

Effect of pre-colporrhaphic physiotherapy on the outcomes of women with pelvic organ prolapse

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Abstract

Background and Aim: Pelvic organ prolapse (POP) is a common gynecological problem with numerous complications. This study was conducted to investigate the effects of pre-colporrhaphic physiotherapy on the outcomes of women candidates for colporrhaphy with moderate to severe POP.

Methods: This randomized clinical trial was conducted on women aged 20-59 years with moderate to severe POP. The subjects were randomized to two groups of 35 each: Controls (no intervention) and cases (undergoing 10 sessions of physiotherapy). Three months later, the two groups were examined for outcomes and the outcomes were recorded in a checklist. Data analysis was conducted by SPSS 16.

Results: There was no significant difference in age, height, disease duration, and parity between the two groups ($p>0.05$), but the difference in weight was statistically significant between the two groups ($p<0.05$). The mean score on quality of life after the intervention was 57.59 ± 5.3 in the control group and 66 ± 5.9 in the case group ($p<0.001$). There was no significant difference in the rates of pressure in pelvic organ, urinary incontinence, and bowel movement disorder between the two groups ($p>0.05$), but sexual satisfaction was significantly higher and dyspareunia was significantly lower in the case group than the control group ($p<0.05$).

Conclusion: Pre-colporrhaphic physiotherapy can improve quality of life and sexual function in candidates for colporrhaphy.

Key words: Physiotherapy, Colporrhaphy, Pelvic organ prolapse

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Introduction

Pelvic organ prolapse (POP) in women refers to descended womb, bladder, small intestine, and large intestine as well as post-hysteroscopy vaginal cuff leading to uterine prolapse, vaginal prolapse, or both. In this condition, the patient may feel pain and pressure or prolapse of a vaginal mass (1). As the elderly population is expected to double by the year 2030, pelvic organ prolapse will become higher prevalent (2). Recently, the treatments that can return the patients to normal life after POP surgery have attracted attention (3). The quality of life index is disrupted in the women with POP (4) and therapeutic interventions such as a surgery can help to improve this index (5). However, colporrhaphy may lead to certain anatomical outcomes. Dyspareunia and sexual dysfunction, gastrointestinal diseases, and urinary incontinence are some of common complications after colporrhaphy (6-8). However, these complications may even occur more or less before colporrhaphy (depending on prolapse grade) and be intensified after this surgery (9, 10). However, other therapeutic methods are also recommend for preventing or treating this complication. For example, Kegel exercise and tension-free vaginal kits are considered preventive and protective approaches before POP surgery, but their therapeutic potential remains controversial (11).

Physiotherapy has been frequently studied as a procedure for strengthening the muscles. However, a study showed that physiotherapy before and after the surgery helped to improve the patients' symptoms and quality of life (12). But, another study reported that presurgical physiotherapy did not cause improvement of bladder function and prolapse symptoms (13). This study was conducted to investigate the effects of pre-colporrhaphic physiotherapy on the outcomes of the women with moderate to severe POP candidates for colporrhaphy.

Materials and Methods

This randomized clinical trial was conducted on the women aged 20-59 years with moderate to severe POP referring to Hamedan Fatemiyeh Hospital between 2011 and 2012. The subjects were selected by census sampling and 70 women with inclusion criteria were enrolled in the study within this period. According to a previous study (2), this sample size is adequate to conduct the current study. The inclusion criteria were POP diagnosed with reference to the indications upon which specialists have agreed; lack of response to conservative treatments in the past, grades 2 and 3 accompanied by progression of the symptoms, willingness to undergo colporrhaphy, candidacy for colporrhaphy, and full consent to participate in the study.

