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Effect of Anterior/Posterior Colpoperineorrhaphy on Sexual Functions in Heterosexual Couples

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Author`s Contribution

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ABSTRACT

Objectives: To investigate the sexual functions of heterosexual couples following anterior and posterior colpoperineorrhaphy with emphasis on sexual desire, arousal, orgasm, satisfaction, and pain before and after the operation. S

Methodology: A Prospective Cohort Study was conducted at Gynecology Department of Ayub Teaching Hospital Abbottabad, Pakistan between January 2024 and June 2024.

Methods: A prospective cohort study of 100 heterosexual couples was conducted where the females had anterior or posterior compartment defects (>1 cm) and colpoperineorrhaphy was performed after the baseline data. Female sexual functions via the Female Sexual Function Index (FSFI) and male sexual functions via the International Index of Erectile Function 5 (IIEF-5) were assessed pre- and postoperatively. Statistical analyses were performed using paired t-test to determine mean difference in sexual function scores before and six months after surgery.

Results: The mean ages of female patients and their spouses were 45.28±6.556 and 48.90±4.092 years respectively. The (baseline) mean IIEF-5 score for men improved from 17.72±3.939 (preoperatively) to 22.08±2.098 (postoperatively) significantly ($p < 0.001$). There was a statistically significant improvement in all 6 areas of sexual function: desire, arousal, lubrication, orgasm and satisfaction, as well as reduction in pain ($p < 0.001$).

Conclusion: Both women and their male partners benefit from anterior and posterior colpoperineorrhaphy with regard to the improvement in sexual functions. These results support the necessity of attention to sexual health issues in treatment for POP. Future studies delineating long-term outcomes and anterior versus posterior repairs are required to provide better advice for our patients.

Keywords: Pelvic organ prolapse, sexual function, colpoperineorrhaphy, FSFI, IIEF-5

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Introduction

Pelvic organ prolapse (POP) is a frequent disorder among women characterized by the descent of pelvic organs, e.g., bladder, uterus, or rectum down into — or all the way through — the vaginal canal. It is most commonly found in peri- and postmenopausal women, especially if they have experienced vaginal childbirths. Symptoms of POP often adversely affect quality of life, with pelvic pressure and heaviness, symptoms of urinary and bowel dysfunction and dyspareunia being the most prevalent symptoms.[1] One fourth to one half of parous women have been estimated to experience some degree of POP during their lifetime.[2] In case of failure of conservative management or symptomatic prolapse mostly require a surgical repair.[3] The two most frequently performed procedures for treating POP are anterior and posterior colpoperineorrhaphy. Cystocele repair usually involves anterior colpoperineorrhaphy, whereas rectocele repair is more commonly treated with a posterior approach (ie, posterior colpoperineorrhaphy). The purpose of these procedures is to restore normal pelvic anatomy by reinforcing the vaginal walls and repositioning the prolapsed organs. Though effective for relief of mechanical symptoms such as pelvic pressure and incontinence, questions regarding the surgical impact on sexual function have been raised.[4] The problem of sexual dysfunction as a complication among those women is multifaceted. Prolapse can cause mechanical effects, disturb sexual activity with pain, discomfort or decreased vaginal lubrication. On top of that, the genetic predisposition for physical changers can lead to further impairments in sexual satisfaction up to 44% of women therefore suffer psychologically.[5] Although several studies have noted benefits in sexual function after surgical therapy of POP, others reported no changes or worsening especially at the level of vaginal lubrication and orgasmic function.[6] Variability among studies is

