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The Great Debate Of Pelvic Organ Prolapse and Impact of Surgery on Female Sexual Life: An Overview

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Abstract: According to epidemiological studies, sexual dysfunction affects roughly one-third of women with pelvic organ prolapse (POP). POP can lead to a loss of self-esteem, difficulties bonding to the opposite sex, and even the abandonment of sexual activity. Women with POP are less satisfied with their sexual activity than women without: they have a weaker emotional closeness to their partner and report feeling desire and pleasure less frequently. Furthermore, they are more prone to experience pain during intercourse. Anatomically, this could be the result of mechanical blockage, vaginal wall laxity, or both. Furthermore, when POP and urine incontinence are present, sexual activity is compromised because to coital incontinence, which can occur concurrently. Sexual function may improve with anatomical repair of POP. The benefits of POP correction must be balanced against the risks associated with vaginal surgery. Because the vagina is a sexual organ whose proper functioning is based on normal anatomical and neurovascular elements, any POP surgery is likely to have an impact on sexual function. So far, the evidence on the effects of POP surgery on sexual life is equivocal. The divergence in these results could be attributed to both cultural and methodological reasons.

Keywords: *Pelvic Organ Prolapse; Surgery; Sexual.*

Introduction

Pelvic floor defects are created as a result of childbirth and are caused by the stretching and tearing of the endopelvic fascia and the levator muscles and perineal body. Partial pudendal and perineal neuropathies are also associated with labor. Impaired nerve transmission to the muscles of the pelvic floor may predispose them to decreased tone, leading to further sagging and stretching. Therefore, multiparous women are at particular risk for UP. Genital atrophy and hypoestrogenism also play important contributory roles in the pathogenesis of prolapse. However, the exact mechanisms are not completely understood. Prolapse may also result from pelvic tumors, sacral nerve disorders, and diabetic neuropathy [1]. Other medical conditions that may result in prolapse are those associated with increases in intra-abdominal pressure (eg, obesity, chronic pulmonary

disease, smoking, constipation). Certain rare abnormalities in connective tissue (collagen), such as Marfan disease, have also been linked to genitourinary prolapse [1]. Through evaluation and definition of all support defects is of critical importance because most women with UP have multiple defects [1]. The uterus (womb) is normally held in place by a hammock of muscles and ligaments. Prolapse happens when the ligaments supporting the uterus become so weak that the uterus cannot stay in place and slips down from its normal position. These ligaments are the round ligament, uterosacral ligaments, broad ligament and the ovarian ligament. The uterosacral ligaments are by far the most important ligaments in preventing uterovaginal prolapse [2].

Sexual dysfunction is present in almost one third of women with pelvic organ prolapse (POP), as epidemiological studies have shown. POP can cause loss of self-confidence, difficulties in relating to the other sex and even abandonment of sexual intercourse [3]. Women with POP are less satisfied with their sexual activity compared to women without: they show a lower degree of emotional closeness to their partner and say that they feel desire and pleasure less frequently. Also, they are more likely to feel pain during intercourse, Anatomically, this could be due to mechanical obstruction or laxity of the vaginal wall or both. In addition, when POP and urinary incontinence are associated, sexual activity worsened because of coital incontinence that can be present concomitantly. [3]. Sexual function may improve with anatomical correction of POP. The gains from the correction of POP must be weighed against the effects of surgery in the vaginal area. Since the vagina is a sexual organ and its adequate functioning is dependent on normal anatomical and neurovascular factors, we can expect that any POP surgery will affect sexual function [4].

So far, the data on the impact of POP surgery on sexual life are inconclusive. The discrepancy in these results may be due to both cultural and methodological factors. First, expectations from sexual relationships and woman's comfort in expressing her sexual problems vary with their country of origin and cultural background. Secondly, methodological differences make difficult to compare varying outcomes from different studies and to interpret differences in how those outcomes are measured, e.g. how to quantify sexual responses [4]. Several techniques - including vaginal, open abdominal and laparoscopic approaches - have been proposed to correct POP, with varying success rates. It is also now accepted that different techniques in POP surgery have very different impacts on sexual function. Considering that surgical dissection may result in tissue damage, devascularisation and denervation, which may lead to a drop in vaginal blood flow and more fibrosis [4].

Vaginal POP Surgery Using Native Tissue

For native tissue repair, a recent systematic review has been published. This review only included studies that reported on sexual function of sexually active women with symptomatic prolapse who underwent vaginal surgery with native tissues and in which women acted as their own controls. Papers including patients who had concomitant incontinence surgery or vaginal mesh procedures were excluded from this review. The study concluded that sexual function is significantly improved after surgery. Dyspareunia was significantly reduced following native tissue POP surgery, and postoperative chances of improvement or no change in dyspareunia was 4.8 times greater than the risk of deterioration. However, when a colpoperineorrhaphy was performed in combination with an anterior repair, no improvement in sexual function and higher rates of dyspareunia rates were reported [5]. The use of levator plication sutures to repair the posterior compartment and enterocele is considered the main reason causing dyspareunia: if performed, levator plication needs careful assessment of vaginal width to ensure that vaginal capacity is not compromised by overtight sutures . Dyspareunia can also be caused by excessive scarring with consequent lack of elasticity of the vagina. [5].