Diabetes, obesity, urinary tract infections, genital tract infections, grades 1 and 4 cystocele, uterine prolapse, forceps delivery and vacuum extraction, and history of birth of macrosomic infant, multiple pregnancy, and pelvic fascia and muscle surgery were considered the exclusion criteria. Then the subjects were randomized to

two groups. To conduct randomization, the patients who referred on the even days of the week were assigned to the case group and those referring on the odd days of the week were assigned to the control group. The case (intervention) group underwent physiotherapy before colporrhaphy and the control group underwent the colporrhaphy without any intervention before conducting the surgery. Physiotherapy of the patients in the case group was conducted by a physiotherapist. The physiotherapy intervention consisted of a pelvic floor muscle (PFM) strength training, accompanied by counseling on bladder and bowel. Vaginal examination was conducted to ensure correct PFM contraction, without any change in respiration or recruitment of accessory muscles; intensified attempt to reach maximum voluntary contraction as correct technique was maintained; performing of a series of 6-8 sec contractions, with an interval between each contraction for rest. This approach was done over 10 sessions, 3 times per day performed in a variety of positions, progressing from lying to upright (13, 14). The physiotherapy with similar technique and assistance of a single physiotherapist who was blind to the research purposes and details.

Then, a single gynecologist who was blind to the study purposes and details conducted colporrhaphy on all subjects in the Hamedan Fatemiyeh Hospital with a similar technique. Afterwards, the subjects of both groups received similar recommendations and care. All subjects were followed up for three months, and then they were re-examined and their descriptions were drawn again. The patients' data on complaints of urinary disorders (incontinence and obstructive symptoms), complaints of fecal excretion symptoms (incontinence and constipation), sexual satisfaction, and the presence or absence of dyspareunia were drawn and recorded in a pre-designed checklist.

In addition, the overall score on quality of life was calculated and recorded for both groups using a standard questionnaire on patient quality of life (SF-36). A study to translate and validate this international standard scale demonstrated that its Persian duplicate has adequate validity and reliability for investigating health-related quality of life (15).

To observe research ethics, the subjects provided informed consent to participate in the study, and the study protocol was approved (approval no.: IRCT201201188772N1) in the Iranian Registry of Clinical Trials. Data analysis was conducted in SPSS (V. 16.0, III Chicago Inc.) by analytical statistics t-test, chi-square test, and Fisher's exact test after qualitative data were encoded and descriptive statistics were drawn.

Results

According to the data analysis, there was no significant difference in age, height, and the disease duration between the two groups ($p < 0.05$) (Table 1).

Table 1: Comparison of mean age, weight, and duration of disease between case and control groups

Variable	Group	Mean±SD	P-value
Age (Year)	Control	42.89±6.47	0.310
	Case	41.09±8.16	
Height (Cm)	Control	161.57±4.9	0.326
	Case	162.09±4	
Weight (Kg)	Control	61.37±10.3	0.04
	Case	67.80±7.49	
Duration of illness (year)	Control	3.51±1.7	0.40
	Case	3.92±2.7	

In the case group, 31 out of 35 (88.6%) patients had history of vaginal delivery and the rest had history of caesarian section; and in the control group, 27 out of 35 (77.1%) patients had history of vaginal delivery and the rest had history of caesarian section, without any significant difference between the two groups ($p = 0.11$). Regarding parity, in the case group, 10 (28.6%) subjects had one child, nine (25.7%) had two children, and two (7.45%) had three or more children; and in the control group, 10 (28.6%) subjects had one child, 20 (57.1%) had two children, and five (14.3%) had three or more children, without any statistically significant difference between the two groups ($p = 0.07$).

The mean score on the quality of life after the intervention was 57.59 ± 5.3 in the control group and 66 ± 5.9 in the case group ($p < 0.001$).

There was no significant difference in the rates of pressure in pelvic organ, urinary incontinence, and bowel movement disorder between the two groups ($p > 0.05$), but sexual satisfaction was significantly higher and dyspareunia was significantly lower in the case group than the control group ($p < 0.05$).