thought to be due to surgical approach, patient demographics and prolapse type. The Female Sexual Function Index (FSFI) is one of the most widely employed instruments for appraising sexual function in women. The fields are: desire, arousal, lubrication, orgasm and satisfaction and pain.[7] By contrast, the International Index of Erectile Function-5 (IIEF-5) is a tool to evaluate sexual function in men and targets at the erectile function affected by visceropelvic dysfunction of their partner indirectly.[8] Given the dearth of research on sexual function in both partners following POP surgery in heterosexual couples, this area is particularly deserving for further study. Both preoperative counseling patient and postoperative management also require a thorough understanding of how colpoperineorrhaphy affects sexual function.[9] Given that patients frequently request reassurance about how surgery might affect their intimate relationships, the evaluation and reporting of sexual outcomes need to be comprehensive. Increasing the importance placed on sexual function in addition to symptom relief on colpoperineorrhaphy outcome can improve quality of life and patient satisfaction.[10] We designed this study in order to assess sexual function following anterior and posterior colpoperineorrhaphy among heterosexual couples. We expect that both the anterior and posterior repairs will lead to major improvements in sexual function for women, as assessed by FSFI, and men, as measured with IIEF-5. The findings from this prospective cohort study will further elucidate the dual nature of colpoperineorrhaphy on sexual function as reported by patients.

Methodology

This is a prospective cohort study that will be carried out at Gynecology Department, Ayub Teaching Hospital, Abbottabad Pakistan from January 2024 to June 2024. Participants will be 100 heterosexual couples with female partners having diagnosed anterior or posterior compartment defects in need of colpoperineorrhaphy. Study subjects will be women with no comorbidities that might affect sexual function, such as urinary incontinence.

Sexual Functions (Female Sexual Function Index for female, International Index of Erectile Function-5) will be used to measure severity before surgery. The same will apply after 6 months postop at an interval.

The research instruments used in this study are written questionnaires, including FSFI and IIEF-5 scores for preoperative and 6 months following surgery. The demographic data including age, marital duration and parity would be tabulated as well.

All data will be analyzed using SPSS version 24.0 Change in pre- and postoperative FSFI, IIEF-5 within subject will be assessed using paired t-tests. P less than 0.05 will be defined as a statistically significant finding.

Results

The study included 100 heterosexual couples with a mean age of 45.28 ± 6.556 years of female patients and mean age of 48.90 ± 4.092 years of their spouses. Regarding education, 24% of the women had no formal education, 36% completed primary education, 32% completed high school and only 4% achieved a diploma or university-level education. Similarly, spouses' education levels showed some variation: 6% had no formal education, 34% completed primary school, 42% completed high school, 8% earned a diploma and 10% attained university-level education. The majority of participants had experienced vaginal delivery (62%), while 22% underwent cesarean sections and 16% had vaginal deliveries assisted by forceps or vacuum. The mean number of deliveries per woman was 3.62 ± 1.78. (table I)

Table 1: Demographic characteristics of patients:

Characteristics	Mean±SD N (%)
Age of females	45.28±6.556
Age of spouse	48.90±4.092
Education	
• No formal education	24 (24%)
• Primary	36 (36%)
• High school	32 (32%)
• Diploma	04 (04%)
• University education	04 (04%)
Spouse's Education	
• No formal education	06 (06%)
• Primary	34 (34%)
• High school	42 (42%)
• Diploma	08 (08%)
• University education	10 (10%)
Previous Mode of Delivery	
• Caesarean Section	22(22%)
• Vaginal delivery	62(62%)
• Vaginal delivery using forceps/vacuum	16 (16%)
Number of deliveries	3.62 ± 1.78

Sexual function scores measured by the International Index of Erectile Function-5 (IIEF-5) showed a significant improvement post-surgery. Before surgery, scores ranged from 9 to 26, with a mean of 17.72 ± 3.939. After the intervention, scores improved significantly,

ranging from 18 to 25 with a mean of 22.08 ± 2.098 ($p < 0.001$). (table II)

Table II: Descriptive statistics.				
	Min	Max	Mean±SD	P-value
IIEF-5 Before	9	26	17.72±3.939	0.000
IIEF-5 After	18	25	22.08±2.098	

Significant improvements were observed across all sexual function domains 6 months after colpoperineorrhaphy. Libido, sexual arousal and orgasm scores all improved significantly ($p < 0.001$). Lubrication showed a significant change ($p < 0.001$). Sexual satisfaction also improved significantly ($p < 0.001$), while pain scores decreased ($p < 0.001$). The total sexual function score increased significantly from 24.08 ± 3.09 to 27.41 ± 3.41 ($p < 0.001$), reflecting overall enhanced sexual well-being. (table III)

