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REVIEW PAPER

Multidisciplinary management of women with pelvic organ prolapse, urinary incontinence and lower urinary tract symptoms. A clinical and psychological overview

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Abstract

Although female sexual dysfunctions are common among women with urogynecological conditions, they have not been thoroughly studied and there are still many questions without an answer. The recent evidence on sexual disorders in women with urogynecological diseases shows a quite wide spectrum of therapeutic approaches, which require the physicians to take into account not only the primary symptoms, but also all the associated factors negatively affected. It has been widely underlined that gynecological diseases are often associated with high stress and have a negative impact on quality of life and psychological well-being of women affected. For this reason, a multidisciplinary approach for the management of these diseases is highly recommended. Also in the case of urogynecological disorders, it is important to take into account psychological outcomes throughout the diagnostic and therapeutic process.

In the light of these considerations, the aim of this short review is to evaluate the impact of the main urogynecological diseases and the currently available therapeutic options in order to improve quality of life and sexuality of these patients and to stress the need for a multidisciplinary approach in order to minimize the negative consequences of these diseases for the sexual well-being of women and their partners.

Key words: pelvic organ prolapse, urinary incontinence, LUTS, quality of life, sexuality.

Introduction

Sexual functioning plays a relevant role in a woman's health and quality of life; therefore, sexual dysfunction may have an impact on a couple's relationship and overall quality of life [1, 2].

Sexual dysfunctions affect women more than men with about 95% of them suffering from at least one sexual problem [2]. According to McCabe's data, a large proportion of women experience multiple sexual dysfunctions [3].

Female sexual dysfunctions (FSD) are disorders encompassing sexual desire and arousal, orgasm, or dyspareunia, all conditions associated with psychological distress [4, 5]. The most frequent sexual dysfunctions in women concern desire and arousal domains [3]. The etiology of these problems may be multifaceted, involving advanced age, chronic diseases, menopause, vaginal delivery, surgery, urinary incontinence, gynecological cancer, infertility or pelvic floor muscle (PFM) dysfunctions [6-15].

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Although FSD are common among women with urogynecological conditions, they have not been thoroughly studied [9]. The aim of this short review is to evaluate the impact of the main urogynecological diseases and the currently available therapeutic options to improve the quality of life and sexuality of patients as well as to stress the need for a multidisciplinary approach to minimize the negative consequences of these diseases for the sexual wellbeing of women and their partners [16, 17].

Pelvic organ prolapse

Pelvic organ prolapse (POP) is a complex condition consisting in the failure of the supporting structures of the vagina [18] resulting in a collapse of the anterior and posterior vaginal wall, the uterus (cervix), or the apex of the vagina [19-21]. Urogenital prolapse affects about 45% of post-menopausal women, with a 30% to 50% prevalence in a lifespan [19, 22, 23]. Aging, pregnancy, delivery and history of pelvic surgery are some of the main causes of POP. Pelvic floor weakness may influence the development of POP, leading in some cases to a wider opening of the genital hiatus [24]. Brækken *et al.* reported that women with had the PFM more weakened, less resistant and with high vaginal resting pressure, and had higher POP incidence [25]. Moreover, some conditions that increase intra-abdominal pressure – i.e., chronic pulmonary disease, constipation, obesity and strenuous manual work – can increase the risk of POP [19, 26, 27]. The progressive ageing of the population and the recourse to surgical gynecological treatments are also underlying conditions associated with higher POP prevalence [19, 28]. The treatment of POP relies of both non-surgical and surgical approaches. In particular, pessaries and PFM training can be useful therapeutic tools to relieve symptoms [7, 8], in addition to weight loss in the case of obesity [26, 29]. Nevertheless, most non-surgical treatments are ineffective in the presence of severe prolapse, and surgery is the most appropriate approach in these cases. According to Barber, surgery is generally reserved for patients with bothersome prolapse symptoms who have at least stage II prolapse on examination when conservative treatments have failed or no longer work [21]. Depending on the specific instance, surgical management may consist in apical suspension (sacral colpopexy and sacrospinous ligament fixation), or anterior and posterior (colporrhaphy, perineorrhaphy and obliterative procedures) vaginal prolapse repair [30-33]. Prolapse repair basically aims to relieve the patient's symptoms, restore normal anatomy and function of the pelvic structures, prevent relapses, and correct possible intrapelvic defects [34, 35]. Surgical treatment of prolapse is contraindicated in women with local vaginal diseases, with early-stage asymptomatic prolapse, or who are unfit to undergo surgery [34]. Synthetic mesh has been widely used in the surgical treatment of pelvic organ prolapse but exposes women to the risk of specific complications which may require mesh removal [36-40]. In this regard, the US Food and Drug Administration (FDA) warned about serious complications associated with the transvaginal placement of mesh for POP [41, 42]. In the same way, the International Urogynecological Association's (IUGA) Grafts Roundtable [37] advises against the use of vaginal meshes to correct POP in the presence of stage I-II, local/systemic pain syndromes, or possible pregnancy; in addition, the use of meshes does not seem to be highly effective in the case of prolapse of the posterior compartment or in women aged below 50 years; conversely, the best results seem to be achieved in women aged above 50 years, with stage II prolapse of the anterior compartment, deficient fascia, chronic increase in intra-abdominal pressure, or both, and in the case of relapses [37]. Finally, possible complications with the use of meshes have been reported either during or after prolapse correction, or intraoperatively, i.e., bleeding; injury involving the bladder, ureter or urethra, nerve or bowel; anesthesia-related complications, and deep venous thrombosis (DVT), with the subsequent risk of pulmonary embolism (PE) [34, 36]. Postoperative complications include infections, mesh contraction or erosion through the vagina, chronic pain, recurrent voiding symptoms and sexual dysfunctions [34, 43, 44]. It is noteworthy that patients should be well aware of the possible adverse outcomes of the therapeutic approaches proposed, to allow them to agree with the urogynecologist on the most appropriate option [28, 40].

