



Review – Prostate Cancer

Postprostatectomy Incontinence: All About Diagnosis and Management

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Abstract

Context: The ever-increasing number of radical prostatectomies entails an increasing number of patients suffering from postprostatectomy stress incontinence despite improved surgical techniques. We provide an overview of the current diagnosis and treatment of postprostatectomy stress incontinence.

Objective: To review previous and recent literature on this subject and to assess the current standards of diagnosis and management of postprostatectomy incontinence.

Evidence acquisition: The PubMed database was searched, and all articles published since 2000 were evaluated.

Evidence synthesis: This review presents the current recommended diagnostic tools and available noninvasive and invasive treatment options.

Conclusions: The European Association of Urology (EAU) recommends a two-stage assessment for diagnosis of postprostatectomy incontinence. Noninvasive therapy, pelvic floor-muscle training and biofeedback, is recommended in early postoperative and mild incontinence. Pharmacological treatment with duloxetine is especially effective in combination with physiotherapy, where it synergistically improves the continence rate. For surgical treatment, the insertion of an artificial urinary sphincter, AS-800, is still the gold standard. In recent years, several minimal invasive treatment options have been introduced with different rates of success, but they have not yet surpassed the results of the artificial sphincter.

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1. Introduction

The increasing number of radical prostatectomies entails an increasing number of patients suffering

from postoperative stress incontinence. Depending on the study, the incidence of early stress incontinence varies between 0.8% and 87.0% [1–4]. The huge range of reported incontinence rates is most

likely determined to a large extent by the unknown influence of the operating physician [5] and the lack of a standardised definition of “incontinence.” Thus, in high-volume centres with small numbers of surgeons, postprostatectomy continence rates are very high, between 91% and 98% [6,7]. Incontinence that persists for >1 yr postoperatively may decrease in these centres to <5% [8] and may even reach 1–2%. The incidence of de novo detrusor overactivity ranges between 2% and 77%, and this may last up to 1 yr [6,9,10]. In addition, men aged <50 yr show a significantly better rate of return to continence than men aged >70 yr [11].

Depending on the value put on urine leakage, the quality of life (QoL) of patients is strongly affected. Therefore, incontinence is one of the most feared complications of radical prostatectomy.

2. Pathogenesis

The risk of incontinence following prostatectomy includes preoperative factors (eg, age and preoperative continence status), intraoperative factors (eg, surgical technique and surgeon’s experience), and postoperative factors [12,13]. A better understanding of the male pelvic anatomy has decreased the postoperative incontinence rate [13–15]; the radical prostatectomy as modified by Walsh revolutionised the surgical technique [16]. Due to the preservation of the neurovascular bundles, postoperative sexual function improved and, in addition, a significant improvement in the postoperative continence rate occurred [17,18].

The precise aetiology of postprostatectomy incontinence has not been completely understood until now; however, dysfunction of the bladder neck as well as intraoperative damage of the nerves and sphincter may play a causative role [19,20]. In this regard,

damage of the urethral sphincter can result not only from direct muscle damage but also from damage of the neuronal innervation [21]. According to newly evolving understanding, the reason for incontinence despite good function of the sphincter is a sphincteric laxity due to postoperative intrinsic sphincter deficiency [22,23]. This is caused by a disturbance of the male integral system following surgery (Fig. 1).

Another important factor for sphincter function seems to be the functional urethral length [24]. The minimal length of the functional urethra should be >28 mm [4]. Other authors found no impact of the functional urethral length [9,25]. In addition, the preservation of the bladder neck improves the early continence rate; however, in the long term, the results with and without bladder neck preservation are almost the same [26–29].

The preservation of the puboprostatic ligaments seems to induce no better continence rate [9,30–32]. Potentially, the “tip-sparing prostatectomy” with protection of the seminal vesicles can decrease the rates of incontinence and erectile dysfunction [33]. But further studies are needed to confirm the first results. There are also indications that the restoration of the posterior part of the rhabdosphincter can enhance the results [34,35].

Nevertheless, all studies dealing with potential issues influencing postprostatectomy incontinence have only level III evidence, excluding a few randomised controlled trials. Thus it is not possible to give evidence-based advice concerning the benefit of the different surgical techniques discussed [36].

3. Diagnosis

The diagnosis should be performed in a two-step assessment which includes a urinary diary and a

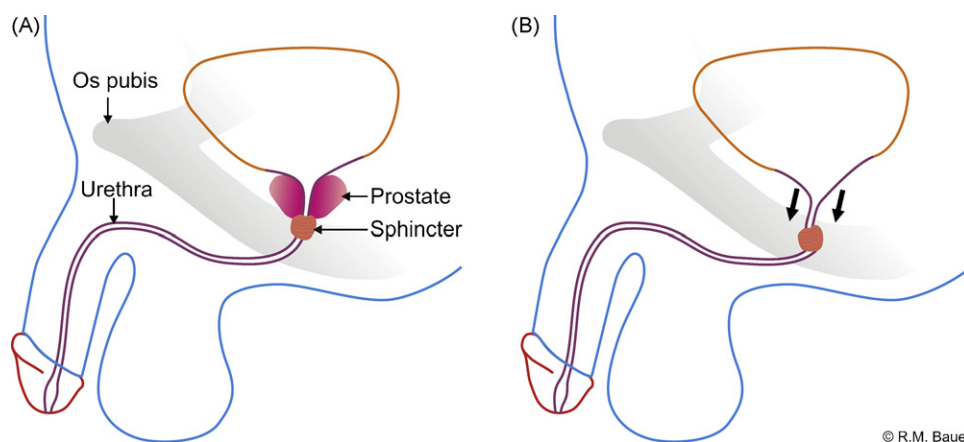


Fig. 1 – Disturbance of the male integral system following radical prostatectomy: (A) preoperative and (B) postoperative. Sphincteric laxity is due to radical prostatectomy.

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