Carlson, MD,¹ and Lars Lund, MD, PhD^{1,2}

ABSTRACT

Introduction: Radical prostatectomy (RP) offers a good long-term cancer control for clinically localized prostate cancer. However, complications such as erectile dysfunction and substantial decreases quality of life of the afflicted men and their sexual partners. Identification of pre-, per-, and postoperative factors that correlate with poor postoperative erectile status must be considered an important step to improving penile rehabilitation.

Aim: To describe postoperative erectile function after RP in a Danish cohort.

Methods: The medical records of 1,127 patients undergoing RP from March 2003 through September 2014 were reviewed retrospectively with a 12-month follow-up after surgery. In all, 704 patients fulfilling the inclusion criteria were included in the final analysis. Recovery was defined as self-reported erection sufficient for intercourse (ESI) with or without usage of erectile aids.

Main Outcome Measures: Subjective reporting of erectile function and usage erectile aids 12 months after RP.

Results: ESI with or without erectile aids was reported by 226 men (32.1%), among whom 109 (48.2%) required erectile aids. Erectile dysfunction (ED) was reported by 478 men (67.9%) and by 121 (25.3%) despite use of erectile aids. Of men with ED, 155 (22%) stated not being interested in penile rehabilitation, 26 (3.7%) stated not having resumed their sex life 12 months after RP, and 241 (34.2%) had ED and were unsatisfied with the condition. We found that 134 of 445 men (30.1%) who underwent non-nerve-sparing RP had ESI 12 months after RP. Age older than 60.5 years, a high body mass index, comorbidity, and a high American Society of Anesthesiologists score were negative predictors of erectile function 12 months after RP.

Conclusion: Twelve months after RP, 32.1% of men had ESI; half these men required the use of erectile aids. Age older than 60.5 years, a high body mass index, comorbidity, and a high American Society of Anesthesiologists score were negative predictors for ED 12 months after RP. **Haahr MK, Azawi NH, Andersen LG, et al. A Retrospective Study of Erectile Function and Use of Erectile Aids in Prostate Cancer Patients After Radical Prostatectomy in Denmark. Sex Med 2017;5:e156–e162.**

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Key Words: Erectile Aids; Erectile Dysfunction; Penile Rehabilitation; Prostate Cancer; Radical Prostatectomy

INTRODUCTION

Prostate cancer (PCa) is the most commonly detected cancer in men in developed countries, with nearly 800,000 new annual

cases, of which 325,000 occur in Europe.¹ PCa is the most common male malignancy in Denmark, with an incidence of 4,577 in 2014.² In Denmark, PCa has followed an increasing trend during the past decade, increasing by 35%, and the 2025 prevalence is expected to reach 90,000 cases.²

Radical prostatectomy (RP) or radiation therapy is the curative treatment option recommended for patients with localized disease. RP offers good long-term cancer control for clinically localized PCa,³ and the nerve-sparing technique is the treatment of choice for localized PCa in sexually active men.⁴ Complications such as erectile dysfunction (ED) are feared by all men undergoing RP because of its effects on the quality of life for the man and his partner.⁵

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¹Department of Urology, Odense University Hospital, Odense, Denmark;

²Department of Clinical Research, University of Southern Denmark, Winsløvparken, Denmark;

³Department of Urology, Zealand University Hospital, Sygehusvej, Denmark

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Other side effects of RP include loss of ejaculate, penile shortening, change of orgasmic feeling, alterations in body image, stress incontinence, disturbances in partner relationships, and various types of anxiety.⁶ Managing penile rehabilitation should include sexual rehabilitation addressing these issues to help men cope with and accept a different sexual life. Evaluation and treatment should be informed by a patient's motivation, expectations, and physical and mental health.

Functional outcomes after RP reported in the literature vary widely with respect to sexual function depending on study design, extent of follow-up, choice of outcome, patient age, comorbidity, perioperative erectile status, type of surgery, high- vs low-volume centers, and the extent of appropriate penile rehabilitation.^{7–16}

The highest erectile function (EF) recovery rates are reported from single-center and single-surgeon series with a large number of patients. Many studies have reported on populations that are likely younger than what is seen in the community.¹⁷ This patient selection bias generally serves only to enrich the population and augment the data on EF recovery, and therefore it seems reasonable to question whether the results can be extrapolated to the general population.⁷

The objective of the present study was to describe postoperative EF after RP in a Danish cohort and to identify any predicative factors for EF.