POP is quite a complex disorder, as it involves both physical and functional aspects [21, 28]. Indeed, it can significantly affect the patient's quality of life and psychological well-being, since it may be associated with a variety of urinary, bowel and sexual symptoms [19, 20]. In fact, sexual dysfunctions are very common in women with POP and cystocele [31, 32, 45], who frequently report dysfunctional sexual desire, arousal, orgasm, and pain, with possible negative implications for the relationship with their partners [28, 32]. In particular, it has been underlined that obese women with pelvic floor disorders have worse sexual function and quality of life than non-obese women [46].

Various studies have investigated changes in quality of life and sexual function of women with POP and cystocele undergoing surgical correction using vaginal mesh, with controversial results [20, 31, 32, 41, 42, 45, 47-51]. In fact, according to some authors, surgical management of POP and cystocele significantly improves the long-term quality of life and sexual response of these patients even if surgical approaches involving abdominal or transvaginal mesh may result in a decline in sexual function and worsening dyspareunia [31, 32, 45, 52-54]; conversely, other studies describe worsen-

ing of the patient's sexual function and dyspareunia following mesh treatments [48-51]. Faced with this evidence, in our opinion, a multidisciplinary approach in the treatment of women with POP and cystocele is of paramount importance. General and specific questionnaires have been designed to assess quality of sexual life in women with POP before and after surgical correction. Of these, the most feasible and most commonly used are the Short Form-36 (SF-36), assessing quality of life [55], and the Female Sexual Function Index (FSFI), assessing the effects on sexual function [56]. However, the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12) is the most specific tool aiming to evaluate the impact of POP on these patients' sexual life [57]. Recently, the IUGA has developed a new sexual function scale, derived from the original PISQ-12 questionnaire. The IUGA Revised (PISQ-IR) questionnaire is a condition-specific tool designed to evaluate sexual function in women with POP and urinary incontinence; it is recommended to evaluate the impact of pelvic floor disorders on quality of life and sexuality of affected women [58]. Additionally, questionnaires aiming to understand the relationship between psychological symptoms and POP are a very useful tool in the preoperative assessment. In this regard, tests such as the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) [59] and the Symptoms Checklist-90-R (SCL-90-R) [60] evaluate both psychopathological symptoms and personality traits and are thus able to detect possible psychological comorbidities.

Given the available evidence of the significant impact of POP on emotional health and subjective well-being, this assessment should be considered essential in the therapeutic approach to women with POP, so as to ensure more adequate physical and functional rehabilitation [61-64].

