

Role of the pelvic floor in female sexual dysfunction: Diagnosis and treatment

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ABSTRACT. Disorders of the pelvic floor may have an important role in the etiology of female sexual dysfunction (FSD). Urinary incontinence may increase sexual distress and decrease total sexual function. With pelvic organ prolapse, sexual function complaints are more prevalent amongst women with higher grades of prolapse. As corrective pelvic surgery may also affect sexual function and response, it is important to access baseline sexual function including presence of vaginal pain, arousal or orgasmic difficulties, alteration in genital sensation and low libido. All women who present with voiding dysfunction or prolapse should be questioned about their sexual function as well.

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INTRODUCTION

Female sexual dysfunction (FSD) is age-related, progressive, and highly prevalent, affecting 30-50% of American women. While there are emotional and relational elements to female sexual function and response, female sexual dysfunction can occur secondary to medical problems and have an organic basis. The same disease processes and risk factors that are associated with erectile dysfunction in men such as aging, hypertension, cigarette smoking, and hypercholesterolemia, can also be associated with sexual dysfunction in women. Unlike men, many women undergo drastic anatomical changes to their pelvic floor throughout their lifetime as a result of pregnancy, delivery, hysterectomy and menopause. Disorders of the pelvic floor are multifactorial and include stress incontinence, overactive bladder and urge incontinence, pelvic floor prolapse and pelvic pain syndromes. Although there has been a great deal of focus on the role of hormones in the etiology and treatment of FSD, the pelvic

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floor may have an equally important role, and as such is the topic of this discussion which includes the following teaching points:

- To review the pathophysiology of female sexual dysfunction due to changes in the pelvic floor,
- To discuss the sexual function complaints associated with disorders of the pelvic floor and the effects of treatment,
- To gain a better understanding of the current clinical research on pelvic floor disorders and female sexual dysfunction.

BACKGROUND – PATHOPHYSIOLOGY

The pelvic floor is a collection of tissues that span the opening within the bony pelvis. In addition to supporting the abdominal and pelvic organs and maintaining continence of urine and stool, the pelvic floor allows for intercourse and parturition. The pelvic floor musculature, in particular, the pelvic diaphragm that is formed by the levator ani muscles, the urogenital diaphragm, and the perineal membrane, is important for pelvic support. The perineal membrane that consists of the ischiocavernosus, bulbocavernosus, and superficial transverse perineal muscles, is closely related to the vestibular bulbs and clitoris, and plays a role in sexual response. These muscles, when voluntarily contracted, can intensify orgasm of both the female and her male partner.

The levator ani muscle has two different parts, the pubococcygeus and the iliococcygeus. These muscles can be palpated during pelvic examination as a distinct ridge just above the hymenal ring along each lateral wall of the pelvis. The function of this group of muscles is to pull the rectum, vagina, and urethra anteriorly toward the pubic bones to compress the lumens closed. Non-voluntary pelvic floor spasm associated with vaginal penetration or even examination with a speculum, is referred to as vaginismus. This disorder prevents sexual intercourse and is

associated with dyspareunia and other sexual pain disorders. If the opposite problem exists, consisting of laxity and hypotonia of the pelvic floor musculature due to aging, menopause, or childbirth, for instance, symptoms of vaginal hypoanesthesia, coital anorgasmia, as well as incontinence during sexual intercourse or orgasm can develop. In addition, altered anatomy with changes in vaginal convexity can affect orgasmic capacity and dyspareunia, revealing the importance of vaginal anatomic angles in sexual satisfaction and the need to maintain vaginal axis and depth during surgery. Clearly, women with pelvic floor disorders often have co-existing urologic and sexual dysfunction complaints. Due to this overlap, all women who present with voiding dysfunction or prolapse should be questioned about their sexual function as well.

CLINICAL RESEARCH UPDATE

Urinary incontinence

Studies have revealed a relationship between urinary incontinence and sexual function complaints. Incontinence affects emotional well-being, and is associated with feelings of shame, depression, anger, guilt, loss of self-esteem or preoccupation with urine control (1). A study of patients with stress incontinence found more than 40% had sex life impairment due to their incontinence. Specifically, the respondents reported pain with intercourse and/or incontinence with intercourse and felt that their sex life overall was “spoilt” by their incontinence (2). Loss of urine during intercourse or orgasm, which occurs in up to 24% of sufferers, may be a significant contributing factor to sexual dysfunction. Another study found a significantly higher incidence of sexual dysfunction in patients complaining of idiopathic detrusor instability (3). In a prospective study of patients with urodynamic diagnoses, total sexual function (TSF) score was significantly lower

in patients with detrusor instability (DI) than in those with genuine stress, sensory urge or mixed incontinence (3). Similarly, other studies have found urinary incontinence to impact on sexuality. In one study, symptoms of urinary incontinence significantly correlated with high levels of sexual distress and low sexual desire (4). However, other studies have not found a relationship between incontinence and sexual dysfunction (5). In the past, psychiatric factors were thought to play a causative role in incontinence, specifically in detrusor instability (6). However, more recent research supports that these psychiatric associations may be a result of, rather than a cause, of the disorder.

