

SEXUAL MEDICINE REVIEWS

Male Orgasmic Dysfunction Post-Radical Pelvic Surgery

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ABSTRACT

Background: Pelvic surgeries are recognized to cause dysfunction of the male sexual response, which consists of erection, emission, expulsion, and orgasm. However, the least attention has been paid to male orgasmic dysfunction after invasive pelvic surgery.

Aim: To describe the available literature on post-pelvic surgery orgasmic dysfunction disorders.

Methods: A literature search was performed on PubMed using the search strings related to dysfunction of the male sexual cycle and orgasm after pelvic surgery.

Outcomes: Orgasmic dysfunction after pelvic procedures in urologic, colorectal, and vascular surgeries was assessed.

Results: Radical prostatectomy was the most common procedure where orgasmic dysfunction was quantified. Anorgasmia post-operatively occurred in patients in a range of 5–70%. Dysorgasmia occurred less frequently from 7–14%. The prevalence of climacturia was highly variable occurring in 20–93% of patients. Radical cystectomy resulted in anorgasmia 33–62% of the time and climacturia ranged from 6–45%. Studies involving colorectal surgeries were less likely to assess for dysorgasmia and climacturia, but anorgasmia rates ranged from 0–52%. Most current studies do not differentiate between ejaculatory and orgasmic dysfunction. However, more recent studies have started to distinguish between the 2 disorders and publish more specific data on what components of the male sexual response has been affected by the specific surgery.

Conclusions: The male sexual response, specifically the male orgasm, is difficult to quantify in a non-obtrusive setting and can exhibit variability between patients and between sexual encounters in the same patient. Data involving the outcome of male orgasmic dysfunction after pelvic surgery are sparse, limiting health professionals' ability to appropriately counsel patients. Future work needs to standardize outcome assessment for orgasmic disorders, which, in turn, can be used across all surgical specialties. **Haney NM, Alzweri LM, Hellstrom WJG. Male Orgasmic Dysfunction Post-Radical Pelvic Surgery. Sex Med Rev 2018;XX:XXX–XXX.**

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Key Words: Orgasm; Orgasmic function; Pelvic surgery; Male sexual function; Sexual dysfunction

INTRODUCTION

Surgeries performed deep in the pelvis are recognized to have effects on male sexual function. The most publicized disorders tend to revolve around erectile function, as it is easier to measure and better comprehended both by patients and their providers. However, orgasm, which is a fundamental aspect of the male sexual response, but a difficult entity to describe, can be severely affected by pelvic surgeries performed within, but not limited to, colorectal and urologic specialties. This review will begin with a brief discussion of the normal male sexual response, followed by the various types of orgasmic disorders. The fundamental part of

this review will be a discussion and comparison of the effect that various pelvic surgeries can have on orgasmic function. Pelvic surgeries typically performed by urologists include radical prostatectomies, radical cystectomies, and retroperitoneal lymph node dissections (RPLND). In the colorectal specialty, rectal carcinoma includes various proctectomy procedures including low anterior resections (LAR), Hartmann procedures, and abdominoperineal resections (APR). Other surgical procedures performed outside of the urologic and colorectal specialties include abdominal aortic aneurysm (AAA) repairs.

The Male Sexual Cycle

To healthy men, ejaculation and orgasm might be thought of as the same entity. However, the ejaculation and orgasmic process can be broken down into distinct phases of emission, expulsion of ejaculate, and orgasm.^{1,2} The first phase of emission is regulated by the sympathetic system (T10–L2), which causes

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the seminal vesicles and prostate to contract, depositing semen into the posterior urethra.^{2,3} The next phase of expulsion is mediated by somatic fibers, which contract the bulbocavernosum and pelvic floor.³ This allows the ejaculate to pass through the external urinary sphincter. The sympathetic system simultaneously contracts the internal urinary sphincter at the bladder neck, which allows for antegrade ejaculation, rather than retrograde transport of semen into the bladder.¹

An orgasm, however, is both cognitive and emotional,^{4,5} and has no standard definition.^{4,6} It is thought to involve the brain's ability to process pudendal nerve stimuli, including increased posterior urethral pressure and highly pleasurable contraction of sexual organs.^{1,7} Orgasm is associated with systemic and temporary increases in heart rate, blood pressure, and respiratory frequency.⁸ The peripheral, autonomic, and central nervous system are all involved, and the 2 main neurotransmitters responsible for ejaculation and orgasm are dopamine and serotonin.^{1,9} Other neurotransmitters involved in the ejaculatory process include acetylcholine, adrenaline, neuropeptides, oxytocin, gamma-aminobutyric acid, and nitric oxide. However, the exact role of these neurotransmitters have been extremely difficult to define.⁹