Urinary incontinence

Urinary incontinence (UI) is defined as the complaint of any involuntary leakage of urine [65]; it is a major public health issue not only for its physical, psychological and social impact on quality of life of women but also because it seems to be an important risk factor of sexual dysfunctions in both the male and female population [9, 22]. This benign condition is quite common in women and its prevalence ranges between 11.4 and 73.0% [66]. The etiology of UI is multifactorial and is related to age and to several conditions such as overweight and obesity, diabetes, interstitial cystitis, urinary tract infections, number of pregnancies and menopause [22, 27, 66, 67]. It is important to underline the close association between menopause and urinary incontinence. In this regard, several studies have confirmed that overactive bladder syndrome has a higher prevalence in menopausal women and significantly affects overall quality of life and sexual function [68-70].

A common subtype of UI is stress urinary incontinence (SUI), defined as a "complaint of involuntary loss of urine on effort or physical exertion including sporting activities etc., or on sneezing or coughing" [71, 72]. Its incidence is estimated to be about 15-20% of adult women [73].

The main disorders ensuing from the association between UI and FSD are poor lubrication, painful sexual intercourse and a negative impact on several psychosexual domains (sexual satisfaction, negative body image, mood, self-esteem and poor relations) [74-76]. Women with SUI tend to avoid occasions of sexual intercourse in order to prevent embarrassment caused by nighttime incontinence or leakage during intercourse [66, 72, 77, 78]. These situations are common causes of depression and may be associated with disorders of arousal and desire, poor lubrication, anorgasmia, and dyspareunia [4, 9, 66, 76]. Symptomatic urinary tract infections can also be an underlying cause of emotional distress and low self-esteem, thus contributing to sexual dysfunctions and other complications [72].

Overall, to the best of our knowledge, most of the studies dealing with these issues are characterized by important limitations regarding the selection of the population sample, differences in study designs, and improper categorization of type of UI [22].

Treatment of urinary dysfunction relies on behavioral, pharmacological and surgical therapy [79]. The decision of the most suitable treatment option is based on various variables, including patient's history, age, severity of condition, subjective symptoms, obesity, as well as on the results of the specific clinical and instrumental examinations performed [22, 79, 80].

Pure urgency incontinence is usually pharmacologically treated, whereas SUI generally requires surgical correction [75, 81].

Women affected by urge incontinence seem to benefit from a combination of supervised behavioral approaches (including PFM exercise instruction, strategies to suppress urge, timed voiding, and fluid management) and antimuscarinic treatment to reduce overactive bladder symptoms and urinary incontinence during sexual intercourse and orgasm [77, 82]. Pelvic floor muscle training (PFMT) is used in conservative treatments for all types of urinary incontinence and showed an improvement of functional parameters of desire, arousal and orgasm domains [66].

Gubbiotti *et al.* highlight that mirabegron is effective both to control urinary symptoms in women with overactive bladder and to improve their sexual life [83].

There is still little agreement on the role of estrogen therapy in menopausal symptoms and urinary incontinence [84, 85]. The Women's Health Initiative (WHI) trial showed increased incidence of urgency, stress, and

mixed incontinence in women after one year of treatment with estrogen and medroxyprogesterone acetate [86]. However, the population sample for this study was not selected to evaluate urinary incontinence; patients' data were collected by means of self-report questionnaires, and age at start of estrogen therapy was distributed over a wide range. All these factors may possibly account for the discrepancies with the other reports and reduce the value of the study. In this regard, other studies have reported that oral estrogen therapy increases the maximum urethral closure pressure (MUCP) in women affected by SUI [87], thus improving some postmenopausal symptoms such as urinary frequency, nocturia and recurrent infections [88].

According to other authors, although oral and local estrogen therapy does not improve SUI per se, it is able to improve subjective symptoms in some cases [89, 90]; in these patients, a behavioral approach such as perineal pelvic rehabilitation and reinforcement of periurethral muscles can be considered the treatment of choice [91, 92].

Another therapeutic option for female urinary incontinence is correction by means of mini-invasive surgery, using tension-free suburethral slings. In particular, the recently developed transobturator tape (TOT) ensures good results and is associated with lower intraoperative morbidity and hospitalization times as well as fewer postoperative complications [54, 73, 80, 93].