Pelvic organ prolapse

The precise relationship between prolapse of the pelvic organs and sexuality has not been well documented. The work of Kegel and Graber supports the theory that a non-functional pelvic floor impairs the contractions and response of the pelvic muscles to orgasm. Currently, studies are ongoing to evaluate the effects of these disorders on sexuality and response to surgical correction.

Data suggests higher rates of sexual dysfunction in patients with pelvic floor prolapse (7). One study compared sexual function in women with and without uterovaginal prolapse and urinary incontinence. The authors found overall that sexual function in women with prolapse and urinary incontinence did not differ from continent women without prolapse. Age of the population appeared to be the only predictive factor (8). Occurrence of dyspareunia in their sample did not vary significantly with grade of prolapse; however, women with more advanced prolapse were more likely to be symptomatic. Increasing grade of prolapse in this group predicted interference with sexual activity but did not affect frequency of intercourse or satisfaction (8). In another study, comparisons of sexual function in women with uri-

nary incontinence and pelvic organ prolapse were made to determine the effects of therapy on sexual function (9). While prolapse was found to be more likely to be perceived as affecting sexual function, overall sexual satisfaction was found to be independent of diagnosis of, or therapy for, urinary incontinence or prolapse. Of course, these results may be affected by the nature of the study population, as the study subjects were women who chose to be sexually active despite symptoms of prolapse or incontinence. Additionally, women who agree to participate in a study of sexual function may be somewhat different from those who refuse to participate, and this may affect their attitude towards sexual activity.

Pelvic surgery

Pelvic surgery to correct prolapse and incontinence may affect sexual function and response. Hysterectomy has been associated with impaired sexual satisfaction, which may be a result of either destruction of vital nerves in the area of the lower uterus and cervix or removal of organs which contribute to orgasm *via* contraction (10). Dissection of the upper and anterior vaginal wall during sling procedures may affect the abundant nerve fibers that course through this area and have resultant effects on sensation and arousal (11). While pelvic surgery has been found to cause sexual dysfunction, an increase in sexual arousal with episodes of spontaneous orgasm after rectocele repair has recently been reported (12).

Weber et al. evaluated sexual function in women before and after surgery for prolapse, incontinence or both. Eighty-one women who were sexually active before and after surgery were identified. Sexual function improved or did not change for most patients. It was not possible to correlate symptoms after surgery with objective changes in the vaginal anatomy (13). Vaginal dimensions of introital caliber and length

were significantly lower after surgery, although this was not clinically significant. Dyspareunia occurred in 8% of women before surgery and 19% of women after surgery. Pain was most often found in conjunction with posterior colporrhaphy with or without Burch colposuspension.

Some studies suggest that 20% of women have sexual function complaints following surgery for incontinence and prolapse (14, 15). Other studies have demonstrated that pelvic floor surgery involving vaginal dissection produces neuropathy of the pudendal nerve as measured by terminal motor latency. This neuropathy can affect vaginal sensation and orgasm (11). Thus, prior to surgical or medical intervention, it is important to assess baseline sexual function including presence of vaginal pain, arousal or orgasmic difficulties, alteration in genital sensation and low libido.

PRACTICAL MESSAGES

- Women undergo drastic anatomical changes to their pelvic floor throughout their lifetime as a result of pregnancy, delivery, hysterectomy and menopause, which can have devastating effects on urologic and sexual function.
- Disorders of the pelvic floor include stress incontinence, overactive bladder and urge incontinence, pelvic floor prolapse and pelvic pain syndromes.
- Urinary incontinence may increase sexual distress, decrease total sexual function, and have a negative effect on emotional well-being overall.
- Pelvic organ prolapse is associated with female sexual dysfunction, with sexual function complaints more prevalent amongst women with higher grades of prolapse.
- As pelvic surgery to correct prolapse and incontinence may also affect sexual function and response, it is important to assess baseline sexual function including presence of

vaginal pain, arousal or orgasmic difficulties, alteration in genital sensation and low libido.

- All women who present with voiding dysfunction or prolapse should be questioned about their sexual function as well.

CONCLUSIONS

Women with pelvic floor disorders often have co-existing urological and sexual complaints. These diseases likely affect women's sexual well-being through both physical and emotional effects. Patients who present with these urological problems should be questioned about their sexual function. Surgical treatment in these patients may be curative of some aspects of their sexual dysfunction (e.g. repairing incontinence), but may also have undesired effects on sensation, blood flow and anatomy. This results in disorders of arousal, orgasm or pain. A better understanding of the functional anatomy of the pelvic floor will guide us in a more targeted approach to management of these conditions.

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