Orgasmic Disorders

Orgasmic dysfunction in men can be separated based on 3 main symptoms that may impair a man's perception of orgasm: (1) the presence, timing, and force of ejaculation^{10,11}; (2) urinary incontinence at time of orgasm, called "climacturia"; and (3) the orgasm itself. If an orgasm is not associated with ejaculate, it is sometimes referred to as a "dry orgasm." This condition has been studied in infants and after surgery where ejaculatory ducts and urethral sphincters are manipulated and injured, such as after a radical prostatectomy. Occasionally, the orgasm itself may be associated with pain, known as "dysorgasmia"; decreased sensation; or no sensation at all, known as "anorgasmia."¹² The pain, when associated with orgasm, has been reported to manifest most commonly in the penis, but also in the abdomen, rectum, and elsewhere.¹³

Diagnostic and Statistical Manual of Mental Disorders (DSM), *Fifth Edition* (DSM-5)¹⁴ defines delayed ejaculation as "marked delay in ejaculation" or "marked infrequency or absence of ejaculation" for a minimum of 6 months. However, this definition excludes ejaculatory problems caused by surgeries that interfere with the nerve and/or blood supply and excludes retrograde ejaculation. Previous versions of the DSM defined a delay in ejaculation under male orgasmic disorders. However, the newest version of the DSM, the DSM-5, notably distinguishes delayed ejaculation from orgasmic dysfunction.¹⁵ The DSM-5 defines premature ejaculation as a "persistent or recurrent pattern of ejaculation occurring during partnered sexual activity within approximately 1 minute following vaginal penetration and before the individual wishes it."¹⁴ The DSM-5 does not have categories specific to male orgasmic dysfunction under the sexual

dysfunction heading, but does have "other specified sexual dysfunction" and "unspecified sexual dysfunction."

Even though there are biologic consistencies of orgasm, much of the process is largely unknown. For example, the quality and intensity of each orgasm is heterogeneous. This includes comparing orgasms between 2 different healthy men and even between 2 orgasms in the same man.⁶ The difficulty of obtaining an objective measurement of such a subjective physiologic process cannot be emphasized enough. The focus of this review is male orgasm, but it is difficult for men, physicians, and researchers to objectively distinguish between orgasm and ejaculation. In more recent studies, there has been more of an effort to disentangle the 2 processes.¹⁶ For example, the DSM-5 has, as stated previously, separated delayed ejaculation from its previously defined male orgasmic disorder.¹⁵ If the study within the literature included information about ejaculation, it was included in this review for completeness.

METHODS

A literature search was performed on July 31, 2017, on PubMed (www.ncbi.nlm.nih.gov) using the search strings "orgasm, orgasmic dysfunction, ejaculatory disorder, ejaculatory dysfunction, climacturia, sexual function, surgery, pelvic surgery, prostatectomy, proctectomy, cystectomy, abdominoperineal resection, AAA repair, low anterior resection, and male sexual cycle." Studies that examined anorgasmic rates, dysorgasmic rates, changes in the orgasmic function domain of the International Index of Erectile Function (IIEF), climacturia, and changes in orgasm intensity were included. Studies that did not evaluate orgasmic function were not included in this review. To the best of the authors' abilities, distinctions were made between orgasm and ejaculation. While pelvic fractures and subsequent urethral repairs are associated with disorders of the male sexual cycle, urethrectomy was not considered a pelvic surgery and thus was not a focus of this review. There were 25 non-review references that met inclusion criteria and are included in [Tables 1–4](#). Out of these, the earliest manuscript was published in 1979, with the most recent one published in 2017. 1 Additional paper was included in the manuscript for RPLND, for a total of 26 articles that studied post-operative orgasmic dysfunction.

RESULTS

Urologic

Prostatectomy

Radical prostatectomy subjects all men to dry orgasm. This is due to the ejaculatory apparatus (prostate, seminal vesicles, and ejaculatory ducts) being removed for treatment of malignant prostate disease.⁴ Orgasmic dysfunction has been reported in men undergoing prostate surgeries since 1996. Koeman et al⁵ retrospectively studied the orgasm of 17 men after radical prostatectomy using patient-reported metrics on desire, subjective

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