Table 2: Comparison of pressure in pelvic organ, urinary incontinence, and bowel movement disorder between the case and control groups

Variables	Group	Low	Partial	Moderate	High	p-value
		Number (%)	Number (%)	Number (%)	Number (%)	
Feel pressure in pelvic organs	Control	2 (5.7)	3 (8.6)	15 (42.9)	15 (42.9)	0.280
	Case	7 (20)	9 (25.7)	13 (37.1)	6 (17.1)	
Urinary Incontinence	Control	3 (8.6)	9 (25.7)	21 (60)	2 (5.7)	0.130
	Case	9 (25.7)	12 (34.3)	13 (37.1)	1 (2.9)	
Impairment of bowel movements	Control	9 (25.7)	8 (22.9)	12 (34.3)	6 (17.1)	0.872
	Case	10 (28.6)	10 (28.6)	9 (25.7)	6 (17.1)	
Sexual satisfaction	Control	12 (34.3)	12 (34.3)	7 (20)	4 (11.4)	0.037
	Case	5 (14.3)	7 (20)	14 (40)	9 (25.7)	
Dyspareunia	Control	3 (8.6)	19 (54.3)	18 (31.4)	2 (5.7)	0.037
	Case	13 (37.1)	13 (37.1)	7 (20)	2 (5.7)	

Discussion

The present study was conducted with the aim of investigating the effect of pre-colporrhaphic physiotherapy on treatment outcomes in the women with POP candidate for colporrhaphy. Results demonstrated that the mean score on quality of life was significantly higher in the case group than the control group. Consistently, Jarvis et al. reported that undergoing physiotherapy before surgery for prolapse and urinary incontinence could contribute to improving quality of life and decreasing these problems in women (12). In two other studies, pelvic floor physical therapy before and after vaginal repair surgery, caused improvement of the quality of life in case group (16, 17). Surgeries conducted for treating POP can improve the quality of life among women patients because they contribute to decreasing the symptoms or improving the disease complications.

Therefore, undergoing physiotherapy and doing exercise, particularly pelvic floor muscle exercises, exerts synergistic effect in improving the quality of life of patients through reduction of physiological and anatomical disorders (5).

In our study, although the number of cases presenting with the symptoms of severe pressure in pelvic organ, urinary incontinence, and bowel movement disorders decreased in the control group, the difference between the two groups was not statistically significant. In contrast, Frawley et al. reported that physiotherapy had no contribution to improving prolapse symptoms and urinary incontinence in women (13). However, other studies have indicated that undergoing physiotherapy and doing pelvic muscle exercises prior and after the surgeries for POP can be effective in decreasing urinary incontinence (12, 18-20), improving bowel function (20, 21), and relieving feeling of pressure and pain (22). To explain this, we can argue that the surgery itself can help to improve the symptoms, which can relatively neutralize the differences between the two groups. Besides that, women's physiological conditions can affect the results.

In the present study, the rate of sexual satisfaction was significantly higher and dyspareunia was significantly lower in the case group than the control group. In a study to compare the effects of physiotherapy accompanied by surgery on the sexual satisfaction in patients with pelvic floor disorders, patients were assigned to two groups of routine treatment and physiotherapy. After an 8-week intervention, consistent with the present study, the symptoms of dyspareunia and orgasm in the case group improved. Therefore, physiotherapy can be considered an effective therapy for pelvic disorders (23). Notably, colporrhaphy itself is an effective treatment for improving sexual desire, orgasm, and sexual satisfaction for the women with POP (24). Hagen et al's study on pelvic floor muscle exercises in the women with pelvic fascia prolapse, showed that doing these exercises for 6 months could improve patients' sexual problems (22). A study reported that the patients who underwent pelvic muscle rehabilitation, exhibited improvement in certain indices such as orgasm and sexual desire, but no change in arousal (25).

Conclusion

This study indicated that presurgical physiotherapy could be used as an appropriate approach to improve the quality of life and sexual function for patients with POP who are candidates for colporrhaphy. It is recommended to investigate individual and specific physiotherapy and match the two groups of the study by physical conditions in future studies as well as to conduct longitudinal studies.

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