The Impact of Post-radical Prostatectomy Urinary Incontinence on Sexual and Orgasmic Well-being of Patients

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Radical prostatectomy (RP) is performed increasingly in patients with localised prostate cancer. Statistics from the British Association of Urological Surgeons database show that 8032 RPs were performed between 2004 and 2009.[1] The statistics from the Surveillance, Epidemiology and End Results cancer registry in the United States reported that 16,348 men above 66 years of age were treated with RP between 2000 and 2007.[2]

Whilst survival benefit and improving surgical margins remain critical goals, the impact of surgery on the quality of life (QOL) of patients remains a persistent problem and has been extensively reported. In particular, post-prostatectomy urinary incontinence (PPI) is a problem that has a large impact on the QOL of a patient. There is now an increasing emphasis on improving the functional outcome in term of not only achieving full continence and potency but also the speed of attaining these goals.[3] According to the Surveillance, Epidemiology and End Results database, 6% of RP patients had undergone at least 1 incontinence procedure at a median of 20 months after RP.[2]

Although potency is one of the established components of trifecta outcomes in post-RP patients, loss of sexual desire or libido has received less attention compared with erectile dysfunction. This phenomenon has happened despite the inclusion of Sexual Desire in the sexual domains of most QOL questionnaires (Expanded Prostate Cancer Index Composite, University of California, Los Angeles Prostate Cancer Index).

The cause of sexual dysfunction in RP patients is multifactorial. The stress from the cancer diagnosis, loss of masculinity after surgery, and sequelae from surgical complications are all potential causes of deterioration of sexual desire. Fifty-one percent of post-RP patients reported significant sexual dysfunction at 3 months which did not return to preoperative level.[4]

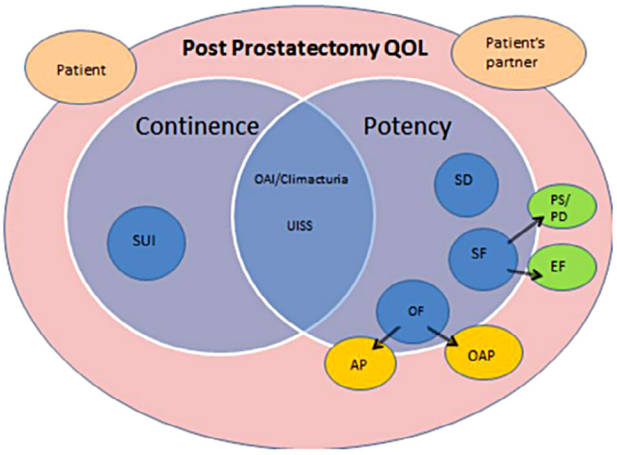

Figure 1. Evaluating post-RP patient as a whole. AP, altered perception; OAP, orgasmic associated pain; PD, penile deformity (including pyeronies); PS, penile shortening; EF, ejaculatory function; OAI, orgasmic associated incontinence; OF, orgasmic function; SD, sexual desire; SF, sexual function; SUI, stress urinary incontinence; UISS, urinary incontinence in relation to sexual stimulation. (Color version available online.)

ORGASMIC DYSFUNCTION

Orgasmic dysfunction such as anorgasmia, alteration in orgasmic intensity, orgasm associated pain, or urinary incontinence during sexual activity (climacturia) are not uncommon post-RP complications (Fig. 1). These complications of RP have only come to attention in recent years and have garnered much interest and discussion.

Several factors associated with post-RP orgasmic dysfunction have been described in the literature. One of the possible explanations is the removal of all ejaculatory apparatus during the prostatectomy.[5,6] In a paper by Dubbelman et al, 1021 post-RP men had their sexual function evaluated

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using a standardised interview at regular intervals during a 2 year follow-up period. Poor post-op sexual and orgasmic function was associated with increasing age, sacrifice of the neurovascular bundles, and severe postoperative urinary incontinence. Choice of surgical approach and age were found to be prognostic factors associated with preservation of sexual and orgasmic function during multivariate analysis.[7]

Hollenbeck et al also reported on younger age and nerve sparing RP as favourable factors for preservation of postoperative orgasmic function. Among those patients below 58 years old who were able to achieve orgasm, 84% had bilateral nerve sparing, 68% had unilateral nerve sparing, and 67% had non-nerve-sparing procedure. This was higher compared with patients older than 69 years old. Fifty-eight percent of the older patients who were able to achieve orgasm had bilateral nerve sparing, 58% of the patients had unilateral nerve sparing, and 30% of the patients had non-nerve-sparing procedure.[8]

