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CLINICAL OPINION

The underutilization of obliterative and constrictive surgery in the surgical treatment of pelvic organ prolapse

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Abstract

Vaginal length and caliber are necessary for satisfactory vaginal coitus. Surgical treatment of pelvic organ prolapse (POP) can include preservation of vaginal length and caliber, or shortening and narrowing of the vagina (constrictive and obliterative surgery). The latter option is proven to have fewer complications and a lower risk of recurrence of POP. Women undergoing surgical intervention for POP who are not coitally active and choose not to be coitally active for the rest of their lives should be offered constrictive and obliterative surgery.

Keywords Apical suspension · Constrictive surgery · Obliterative surgery · Pelvic organ prolapse · Vaginal length · Vaginal intercourse

Abbreviations

OCP	Obliterative and constrictive procedures
POP	Pelvic organ prolapse
SCP	Sacrocolpopexy
SSLS	Sacrospinous ligament suspension
SP	Suspensory procedures
USLS	Uterosacral ligament suspension
VM	Vaginal mesh surgery

Surgical treatment of pelvic organ prolapse (POP) could encompass procedures designed specifically to maintain vaginal length and caliber. These include vaginal mesh surgery (VM), sacrospinous ligament suspension (SSLS), iliococcygeus suspension, uterosacral ligament suspension (USLS), and sacrocolpopexy (SCP) [1]. Different approaches are possible for SCP: open abdominal, laparoscopic and robotic. In this manuscript, all procedures designed to maintain vaginal length and caliber are referred to as suspensory procedures (SPs).

When maintenance of vaginal caliber and length is not within the surgical goals, surgical treatment of POP can be obliterative or constrictive. Le Fort colpocleisis is the approximation of the anterior and posterior vaginal walls over a uterus kept in situ. However, colpocleisis (closure of the vagina) can also be performed for surgical POP treatment in patients with previous hysterectomy [2]. Constrictive surgical treatment is the narrowing of the genital hiatus and vaginal caliber through constrictive anterior and posterior colporrhaphy, levator myorrhaphy, and high perineorrhaphy with or without hysterectomy [3]. Obliterative and constrictive procedures (OCPs) share a common feature: extensive colpectomy that jeopardizes vaginal length and caliber and precludes the possibility of future vaginal coital activity.

Two outcomes are used to evaluate POP surgery: recurrence of POP, and complications—early and late-. Although both outcomes are influenced by patient population characteristics and surgeon experience, the literature provides at least level 2 evidence that allows meaningful comparison between SPs and OCPs.

Recurrence rates following SPs are variable. The Michigan four-wall SSLS (considered by many experts to have a superior outcome among SSLS approaches) is associated with a 17% rate of recurrence beyond the hymen at 8-year follow-up [4]. In the E-CARE trial, the 7-year symptomatic failure rates following SCP were 24–29%, depending on whether or not urethropexy was performed [5]. In the OPTIMAL randomized clinical trial, the subjective failure rates (bulge symptoms) at 5 years post-surgery were 37.4% and 41.8% for USLS and SSLS respectively [6].

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In the largest retrospective cohort study on SPs to date, which included 1,381 women, recurrence rates 6 years after SP surgery using "the composite outcome for recurrent POP" were estimated at 44.3% for USLS, 48.9% for laparoscopic SCP, and 56.5% for robotic SCP [7]. It is noteworthy that the surgeon's choice was instrumental in the type of surgery performed, which poses a clear advantage over randomized surgical trials, where a surgeon's simultaneous proficiency in different types of surgery could be a limiting factor.

Comparatively, the long-term anatomical success rate of obliterative procedures approaches 100% in some series [1, 2]. A literature review of 28 studies, including 1,810 patients, concluded that the rate of POP recurrence is 4.2% following colpocleisis [8].