METHODS

Settings and Patients

Data from 1,127 consecutive patients diagnosed with PCa who underwent RP from March 2003 through September 2014 at the Department of Urology in the Odense University Hospital (Odense, Denmark) were collected retrospectively from patient records and analyzed. The operations were classified according to the Nordic Medico-Statistical Committee Classification of Surgical Procedures. To obtain data on the number and type of RPs performed per year, a search was carried out for procedure codes KEC00 (radical retropubic prostatectomy), KEC01 (percutaneous endoscopic RP), KEC10 (perineal RP), and KEC20 (transsacral RP). KEC01 includes laparoscopic and robotic RPs, but they can be identified by the secondary code ZXC96 used for robot-assisted procedures. All procedures also were coded according to neurovascular bundle preservation. The department would be classified as a low-volume center (1–29 RPs) in 2003 to 2007, a medium-volume center (30–53 RPs) in 2008 to 2009, a high-volume center (54–105 RPs) in 2010, and a very high-volume center (>105 RPs per year) after 2010. Permission to conduct the study was obtained from the Danish Data Protection Agency (file number 2008-58-0035) and the Danish Health Authority (file number 3-3013-1347/1/) in accordance with Danish legislation.

Exclusion Criteria

We excluded men who were referred to their hometown hospital before a full 12-month postoperative check-up, who had

PCa relapse within a year, who died or were diagnosed with a serious illness that caused interruption of their routine follow-ups, and who reported ED before undergoing RP (Figure 1).

Medical Record Data

Pre- and postoperative variables were retrieved from the patient records. The following variables were recorded: age, prostate-specific antigen (PSA) level, smoking and intake of alcohol, medication, body mass index (BMI), spinal problems, comorbidity, American Society of Anesthesiologists (ASA) classification,¹⁸ type of surgery, Gleason score,¹⁹ pathologic tumor (pT) stage and surgical margin status, postoperative cancer control, and EF at 12 months. Information on preoperative status was assessed by the International Index of Erectile Function–5 or by direct questions. EF was categorized as unknown, EF sufficient for intercourse (ESI), and ED. The last group included men who had not resumed their sex life, men who were not interested in penile rehabilitation, and sexually active men who could not achieve ESI.

Statistical Methods

Descriptive data were analyzed using the χ^2 test and Fisher exact test, and continuous variables were analyzed by t-test and analysis of variance. Multivariate analysis was performed using logistic regression in which ED and urinary incontinence were the dependent variables and age, BMI, PSA, comorbidity, surgical technique, pT stage, and Gleason score were the independent variables. A *P* value less than .05 was considered statistically significant. To select the threshold point of age related to EF, the receiver-operating characteristics curve analysis was used. Data are presented as mean and SD. Statistical analyses were performed using SAS 9.4 (SAS Institute, Cary, NC, USA).

RESULTS

A total of 704 men with a median age of 62 years (SD = 5.8) and a median BMI of 26.7 kg/m² (SD = 3.2) were enrolled in the study. Postoperative ED was seen in 478 men (67.9%) and ESI was reported by 226 (32.1%). A normal BMI (<24.9 kg/m²) was seen in 127 men (18.0%), 220 men (31.3%) were overweight (BMI < 29.9), and 64 (9.9%) were obese (BMI > 30). In the ED group, 345 men (72.2%) had a comorbidity of whom 208 (43.5%) had hypertension; in the ESI group, only 117 (51.8) had a comorbidity of whom 66 (29.2%) had hypertension (Table 1). We found a significant difference between ASA scores of the ED and ESI groups (*P* < .01; Table 1). In all, there were 119 smokers (16.9%), and 105 men (18.7%) had an alcohol problem (Table 1). Men in the ESI group were significantly younger (mean age = 60 years; *P* < .01), had a lower prevalence of hypertension (*P* < .05), and had a lower ASA score (*P* < .01) than men who reported ED (Table 1).

There was no significant difference (*P* < .13) in PSA between the ED group (mean = 10.6, SD = 8.1) and the ESI group

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