Table III: Sexual function domains in patients of colpoperineorrhaphy.			
Sexual Function Domains	**Before (n = 100)**	**After 6 Months (n = 100)**	**p-value**
Libido	2.94 ± 0.83	4.75 ± 0.84	p < 0.001
Sexual Arousal	2.86 ± 0.42	4.88 ± 0.64	p < 0.001
Orgasm	3.6 ± 1.17	5.7± 0.78	p < 0.001
Lubrication	5.23 ± 0.97	2.8 ± 0.61	p < 0.001
Sexual satisfaction	4.48 ± 0.72	5.46 ± 0.65	p < 0.001
Pain	4.97 ± 1.27	3.82 ± 0.81	p < 0.001
Total Score of Sexual Function	24.8 ± 3.09	27.41±3.41	p < 0.001

Discussion

This study highlights the significant improvements in sexual function and pelvic health following colpoperineorrhaphy in a cohort of 100 heterosexual couples. The findings are consistent with previous research emphasizing the role of pelvic floor surgery in addressing pelvic organ prolapse and associated sexual dysfunction. The demographic characteristics in this study, including the mean age of 45.28 ± 6.556 years for female patients and 48.90 ± 4.092 years for their spouses, and educational disparities, reflect the typical population undergoing colpoperineorrhaphy in resource-limited settings. Similar studies, such as those conducted by Wihersaari O, *et al*., observed comparable age groups and socioeconomic factors influencing surgical outcomes.[11] Education levels in this cohort were relatively low, with only 4% of women and 10% of spouses attaining university education, which may influence healthcare-seeking behavior and postoperative compliance. Jafarzade A, *et al*. also noted that lower educational attainment is often associated with delayed presentation of pelvic organ prolapse, necessitating surgical intervention.[12]

The observed improvement in International Index of Erectile Function-5 (IIEF-5) scores from a mean of 17.72 ± 3.939 preoperatively to 22.08 ± 2.098 postoperatively ($P < 0.001$) aligns with studies that report significant sexual health benefits following similar interventions. For example, a study by Zawodnik A, *et al*.[13] found that surgical interventions for pelvic organ prolapse resulted in enhanced sexual satisfaction and reduced discomfort in most patients within 6 months of surgery.

The majority of participants (62%) had experienced vaginal delivery, a significant risk factor for pelvic organ prolapse. This finding is in agreement with Schulten SF, *et al*.,[14] who reported a strong association between multiparity and pelvic organ prolapse, particularly in women with a mean parity exceeding three deliveries, as noted in this study (mean 3.62 ± 1.78) reported by Antosh DD, *et al*.[15]

Regarding sexual function, significant improvements in libido, sexual arousal, orgasm, lubrication, and satisfaction following colpoperineorrhaphy are noteworthy. Pain scores also decreased significantly, supporting the findings of Åkervall S, *et al*., who demonstrated that pelvic floor reconstruction improves quality of life and sexual health in women with pelvic organ prolapse.[16] While lubrication showed a notable change, it is important to consider the role of hormonal influences and lubrication aids in postoperative sexual activity, as discussed by Brincat CA &Tyagi V, *et al*.[17,18]

The distribution of pelvic organ prolapses stages, with 66% presenting with mild and 28% with moderate prolapse, reflects a predominantly moderate severity among patients. Comparable studies, such as those by Klein J, *et al*, reported similar distributions, suggesting that surgical intervention is often sought in cases of mild to moderate severity to prevent progression and improve symptoms.[19]

Conclusion

This study demonstrates that colpoperineorrhaphy significantly improves sexual function and pelvic health in women with pelvic organ prolapse. Key findings include substantial enhancements in sexual satisfaction,

arousal, libido, and orgasm, along with a reduction in pain, as measured

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