Major complications of SPs include hemorrhage, organ injury, ureteral kinking, buttock pain, and mesh exposure [5, 6]. Most of these can be successfully managed, especially with early recognition. Serious late complications, however, such as fistulas and mesh exposure following SCP—though uncommon when the vaginal cuff is not opened—can result in serious life-long morbidity, and physical and psychological distress [1, 5]. In a review of comparative studies of VM, surgical revision rates were 3–8% [9]. In contrast, in a review of 1,027 patients who had OCPs with or without hysterectomy, the adverse events cited above were not encountered, and the most common complication was a urinary infection [10]. Indeed, most surgeons performing colpocleisis attribute their choice to short operating time and low risk of complications [11].

There are only a few studies that simultaneously evaluate SPs and OCPs in retrospective cohorts [12–15]. All concluded that improvement in quality of life and patient satisfaction of the two groups are comparable. More serious complications and a higher rate of POP recurrence were observed in the SP group in one study [14], whereas shorter hospital stay and less postoperative impairment were noted in the OCP group in another cohort study [15].

Although regional anesthesia is a viable option for virtually all OCPs, this advantage is not possible for the laparoscopic and robotic approaches of some types of SP. Finally, proficiency in OCPs is arguably less demanding than that in SPs [11]. This is especially important as the aging population of women in need of POP surgical correction is on the rise.

With the two major outcomes (recurrence and complications) being in favor of OCPs compared with SPs, the obvious question is: are we not performing enough OCPs compared with SPs?

As detailed above, the rationale for performing SPs is the maintenance of the vaginal length and caliber. What is the anatomical function of the vagina? It is definitely not to "support" the pelvic organs. The proof lies in the very low recurrence rate of POP after colpocleisis. More striking is the natural experiment of congenital absence of the vagina. Girls with Mayer–Rokitansky–Küster–Hauser syndrome do not experience a "higher" incidence of POP in life. The anatomical functions of the vagina include vaginal birth and vaginal coitus.

Do the candidates for OCPs represent a minority among women undergoing surgical treatment of POP? To answer this question, one needs to estimate the incidence of coital activity in the age group of this population.

Many factors correlate with persistent sexual activity with advanced age: gender (higher frequency among males), physical and mental health, positive attitudes toward sexuality, and the presence of a partner [16].

In a community-based survey conducted in the UK in 1993, the incidence of penetrative intercourse during the previous year was 46% for women aged 55–64 years, and 23% for women aged 65–74 years [17]. In a US study conducted in 2005, only 62% of women aged 57–64 had engaged in sexual activity during the last year [18]. A similar rate was found among women older than 60 in the "Survey of midlife development in the United States," in which the availability of a cohabitating partner increased by 8-fold the likelihood of sexual activity [19]. Another US population-based study conducted around the same period, concluded that out of 2,109 women aged 40–69 (mean 55.9 ± 8), about one fourth were not sexually active [20]. In yet another cross-sectional US community study using self-reported surveys, 39% of women aged 60–69 were not sexually active, either because of the absence of a partner, or the partner's inability to have sex [21]. These results were consistent with those of a German study in which 37% of women in the same age group were not sexually active [22]. Very comparable results were demonstrated in Japan [23], and an even higher rate of sexual inactivity was found among surveyed women visiting nongynecological clinics in Lebanon [24]. The Global Study of Sexual Attitudes and Behaviors, which was conducted in 29 countries on five continents, evaluated random samples of women older than 40 (mean age 54–58 depending on the country cluster), and concluded that 35% out of 13,882 women had not had intercourse during the last year [25].

It is noteworthy that none of these studies specifically targeted women with POP, who may have sexual activity deterrents related to POP.

It is possible that the prevalence of sexual activity in some societies changes as a function of the period studied. In a Swedish study, the proportion of 70-year-old married women engaging in sexual intercourse increased by half from 1971 to 2000 (38% to 56%) [26]. It is noteworthy that among unmarried women, the proportion increased from 0.8% to 12%.

Although there is consistent evidence that sexual activity declines with age, there seems to be only a small likelihood that sexual activity "is resumed" among women who have not been active for a while. In a cohort study that evaluated sexual activity of 230 Australian women over a decade following

menopause (The Women's Healthy Aging Project), only 7% of the sexually active women in late menopause (mean age 70) had not been active in early menopause [27].

