The Impact of Gynecological Surgeries on Female Sexual Quality of Life: A Prospective Cohort Study

Original Article

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ABSTRACT

Objective: To investigate the impact of benign gynecological surgeries on postoperative female sexual quality of life three months after the procedure.

Patients and Methods: The present study was a prospective study that included women who underwent gynecological surgeries for benign lesion such as hysterectomy, bilateral salpingo-oophorectomy (BSO), tubal ligation, anti-incontinence surgery, and pelvic organ prolapse reconstruction. All women were assessed using the sexual quality of life-female (SQOL-F) questionnaire.

Results: One hundred and eighty-eight women were included. The most commonly performed procedure was hysterectomy (25%), followed by classical repair (21%) and myomectomy (7%). In addition, 78.19% of the women were multipara. Preoperatively, the mean SQOL-F total score was 56.04 ± 17.947, which increase significantly to reach 79.33 ± 17.645 at the end of the third month postoperatively ($p < 0.001$). This significant difference was consistent regardless of the type of procedure. Regarding the domains of SQOL-F, there were statistically significant increases in the psychosexual feelings (21.16 ± 8.2 versus 30.49 ± 7.8, $p < 0.001$), sexual and relationship satisfaction (16.71 ± 7.9 versus 21.88 ± 4.5, $p < 0.001$), self-worthlessness (9.69 ± 3.5 versus 13.74 ± 3.13, $p < 0.001$) and sexual repression (8.468 ± 3.7 versus 13.20 ± 3.9, $p < 0.001$).

Conclusion: In conclusion, most gynecological surgeries found to have positive impact on the female sexual function and quality of life. So that, sexual function should be taken into consideration in planning and preoperative counselling for gynecological surgery also post-operative follow-up.

Key Words: Labour, pregnancy, posterior urethrovesical angle, transperienal US

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INTRODUCTION

Benign gynecological conditions that affect women's reproductive organs include endometriosis, uterine fibroids, pelvic masses, and uterine cysts. Surgical Interventions is an option for complicated cases. However, the impact of surgical intervention on women's sexual life has been widely overlooked. This is especially significant when considering functional outcomes such as incontinence, sexual dysfunction, and recurrence of symptoms after surgical intervention as severe adverse events and rate them as similar in severity to intensive care unit admissions[1]. Female sexual anatomy structures are intricately related to each other. Sexual response in women as in men depends on several different factors ; neural innervation to sexual organs, blood supply, level of sex hormones, and structural integrity of the organs themselves. The sexual response cycle in females begins with the neural response called arousal[2]. Female sexual structures are innervated by nerve fibers derived from the uterovaginal nerves, including the sympathetic and parasympathetic branches, as well as the pudendal nerve, which provides somatic innervation. Blood supply to these organs increases in response and provide appropriate flow and adequate engorgement, as well as transudative secretions across the vaginal wall[3].

Surgical Intervention for benign conditions can have serious harmful effect to any of the systems participating in the sexual response. Some studies have described a deleterious effect of vaginal surgery on sexual function and correlated the effect to disruption of nervous innervation[4]. Interruption of blood flow such as with tension-free vaginal tape operation which can compromise blood flow to the clitoris[5]. Moreover, various surgical repairs such as colporrhaphy or colposuspension seriously impact the structural integrity of the vagina and can cause severe sexual dysfunction due to discomfort or dyspareunia[6-8].

In this prospective study, we aimed to assess sexual function of 188 Egyptian women following benign gynecological surgeries.

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PATIENTS AND METHODS

The study's protocol gained the approval of the local ethics and research committee of Faculty of Medicine, Al-Azhar University, Cairo, Egypt. A written informed consent was obtained from every eligible woman prior to study enrollment.

Study Design, Setting and Participants:

The present study was a prospective cohort study that was conducted at Obstetric and Gynecological outpatient clinics of Al-Azhar University Teaching Hospital. We included sexually-active women who were scheduled to undergo gynecological surgeries for benign lesion such as hysterectomy, myomectomy, laparoscopic ovarian cystectomy, anti-incontinence surgery, and pelvic organ prolapse reconstruction. We excluded women with any chronic illnesses such as, chronic heart disease, neurological or Psychological disorders); on medications such as antidepressant, antiandrogenic or antihistaminic drugs; or malignant lesions. We also excluded women whose husband had sexual problem. A non-probability consecutive sampling technique was employed to recruit eligible women.

