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ORIGINAL ARTICLE

Effect of Laparoscopic Hysterectomy on Female Sexual Functions by Comparing their Preoperative and Post-Operative Sexual Performances using Female Sexual Function Index

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ABSTRACT
Background: Hysterectomy is the most commonly performed gynecological procedure. It can affect female sexual functions in a number of ways mainly because of disruption of local nerve and blood supply and intimate anatomical relationship of pelvic organs. We intend to evaluate the effect of total laparoscopic hysterectomy (TLH) on female sexual function by comparing their preoperative and postoperative sexual performances using female sexual function index (FSFI).
Materials and methods: The study was carried out in 50 hysterectomised patients over the duration of one year. Their sexual functions were assessed preoperatively prior to their admission in hospital. Then once hysterectomy is done, their postoperative sexual performances were assessed over the last four weeks period at least four months after their hysterectomy, using FSFI.
Results: Out of 50 patients, 39 patients had undergone TLH with ovarian conservation and 11 had undergone TLH with bilateral salpingoophorectomy (BSO). Out of 50 participants, 27 had scores of less than 26 using FSFI, but after hysterectomy, 14 participants had scores of less than 26. The overall score using FSFI was improved from 24.26±2.2 to 28.11±2.2 (p-value <0.0001).
Conclusion: Women can be positively reassured that hysterectomy performed for benign reasons does not negatively affect sexuality. TLH is less invasive in terms of causing damage to various pelvic nerves and vessels and hence causes less-to-no effect on female sexual functions.
Key words: Hysterectomy, Sexual functions, Dyspareunia, Libido

INTRODUCTION
Hysterectomy is a surgical surgery that removes one's uterus surgically. It is the most prevalent procedure in the field of gynaecology. When it comes to the regulation and control of key bodily activities, the uterus is considered to be one of the most important organs in the human body [1]. Many issues might arise after the hysterectomy, including damage to blood vessels, nerves, and the gastrointestinal system. In addition, whether the illness being treated is either benign or malignant, it might cause sexual dysfunction [2]. An injury to the hypogastric plexus, which provides both sympathetic and parasympathetic innervation to the sub-pelvic region during hysterectomy, can result in sexual dysfunction. Orgasm and lubrication are thought to be influenced by the nerve supply to the top region of the vagina [3]. Hysterectomy is most commonly performed for benign causes such as heavy monthly bleeding, fibroids, adenomyosis, and to improve sexual functioning due to better quality of life [4].

Women who are considering a hysterectomy worry about how they will feel sexually after the procedure. The advantages of a total laparoscopic hysterectomy (TLH) include a faster recovery time, a shorter hospital stay, and less painkiller use [5]. Sexuality is a fundamental part of human existence, and social views can impact it. Emotional discomfort can have a negative impact on one's quality of life if one's sexuality is compromised. Sexuality is a taboo subject for many patients. Only a few patients are willing to discuss their sexuality with a doctor. The topic of sexual health is difficult to discuss because of patient discomfort [6]. A hysterectomy's effect on female sex is still up for debate despite the fact that most research suggest improvement and only a few show deterioration. An individual's pre-surgical connection with their partner, depression, age, and dread of surgery are all factors that can affect this outcome. Dyspareunia and alterations in orgasm were reported in 10% to 20% of women who underwent hysterectomy, according to the literature study. A urinary system injury can occur even though TLH is regarded safe, and this is down to the surgeon's technique and clinical experience, not to mention the patient's age. Long-term studies are needed to accurately assess the psychosocial effects of hysterectomy. However, it is up to the women to make the final decision based on their own health needs [9]. By comparing preoperative and postoperative sexual performances, the study aims to determine the impact of TLH on female sexual functions and identify the many factors that contribute to sexual dysfunction in females following the treatment.

MATERIALS AND METHODS
This study was conducted at the department of gynecology and obstetrics at Patel hospital Karachi. 50 hysterectomies patients were taken for the study in the duration of one year from January 1, 2020, to January 1, 2021, all with TLH performed for benign reasons, and their sexual functions were assessed preoperatively and postoperatively. Patients with benign conditions such fibroids, excessive menstrual bleeding, dysfunctional peritoneal bleeding, recurrent fibroids polyps and adenomyosis were included in the study. They ranged in age from 35 to 50 years old. All of these women were in the premenopausal stage of their

lives. Patients who were older than 50 years of age or younger than 35 years of age, postmenopausal, had cancerous conditions such cervical, ovarian, and endometrial cancer, and were on chemotherapy or radiotherapy were excluded from the study. Prior to surgery, patients were asked if they would be willing to participate in the study and then tested for their sexual function in total secrecy. Post-operatively, a telephone survey was conducted while those with easy access to the hospital were called in the outpatient department to check their sexual function. Patients were interviewed in total secrecy using a questionnaire created with the help of the Female Sexual Function Index (FSFI). Their participation in the study is completely optional, and they have the option to quit at any point if they feel uncomfortable. In order to compute their scores, the FSFI was used. The same surgical team performed TLH on all of the patients, utilising the same procedures. Those who declined to take part in the study or who were unable to communicate because of language issues were excluded from it as well. A comparison of their pre- and post-operative FSFI scores was made, and patients with poor scores were investigated for possible causes.

To assess six different aspects of sexual experience, the FSFI uses a self-administered questionnaire that has been scientifically verified. For scoring, the first and second questions use a one-to-five point scale, whereas the remaining questions use a zero-to-five point scale. Addition and multiplication of individual domain scores (coefficients for questions 1-2:0.6, 3-10 0.3 0.4, 11-19 0.4) is used in order to remove any disparity in influence between different dimensions. A higher overall score suggests a more fulfilling sexual experience. A score of 1.2 to 36 is considered average. The number 26 was proposed as a good cut off point [10,11].