In a cross-sectional questionnaire–based study by Frey et al involving 316 post-RP patients, three questionnaires were used for assessment. These were the Danish version of the Orgasm Frequency Domain of the International Index of Erectile Function questionnaire, the short version of the International Consultation on Incontinence Modular Questionnaire and the Danish translation of the Erection Hardness Score questionnaire. In addition to these three questionnaires, 15 questions pertaining to other orgasmic or sexual dysfunctions such as climacturia were designed. Among 256 sexually active patients, severe post-RP urinary incontinence as defined by a high International Consultation on Incontinence Modular Questionnaire score and daytime incontinence correlates positively with the inability to achieve orgasm. The interactions between orgasmic function, postoperative return of potency, and urinary continence imply that the nerve sparing technique in RP surgery is important in maintaining good orgasmic function.[9]

In conclusion, nerve sparing prostatectomy and younger age have been found to be independent factors in the preservation of orgasmic function as emphasised in these studies. This was comparable with most of the literature reporting on post-RP erectile function.[7] These findings suggest that that preservation of the neurovascular bundle contributes more to postoperative sexual well-being than just through the maintenance of erectile ability. However, the role of nerve sparing RP to conserve both continence and orgasmic function needs to be studied further.

ORGASMIC PAIN

Orgasmic pain or dysorgasmia has been reported in 14% of post-RP patients.[5,10] Although the underlying pathophysiology is not well understood, Barnas et al postulated that physiologic bladder neck closure that occurs during orgasm in these men may have translated into postoperative spasm of the vesicoureteral anastomosis or pelvic floor musculature dystonia. This hypothesis has led to the use of the alpha blocker Tamsulosin in a relatively small cohort of 98 men in their study, and 12% of these patients reported complete resolution of pain. This study is limited by the relatively small study size and the absence of a placebo group.[5] A study by Matsushita et al with a larger cohort of 702 post-RP patient reported that 12% of the patients had postorgasmic pain most commonly felt in the penis or testes within the 6 months postoperative period. Eight percent of these patients had persistent symptoms at 24 months although the intensity and frequency of pain had decreased during follow-up.[11]

CLIMACTURIA

Orgasm-associated urinary incontinence or climacturia is a relatively new entity that is being increasingly reported in post-RP patients. The incidence of climacturia in post-RP patients is reported to be in the range of 21-22%.[12,13] Despite this, climacturia remains a poorly defined entity that requires further research. In addition, the lack of standardised postoperative validated assessments contributes to the heterogeneity in result reporting.

O'Neil et al performed a study looking into the incidence of climacturia in prostate cancer patients who had undergone treatment with surgery, radiation therapy (RT), or both. Survey questionnaires on the type of treatment received and the presence of post-treatment climacturia were sent by mail to the study subjects. They noted that 75.2% of post-treatment patients were sexually active or experiencing orgasms. In this group of patients, 22.6% reported climacturia. The incidences of climacturia are 28.3%, 5.2%, and 28.6% for patients treated with surgery, RT, or both, respectively (P <.001). The low climacturia rate in post-RT patients can be due to either the treatment effect from RT or from other pre-existing conditions contributing to this. Type of treatment was the best predictor of climacturia during multivariate analysis.[13] O'Neil et al is the first paper to report on the occurrence of climacturia after definitive treatment of prostate cancer with surgery, RT, or both.[13]

Lee et al also reported on their findings in a study of 42 sexually active men who underwent RP surgery and were given questionnaires. Various aspects of climacturia were investigated and these included the frequency of climacturia, quantity of leaked urine, the level of bother to the patient, and the coping mechanism of the patients. Twenty-one percent of patients in the study reported that climacturia occurred most of the time and 48% of these patients reported that the symptom has caused significant bother. In addition, 21% of these patients reported that the climacturia was of significant bother to their partners as well.[14] This study demonstrated that climacturia occurred in almost half of post-RP patients (45%) and close to half of these patients (48%) had reported significant bother to their QOL as a result of climacturia. This work highlighted the fact that climacturia, although receiving limited attention in the literature, is a common entity in post-RP patients.[14]

Choi et al evaluated 475 patients following radical pelvic surgery (prostatectomy and cystoprostatectomy). Ninety-six