

Neglected Side Effects After Radical Prostatectomy: A Systematic Review

Anders Ullmann Frey, Jens Sønksen, MD, PhD, DSc (Med), and Mikkel Fode, MD

Department of Urology, Herlev University Hospital, Herlev, Denmark

DOI: 10.1111/jsm.12403

ABSTRACT

Introduction. A series of previously neglected sexually related side effects to radical prostatectomy (RP) has been identified over the recent years. These include orgasm-associated incontinence (OAI), urinary incontinence in relation to sexual stimulation (UISS), altered perception of orgasm, orgasm-associated pain (OAP), penile shortening (PS), and penile deformity.

Aim. The aim of this article is to conduct a systematic review of the literature regarding the above-mentioned side effects.

Methods. A predefined search strategy was applied in a thorough search of Medline, Web of science, and the online Cochrane library. The PRISMA guidelines for systematic reviews were followed, and protocol as well as search strategies was registered at <http://www.crd.york.ac.uk/Prospero/> (RN: CRD42012003165).

Main Outcome Measure. The main outcome measure was incidence rates for the relevant side effects.

Results. A total of 43 articles were included. OAI and UISS are experienced by 20–93% of RP patients at least a few times after surgery. Although these issues are associated to postoperative daytime incontinence, previous transurethral resection of the prostate (TURP) is the only known predicting factor. Alterations of orgasmic function are experienced by approximately 80% after RP. Erectile dysfunction seems to play an important role in waning orgasmic function. OAP is only experienced by a subset of the patients with reported rates varying between 3% and 19%. Sparing of the tips of the seminal vesicles has been shown to double the risk of OAP. PS occurs in 15–68% of RP patients. Nerve sparing and preservation of erectile function may help preserve penile length. With regard to all side effects, studies indicate that they are reduced over time.

Conclusions. The sexually related side effects summarized in this review are common after RP. Meanwhile, it is difficult to predict which patients are at risk. Daytime incontinence, previous TURP, a lack of nerve sparing, and erectile dysfunction are all associated with the above-mentioned sexually related side effects. **Frey, AU, Sønksen J, and Fode M. Neglected side effects after radical prostatectomy: A systematic review. J Sex Med 2014;11:374–385.**

Key Words. Climacturia; Dysorgasmia; Orgasm-Associated Pain; Penile Length; Radical Prostatectomy

Introduction

Prostate cancer is a common disease with more than 650,000 new cases each year in the developed countries alone [1]. Radical prostatectomy (RP) has been shown to reduce mortality [2]. Unfortunately, the operation is not without side effects. Destruction or disruption of nerves, blood vessels, and muscular tissue during surgery is known to cause erectile dysfunction (ED) and urinary incontinence (UI). These side effects are well described in the literature [3,4]. Meanwhile, a series of additional sexually related side effects to

RP has been studied in recent years. These include orgasm-associated incontinence (OAI), urinary incontinence in relation to sexual stimulation (UISS), altered perception of orgasm, orgasm-associated pain (OAP), penile shortening (PS), and penile deformity [5].

Aims

The aim of this systematic review is to summarize the literature regarding the sexually related side effects mentioned above.

Table 1 Search strategy for electronic databases

Keywords
Prostatectomy AND orgas*
"Prostate cancer" AND orgas*
Prostatectomy AND penil*
"Prostate cancer" AND penil*
"sexual stimulation" AND incontinence AND prostatectomy
"foreplay incontinence" AND prostatectomy
Climacturia
"Altered perception of orgasm"
Anorgasm
Dysorgasmia
"orgasmic dysfunction" AND prostatectomy
"Orgasmic related pain"
"Peyronies disease" AND prostatectomy

Methods

The review was conducted according to the PRISMA guidelines [6]. The review protocol and search strategy were registered online at <http://www.crd.york.ac.uk/Prospero/> under the title "Rare post prostatectomy side effects: a systematic review" (registration number CRD42012003165).

We included articles in English, published between January 1980 and June 2013, which investigated orgasmic dysfunction, morphological penile changes, and/or sexually related UI as side effects after open, laparoscopic, and robot-assisted RP. Human studies were considered, and all study designs were included with the exception of case reports.

A systematic search of Medline, Web of science, and the online Cochrane library was performed using a predefined search strategy (Table 1). Reference lists from relevant articles were searched manually.

Screening of titles, abstracts, and full texts was performed by the primary reviewer (A.F.) and reviewed by the remaining authors to ensure quality. The assessments of biases were performed in accordance with the Cochrane Collaboration's tool for assessing biases.

Extraction of data was performed with a formula including year of publication, authors, sample size, sample mean/median age, time since surgery, incidence of side effects, pathophysiology, changes in side effects over time, treatment, and predicting factors of observed side effects. Only correlations reaching statistical significance on multivariate analyses were included. The results are reported in the same manner as in the original articles. No meta-analysis was conducted because of heterogeneity of the studies.

Main Outcome Measures

The main outcome measure was incidence of the side effects mentioned above. Results from multivariate analyses specifying predicting or associated factors were also included, and pathophysiology and treatment options were described.

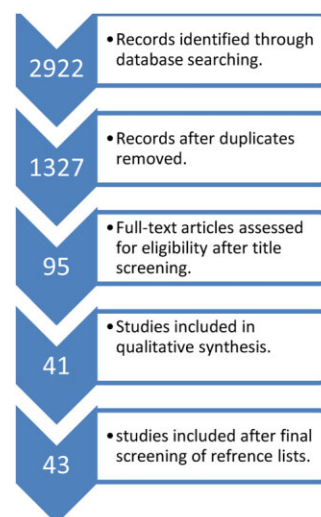
Results

Included Articles

A total of 1,327 articles remained after removing doublets. After screening titles and abstracts, 95 articles were found eligible for full text assessment, and 41 articles were included. Two additional articles were added after screening of reference lists (Figure 1).

UI During Sexual Activity

OAI after RP was first reported by Koeman et al. in 1996 with 9/14 patients complaining of the problem [7]. Later, Barnas et al. found that, 93% of RP patients had experienced OAI at some point after RP (n = 239) [8]. A more thorough investigation was performed by Lee et al. who found that 19/42 RP patients had the problem at the time of the study [9]. Interestingly, only 47% of these men were bothered by their OAI. Furthermore, 21% considered it a bother to their partners. Coping strategies included emptying the bladder before sexual activity (74%) and the use of condoms (11%). In the samples of both Barnas et al. and Lee et al., 2/3 of men with OAI experienced the problem occasionally or with every orgasm, whereas it was a rare occurrence in the remaining 1/3.

**Figure 1** PRISMA flow diagram.

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