Vaginal POP Surgery with Mesh

Vaginal surgery with synthetic mesh or graft materials was proposed to reinforce the pubocervical and rectovaginal fascia in order to provide support to the pelvic floor. Implantation of synthetic mesh might damage vaginal innervation and vascularisation, which could cause sexual dysfunction and in some cases may cause the new onset or worsening of dyspareunia. This may be due to a decrease in stress shielding of the underlying vaginal wall after implantation of mesh, which in turn may result in an atrophic stiff vagina and less lubrication [6]. Other aspects of sexual function remain unchanged. No significant difference is reported in degree of sexual

activity, sexual desire, sexual arousal, orgasm and satisfaction. There is no correlation between these results and anatomical correction or position of the mesh: there are no beneficial or detrimental effects in sexual function after either anterior only or anterior and posterior mesh positioning [6].
In the last Cochrane systematic review on the surgical management of POP, analysed sexual function and dyspareunia in women undergoing mesh surgery in the anterior, posterior and apical compartments . After anterior polypropylene mesh repair, no differences in sexual function or de novo dyspareunia were identified when compared with anterior colporrhaphy [7]. Finally insufficient informations are available to provide evidence-based recommendations on sexual function after vaginal mesh repair in the posterior compartment. However, after the 2011 FDA advertisement, confirmed in 2014, the use of mesh for posterior compartment is not recommended [7].

Abdominal and Laparoscopic Surgery

The most studied procedure for correction of advanced POP is colposacropexy (CSP). Traditionally, CSP has been performed via a laparotomy (abdominal sacral colpopexy); however the use of laparoscopic and robotic approaches is increasing. To date, only few studies have focused on the relationship between CSP and sexuality, but the results so far are positive. Using a validated questionnaire, Costantini et al. showed that patients had significant post-op improvements in their total FSFI scores and in the domains of desire, arousal and orgasm [8].

The Role of Hysterectomy

Over the past few decades, the psychological and emotional value of reproductive organs has changed profoundly. Uterus-sparing surgery is becoming more popular worldwide, and consensus is growing that the uterus can be preserved at the time of pelvic reconstructive surgery in appropriately selected women who desire it [8]. In fact, anatomical modifications induced by hysterectomy can damage sexuality through lack of uterine contractions and altered perception of orgasm. Moreover hysterectomy can cause vaginal shortening and damage to nerve endings and may also have psychological effects [8]. Damage to the innervation of the uterine cervix and the upper vagina following hysterectomy could affect lubrication and orgasm. The internal orgasm occurs essentially in the cervix and is provoked by stimulation of the fibre endings of the uterovaginal plexus that surround the cervix and the upper vagina. Therefore, the loss of most of the uterovaginal plexus is likely to have adverse effects on sexuality [8].
On the other hand, uterus-sparing surgery raises concerns about the most suitable approach (vaginal, abdominal, laparoscopic), the risks of partial POP resolution, mesh-associated complications, new onset of urinary incontinence, increased recurrence rate with some approaches, failure to improve urinary function, failure to improve bowel and sexual symptoms, longevity of outcome and lifetime risk of cancer [8].
Sacrospinous hysteropexy (SSH) is one of the most studied vaginal techniques for uterus preservation and consists in the unilateral attachment of the posterior uterine cervix or the uterosacral ligaments to the right sacrospinous ligament, about 2 cm medial from the ischial spine, using a combination of permanent and delayed absorbable sutures. Favourable results have been demonstrated on sexuality, although the majority of these studies are flawed by selection and information bias, short follow-up or lack of adequate control groups [7].
Abdominal and laparoscopic hysterosacropexy has the main advantage of ensuring a secure proximal and distal vaginal anchorage without tension with a normal vaginal axis and a good vaginal length, which is mandatory for sexual activity [7]. Comparing patients who underwent hysterosacropexy (HSP) and hysterectomy with CSP, there were no differences in outcomes, in terms of subjective, objective and patient's satisfaction , The advantages of HSP include maintaining pelvic anatomy integrity, which is crucial in prolapse resolution, and significantly reducing blood loss, operating times and hospital stays, while the main disadvantage is the continuous surveillance required for cervical and uterine cancer [6].
A further study of the same group demonstrated no substantial differences regarding sexual activity in patients in which the uterus has been spared (HPS group) as opposed to those in whom it has been removed (CSP group): data obtained from FSFI questionnaire demonstrated that there were no significant differences

between the two groups in terms of total score and also comparing the examined individual domains - desire, arousal, lubrication, orgasm, satisfaction and pain [6]. The main reason for these results is that, as the uterus preservation is a woman's choice, the two groups represent different kinds of women, i.e. the women who decided to remove the uterus are women in which it doesn't represent as sexual organ. On the contrary the women who prefer uterussparing surgery are women in which the uterus plays a role in their femininity and obviously in their sexual life [6].

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