Data collection and Study's Visits:

The study consisted of two visits. The baseline visit was conducted before the surgery and the following data was collected: demographic characteristics, type of procedure, parity, mode of delivery, lactation status, history of chronic disease, history of previous medications and sexual quality of life. The sexual assessment of sexual quality of life was repeated three months after surgery. The sexual quality of life was assessed using the Sexual Quality of Life Female (SQOL-F) questionnaire. SQOL-F is a self-report tool that was developed in 2005 to assess the impact of sexual performance of sexually-active females on their quality of life. The questionnaire consists of 18 items and each item is rated on a six-point response (completely agree to completely disagree). The 18 items can be categorized into four categories which are psychosexual feelings, sexual and relationship satisfaction, self-worthlessness, and sexual repression[9].

The primary outcome in the present study was the impact of benign gynecological surgeries on postoperative female sexual quality of life 3 months after the procedure.

STATISTICAL ANALYSIS

Data were analyzed using Statistical Program for Social Science (SPSS) version 20.0. Quantitative data were expressed as mean± standard deviation (SD) and range. Qualitative data were expressed as frequency and percentage. Independent-samples t-test of significance was used when comparing between two means. Paired sample t-test of significance was used when comparing between related samples. A probability value (*p-value*) less than 0.05 was considered statistically significant.

RESULTS

A total of 196 women met the study criteria from October 2015 till November 2016 and completed the pre-operative questionnaire. Seven women were excluded from the study because of unavailable telephones in the second assessment visits, one woman was excluded as she was divorced at time of follow up. Finally, 188 women completed the post-operative questionnaire 3 months after operation. The mean age of the women was 36.12 ± 22.6 years and the mean body mass index was 31.16 ± 12.1kg/m2. The most commonly performed procedure was hysterectomy (25%),followed by classical repair (21%), and myomectomy (7%). In addition, 78.19% of the women were multipara. Almost 46% of the women had previous vaginal delivery; while 29.8% were using a contraceptive method; most commonly intrauterine device and combined oral contraceptives. Ten percent of the women were hypertensive and were on antihypertensive drugs. Table 1 shows the baseline characteristics of the included women.

Preoperatively, the mean SQOL-F total score was 56.04 ± 17.947; which increase significantly to reach 79.33 ± 17.645 at the end of the third month postoperatively ($p < 0.001$). This significant difference was consistent regardless of the type of procedure (Table 2). Regarding the domains of SQOL-F, there were statistically significant increases in the psychosexual feelings (21.16 ±8.2 versus 30.49 ±7.8, $p < 0.001$), sexual and relationship satisfaction (16.71 ± 7.9 versus 21.88 ±4.5, $p < 0.001$), self-worthlessness (9.69 ± 3.5 versus 13.74 ±3.13, $p < 0.001$), and sexual repression (8.468 ±3.7 versus 13.20 ±3.9, $p < 0.001$).

The association analysis showed that there is a statistically significant difference between women 18-40 years and 40-50 years according to the score of SQOL-F; older patients had significantly lower score. Similarly, there is a statistically significant difference between nullipara and parous according to the SQOL-F; parous women had significantly higher score. In contrary, there was no association between SQOL-F and BMI (Table 3).

Table 1: Demographic and Clinical Data of the Included Women

Variable	No. (N =88)
Age (years), Mean ± SD	36.12 ±22.6
BMI (Kg/m2), Mean ± SD	31.16 ±12.1
Type of delivery, No. (%)	
- CS	61 (32.45%)
- VD	86 (45.74%)
Parity, No. (%)	
- Nulliparous	41 (21.81%)
- Parous	147 (78.19%)
Operation, No (%)	
- Hysterectomy	47 (25%)
- Classical repair	39 (21%)
- Myomectomy	14 (7%)
- Surgical ovarian cystectomy	28 (15%)
- Bartholin cystectomy- Clitoral cystectomy	3 (2%)
- Sacrocolpopexy	3 (2%)
- Laparoscopic Ovarian Cystectomy	4 (2%)
- Laparoscopic P.C.O Ablation	6 (3%)
- Laparoscopic Adhesiolysis	23 (12%)
- Laparoscopic treatment of endometriosis	12 (6%)
	9 (5%)

CS: Cesarean section; VD: Vaginal delivery; SD: Standard deviation

Table 2: The changes in SQOL-F domain' scores

Variable, mean ±SD	Preoperative	Postoperative	*P-value*
Total score	56.04 ± 17.947	79.33 ± 17.645	0.001
psychosexual feelings	21.16 ±8.2	30.49 ±7.8	0.001
sexual and relationship satisfaction	16.71 ±7.9	21.88 ±4.5	0.001
self-worthlessness	9.69 ±3.5	13.74 ±3.13	0.001
sexual repression	8.468 ±3.7	13.20 ±3.9	0.001