The Statistical Package for the Social Sciences (SPSS) v. 22.0 was used for the statistical analysis (IBM Corporation, Armonk, New York, United States). The mean and standard deviation were used to represent continuous variables. Percentages and frequencies were used to represent categorical variables. The two groups' categorical data was compared using the Chi-square test. A difference between the case and control groups was found when the p-value was less than 0.05, ruling out the null hypothesis.

RESULTS

The mean age of participants was 43±3 years. 70% of participants had a cut-offthe the parity of more than three (03). 80% of participants had a monthly income of more than PKR 50,000. The most common indication for hysterectomy was fibroids (19%), followed by heavy menstrual bleeding (30.0%). Ovaries were removed in 11 (22.0%) participants (table 1).

Total sexual score significantly improved after hysterectomy (28.11 ± 2.2 vs. 24.26 ± 2.2; p-value: < 0.0001). Fewer participants had sexual score less than 26 after hysterectomy (28.0% vs. 54.0%; p-value; 0.0008) (table 2)

There was no significant difference between sexual function score pre-hysterectomy and post-hysterectomy when it was stratified for parity, indication, Several factors, Table and ovaries status (table 3).

Table 1: Characteristics of Participants

Characteristics		Frequency (%)
Parity	3 or less than 3	15 (30.0)
	More than 3	35 (70.0)
Monthly Income (PKR)	25,000 to 50,000	10 (20.0)
	More than 50,000	40 (80.0)
Indication	Fibroid	19 (38.0)
	Heavy menstrual bleeding	15 (30.0)
	Adenomyosis	12 (24.0)
	DUB	4 (8.0)
Ovaries status	Conserved	39 (78.0)
	Removed	11 (22.0)

HMB: Heavy menstrual bleeding, DUB: Dysfunctional uterine bleeding

Table 2: Overall Sexual Function

Sexual Function	Pre-hysterectomy	Post-hysterectomy	p-value
Total Sexual Score (mean ± SD)	24.26 ± 2.2	28.11 ± 2.9	< 0.0001
Participants with Score less than 26 (%)	27 (54.0)	14 (28.0)	0.008

Table 3: Sexual score stratified according to characteristics

Characteristics		Sexual Function less than 26		
		Pre-hysterectomy (n=27)	Post-hysterectomy (n=14)	P value
Parity	3 or less than 3	7 (25.9)	3 (21.4)	0.1
	More than 3	20 (74.1)	11 (78.5)	
Indication	Fibroid	10 (37.0)	3 (21.4)	0.65
	HMB	5 (18.5)	4 (28.5)	
	Adenomyosis	5 (18.5)	4 (28.5)	
	DUB	7 (25.9)	3 (21.4)	
Ovaries status	Conserved	13 (48.1)	7 (50.0)	0.01
	Removed	14 (51.9)	7 (50.0)	

HMB: Heavy menstrual bleeding, DUB: Dysfunctional uterine bleeding

DISCUSSION

The link between hysterectomies and sexual dysfunction is still up for debate due to the fact that numerous studies have produced conflicting results. Despite the fact that some research demonstrated an improvement in sexual functions, others showed a decline. Arousal, desire, orgasm, and the existence of any pain during intercourse all play a role in determining a woman's sexual functions. The sexual response cycle's excitement/arousal phase is where most people associate vaginal lubrication. An uncommon response is that the upper two-thirds of the vagina grow transversely by several centimetres and axially by several centimetres during the late excitation phase. Even after a hysterectomy, this response is still present, but it diminishes with age. There was no discernible difference in the level of female sexual desire after hysterectomy. The improvement of sexual desire following hysterectomy has been documented in a study. The abrupt withdrawal of hormones that influence sexual need and vaginal lubrication causes a decrease in sexual desire when bilateral salpingo-oophorectomy is performed as well. Patients with decreased sexual drive have fewer sexual encounters [14].

Concerns have been raised about the impact of hysterectomy on sexual arousal. According to a few studies, hysterectomy has been shown to alleviate sexual dysfunction and increase sexual arousal and activity in the immediate aftermath of surgery. When Meston and colleagues conducted their investigation, they discovered low levels of vaginal fluid in women who underwent

hysterectomy, which indicated the potential for sexual-mental arousal after the procedure. Patients with fibroids who did not undergo hysterectomy showed no change in arousal between the two groups [16].

Several studies have been conducted to determine the impact of hysterectomy on orgasm. Most patients in research trials showed no difference in orgasm frequency or intensity [17]. It is true that some women may experience sexual dysfunction following hysterectomy, such as diminished enjoyment in sexual activity and trouble reaching orgasm, as reported by Rahimzadeh et al. Compared to patients in the control group, those who underwent a radical hysterectomy six months following the procedure experienced considerable difficulty with orgasm and uncomfortable sexual intercourse [19]. It has been shown that after a hysterectomy, some women report improved orgasm [20]. As a result, radical hysterectomy causes more harm to the pelvic nerves and sexual sensations than a simple hysterectomy.

Dyspareunia has also been researched as a result of hysterectomy. A shorter vagina and decreased vaginal lubrication were found to be responsible for post-intercourse pain in a research by Bayram et al. [21].

This is the first study to date that has looked at the impact of a hysterectomy on female sexual function, to the best of our knowledge. In addition, the study has major flaws. First and foremost, because it was conducted in a single location, the sample pool is somewhat small. In addition, there was no long-term follow-up of individuals.

CONCLUSION

The results of our study showed that total sexual function in all domains improved following hysterectomy. It is critical that patients understand the implications of having a hysterectomy before having the treatment performed, and that they are adequately informed about what to expect once the procedure is completed.

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