Sexual activity and vaginal coitus are not synonymous. Most patients make the distinction when properly asked. In a sample of lower income men and women older than 60 and living in subsidized housing in the USA, 57–62% reported embracing/hugging or kissing as a "physical or sexual experience," whereas intercourse was not experienced at all by 82% during the last year [28]. Consequently, cross-sectional and longitudinal studies that do not differentiate between sexual activity and vaginal coitus are likely to overestimate rates of coital activity.

Most of the studies addressing the impact of surgical repair of POP on sexual function have exclusively targeted women presumed to be exclusively heterosexual. The literature about women who have sex with women beyond the 6th decade is limited. There is some suggestion that with advanced age, the stability and continuity of a same sex relationship become more important, with less of a focus on sexuality [29]. Nevertheless, in a large multinational study that evaluated sexual practices of women who have sex with women, 94% of online responders older than 50 reported vaginal fingering and up to 64% reported using a vibrator or a dildo [30]. It is not known, however, whether equally frequent types of sexual activity evaluated in this survey (genital rubbing, scissoring, and oral sex) are considered as satisfactory in the absence of the vagina as a receptive organ. This issue calls for an open-ended enquiry as part of dedicated counseling by the treating surgeon before embarking on a technically challenging reconstructive surgery for the woman with POP who exclusively engages in sexual activity with women.

One commonly cited drawback of vaginal obliterative surgery is the possibility of patient regret. This concern can be minimized with adequate preoperative counseling. In a recent study evaluating 334 women with LeFort colpocleisis with a median follow-up of 3 years, none of the women was reported to regret her decision [31]. A systematic review concluded that reasons for regret, when present, are mostly due to the onset of urinary symptoms and failure, rather than loss of coital function [2].

Are OCPs being truly underutilized? Short of a prospective analysis, it is difficult to estimate the ratio of SPs to OCPs performed in different institutions and different countries. This is especially the case where the same surgical code can be used for either SPs or OCPs, as in vaginal hysterectomy and colporrhaphy, or where third-party payers do not recognize additional codes to describe apical suspension when performed in conjunction with hysterectomy. Judging from the volume of publications and presentations in meetings of professional societies, it is safe to assume that OCPs are being underutilized. Technological advances, such as the introduction of gynecological mesh, in addition to improved proficiency in laparoscopic and robotic procedures, have probably contributed to a wider adoption of SPs, not only among gynecologists, but among urologists as well [32]. A 2016 survey completed by pelvic floor surgeons from 18 Latin American countries revealed that 62% of urologists and 31% of gynecologists do not offer obliterative surgery to sexually inactive women [33].

It is unfortunate that OCPs continue to be advocated as a first-line surgical treatment only for women with "significant medical comorbidities" or in the "elderly" [11, 34]. Stigmatization of OCPs as "palliative" or "second-best" is simply not evidence-based, as detailed above. Furthermore, recurrence of POP—whether symptomatic or anatomical—is a function of time, although not in a linear fashion [4–7]. The same holds true about VM and SCP mesh complications [5, 9]. Consequently, a "younger age" may present an additional risk for SPs in the woman who is not intending to be coitally active throughout her life.

Certainly, even when very sure about the absence of coital activity in the future, it remains a patient's right to choose to maintain vaginal length and caliber. Adequate nonpresumptive evidence-based counseling is key in decision-making. Evaluation of patients' concerns and reasons for such a choice, when it exists, could represent an important area of research. Furthermore, prospective-cohort, "single-institution" studies comparing SPs and OCPs across patients' characteristics in addition to those of their providers could help to better evaluate the magnitude of the underutilization of OCPs and the reasons behind it.

In conclusion, surgeons should be mindful of the fact that OCPs improve quality-of-life measures, result in less morbidity than SPs, and are associated with a much lower recurrence rate of POP. Candidates for OCPs represent a sizeable proportion of women undergoing surgery for POP.

Compliance with ethical standards

Conflicts of interest None.

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