Table 3: The association between the change in SQOL-F score and other variables

Variable, mean ±SD		Total SQOL-F score	*P-value*
Age (years)			
-	18-40yrs (N=111)	22.79±17.78	0.031
-	40-50yrs (N=77)	16.55±21.56	
BMI			
-	< 30kg/m2	21.46±16.87	0.64
-	30 or more	19.35±21.41	
Parity			
-	Nulliparous	14.24±12.52	0.027
-	Parous	21.90±20.89	

DISCUSSION

Previous reports suggested that the surgical Intervention can negatively impact the sexual response in females, owing to the disruption of nervous innervation, blood supply, or structural integrity of organs participate in sexual response[10]. However, the currently published literature is inconsistent regarding the impact of benign gynecological surgery of female sexual quality of life[11]. In the present study, we found that the benign gynecological surgery had a positive impact on all domains of SQOL-F which includes psychosexual feelings, sexual and relationship satisfaction, self-worthlessness, and sexual repression. These findings were consistent among all types of surgery. Notably, the positive impact of surgery was more prominent in young, parous, women.

Sexual activity is one of the fundamental function of human being which has a profound effect on physical and psychological well-being of individuals. Given the well-established physical and psychological factors of sexual activity, it is widely believed that sexual function significantly affects the quality of life of both gender[12,13]. The SQOL-F questionnaire is a self-report tool that specifically assesse the relationship between female sexual dysfunction and quality of life. The questionnaire focuses on sexual self-esteem, emotional and relationship issues. It consists of 18 items and each item is rated on a six-point response (completely agree to completely disagree)[9]. According to Maasoumi and colleagues[14], the SQOL-F can be categorized into four domains, instead of the three domains described in the original report, when it is administrated to the population of Middle East owing to the sensitivity of the topic among Eastern people. Thus, in the present study, we categorized the questionnaire into four categories: psychosexual feelings, sexual and relationship satisfaction, self-worthlessness, and sexual repression. Our analysis showed that the benign gynecological surgery had a positive impact on psychosexual feelings, sexual and relationship satisfaction, self-worthlessness, and sexual repression. These findings were consistent among all types of surgery. Notably, the positive impact of surgery was more prominent in young, parous, women.

In concordance with our findings, Goetsch[15] reported a positive impact of hysterectomy on sexual satisfaction one year after the procedure. Another report by Thakar and colleagues[16] showed a significant improvement in most aspects of sexual quality of life among women underwent hysterectomy. Such findings were further confirmed by more studies about the impact of hysterectomy on sexual quality of life[17–20]. Other operations, such as oophorectomy, were reported to have minimal or positive impact on the sexual function of the included women[21]. While reports, which assessed women underwent urinary incontinence repair or tubal ligations, exhibited that sexual activity and sexual function significantly improved after the operations[22,23]. To sum up, Pauls[24] conducted a comprehensive review on the impact of the benign gynecological surgery on sexual function. The author concluded that, in most of published studies, sexual function and quality of life improved significantly after the procedures.

Although most of benign gynecological procedures are expected to negatively affect the sexual function and quality of life due to anatomical considerations, our results, in line with previous reports, showed that the

benign gynecological surgery significantly improved the sex-related quality of life in affected women. While the exact mechanisms of such improvement are not fully understood, different theories have been proposed according to the nature of the procedure. For example, improvements in sexual activity after hysterectomy can be attributed to postoperative relief in patients' symptoms, such as pain and irregular bleeding[25]. Additionally, it was reported that urinary incontinence significantly impair sexual arousal, satisfaction, and self-esteem of sexually active women[26]; therefore, successful anti-incontinence surgery can potentially improve sexual function domains in affected women. Uterine fibroid-related pain was reported to negatively affect sexual satisfaction and pain relief by myomectomy significantly improved the postoperative sexual function[27].

However, the currently published literature remains inconclusive regarding the exact impact of benign gynecological procedures on sexual function. For example, Celik *et al.*[28] reported that hysterectomy and BSO negatively affected the sexual function and satisfaction of the included women. Thus, further research that attempts for control of different confounding factors are still needed.

We acknowledge that the present study has a number of limitations. The study was conducted in one center only which may affect the generalizability of our findings. Another limitation is the small sample size which can further affect the generalizability of our findings.

CONCLUSION

In conclusion, most gynecological surgeries found to have positive impact on the female sexual function and quality of life. So that, sexual function should be taken into consideration in planning and preoperative counselling for gynecological surgery also post-operative follow-up. Further long-term studies are still needed to confirm our findings and to study the impact of the change in the sexual function in wider range of population.

CONFLICT OF INTEREST

There are no conflict of interests.

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