Moreover, both TOT and tension-free vaginal tape (TVT) improve the elasticity of the vaginal and clitoral blood flow, positively influencing sexual activity of women with SUI [94].

Recently, Blaivas *et al.* described the operative technique of autologous fascial pubovaginal sling (AFPVS) surgery comparing safety and efficacy of this technique with those of the synthetic midurethral sling. While the sling is associated with more severe complications, AFPVS seems to be the gold standard for the treatment of SUI [95].

Vaginal pessaries are an effective conservative treatment characterized by a rather low complications rate and high level of satisfaction of women treated with this device [96].

Finally, laser therapy seems to be a promising treatment option for genitourinary syndrome of menopause, vaginal laxity, and stress urinary incontinence symptoms. However, the IUGA committee opinion underlines that the therapeutic advantages of nonsurgical laser-based devices in urogynecology can only be recommended after robust clinical trials have demonstrated their long-term complication profile, safety, and efficacy [97].

Lower urinary tract symptoms

Lower urinary tract symptoms (LUTS) are characterized by a set of symptoms related to the bladder filling phase and include a higher frequency of daily and nocturnal voiding, defined as daytime and nighttime pollakiuria [98]. LUTS are very common among women and can significantly affect their physiological, social and sexual life [98-100].

Endometriosis may be a significant cause of urinary symptoms. In this regard, it has been widely demonstrated that surgery for deep infiltrating endometriosis (DIE) is associated with a high rate of urinary side effects with a significantly negative impact on quality of life in about 20% of patients [101]. In addition, urinary tract endometriosis (UTE) may cause LUTS such as frequency, dysuria, and hematuria [102, 103].

At variance with UI, only a small number of studies has investigated sexual dysfunctions in women with LUTS, and many of them are flawed by several methodological problems, such as the use of different psychometric instruments and indexes to evaluate patients' sexual wellbeing [22]. Most studies have shown how LUTS can negatively affect a woman's sexuality, considering coital pain disorders as the most common sexual problem reported by patients with bladder dysfunction [104, 105]. Indeed, LUTS are frequently associated with female genital inflammation and poor vaginal lubrication during sexual intercourse [104].

In this regard, Moller *et al.* suggested that presence of female sexual dysfunctions and the consequent restraint in sexual activity may increase the occurrence of LUTS; in fact, these authors observed a 3- to 6-fold higher prevalence of LUTS in women who curtailed their sexual activity in comparison to those who were sexually active, and a non-significant decrease of LUTS in women who became again sexually active [99].

Discussion and conclusions

Recent evidence about sexual disorders in women with urogynecological diseases shows quite a wide spectrum of therapeutic approaches, which require the physicians to take into account not only the primary symptoms, but also all the associated factors negatively affected by urogynecological symptoms. For instance, there is controversy over the results of estrogen therapy [86] – although it is specifically indicated in given conditions, such as in the presurgical management of POP [19], and seems to have a favorable effect on the subjective symptoms associated with urogynecological symptoms [77, 86, 88]. The behavioral approach also seems to have a positive effect on the treatment process, along with surgical correction [33].

It has been widely underlined that gynecological diseases are often associated with high stress and have a negative impact on the quality of life and psychological well-being of the women affected [8, 106-116]. For this reason, a multidisciplinary approach to the management of these diseases is highly recommended [117].

Also in the case of the urogynecological disorders, it is important to take into account psychological outcomes throughout the diagnostic and therapeutic process [118]. Firstly, adequate preliminary clinical and instrumental assessment of the urogynecological disorder is needed to correctly assign the patient to the most suitable medical and/or surgical therapeutic approach. The overall evaluation of the dysfunction from both a psychological and sexual point of view, possibly including sexological counseling, is of paramount importance. Indeed, both domains play an extremely important role in a woman's overall well-being and quality of life [28, 77, 98, 119]. For this purpose, the use of validated instruments to assess the impact of urogynecological disorders on quality of life and female sexual function is advisable [120]; in particular, this should become an integral part of the therapeutic process to limit as much as possible the undesirable consequences of these diseases. For this purpose, it is crucial to identify simple and efficient standards for good counseling of the patient in order to choose the best therapeutic option for each woman.

Disclosure

The authors report no conflict of interest.

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