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RESEARCH ARTICLE
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COMPARATIVE OUTCOME BETWEEN VAGINAL AND ABDOMINAL APPROACHES IN PELVIC ORGAN PROLAPSE SURGERY

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ABSTRACT

Introduction: The purpose of this paper is to explain the concept of POP, which is a prevalent condition in women whereby the organs in the female pelvic region shift due to non-supportive pelvic floor muscles. Vaginal and abdominal surgical approaches of POP have been identified to differ in the level of effectiveness, risks and effects on sexual satisfaction. This project aims to classify the case as to patients' surgery results versus expected surgery results to aid in decision-making.

Objectives: The purpose and aim of this trial were to evaluate and compare the degree of surgical success, complications, sexual quality of life and recurrence rate between vaginal and Abdominal approaches of POP surgery.

Materials and Methods: A cross-sectional observational study was proposed at Jinnah Postgraduate Medical Centre, Karachi, Pakistan, for the period of January to June 2024. The subjects included were 100 patients where 50 of them were those that underwent vaginal surgery, and the other 50 were those that underwent abdominal surgery. They also analysed the operative time and postoperative hospital stay, postoperative complications, and sexual function of the patients.

Results: Vaginal surgery gives shorter operative time and quicker ambulation, whereas abdominal surgery has less rate of recurrence and a better survival curve.

Conclusion: The two procedures each have some advantages and hence should be recommended depending on the degree of prolapse and preferences of the patient.

Keywords: Pelvic organ prolapse, vaginal surgery, abdominal surgery, recurrence, sexual function, surgical outcomes

INTRODUCTION

POP in women is defined as the partial descent of the female pelvic organs through the vaginal canal as a result of underlying disorders of the pelvic floor muscles, which is common among pregnant and

elderly women. This condition is caused by the relaxation and descent of muscular and ligamentous supports of the pelvic organs through the vaginal canal or out of it. It leads to issues such as urinary incontinence, vaginal protrusion, pressure in the area, and sexual disorder. Treatment of POP primarily involves surgical intervention with two recognized surgical techniques, namely vaginal surgery and abdominal surgery. These approaches are critical when it comes to assessing patients' outcomes, duration of stay and patients' satisfaction (1). The vaginal surgery of POP refers to the operation that focuses on the vaginal walls and their supporting mechanisms reached through the canal. This approach, in most cases, requires smaller incisions and less risk to the body's beauty and abused skin; it also has a shorter post-surgical movement period. The second is the Abdominal approach, where an incision is made at the abdomen, and this type of surgery is used when prolapse is severe, there is damage to tissues or any complication. This can be done with minimally invasive laparoscopic surgery or by open surgery, which should afford a better-seen-and-reached view and access to the structures of the pelvis (2, 3).

A number of studies, including systematic reviews and meta-analyses, have been conducted on these two techniques concerning efficacy, complication and rehabilitation time. Research indicates that each is effective and has its benefits in addressing different types of prolapses and in various contexts concerning the patient's overall medical state. For instance, vaginal repairs are usually quicker and evoke less pain and complications in the abdomen than abdominal repairs, but they lack adequate support for rectocele or other severe prolapses or those that would require hysterectomy simultaneously (1, 5). Abdominal procedures also are indicated when more extensive pelvic floor reconstruction is required, especially in cases of apical prolapse (3, 4). Another consideration in POP surgery is the sexual consequences since sexual function becomes a major issue in any woman who undergoes surgery for prolapse. The literature has focused on the differences in sexual function in studies assessing the resection of the vagina and the approximation of abdominal surgical procedures. Both methods are said to have the goal of density of surgical intervention. Nevertheless, the vaginal approach has been found to least interfere with sexual function though, depending on the type of surgery conducted or the physical status of the patient before the surgery (2, 10). Abdominal approaches, particularly the hysterectomy or sacrocolpopexy, do pose more risk to change in the sexual sensation or function compared with the less invasive approach due to the anatomical changes within the pelvis (7, 12).

Two surgical techniques used in this study are characterized by certain risks in terms of safety. Vaginal surgeries, which include vaginal hysterectomy with sacrospinous ligament fixation, are associated with low risk of surgical site infections and less hospital stay duration bearing in mind the complications like vaginal scar formation, prolapse recurrence and dyspareunia (5, 11). Laparoscopic sacrocolpopexy is an effective option that provides better long-term anatomical results and reduces the risk of prolapse recurrence as compared to vaginal surgeries but has a longer recovery time, higher cost and may lead to complications like bowel injury or mesh erosion (6,14). The choice of a vaginal or abdominal approach for the surgery depends on several factors, specifically, the degree of prolapse, the general health of the patient, the need to combine the surgery with a hysterectomy and the patient's preference for the length of the recovery time and possible complications (9, 15). Outcomes are also dependent on the individual surgeon and available tools, and several studies have shown that using minimally invasive techniques like laparoscopic or robotic assistance of both vaginal and abdominal operations may bring some advantage (6, 13).

This research will help in providing an understanding of surgical techniques depending on the approach used, whether vaginal or abdominal, in repairing the POP, which can assist in enhancing the quality of the patients' lives. Because the aforementioned aspects allow for the comparison of effectiveness, possible complications, the period required for recovery, and the condition of sexual function, healthcare providers can assign individual treatment regimens according to each patient's specific needs. It can also be used to guide clinical practice and policies in the management of POP in the future and improve the lives of those women with this condition. Furthermore, awareness of the comparative results of vaginal and abdominal procedures in the management of POP is crucial to getting the best results. Both methods seem to have advantages and disadvantagess, and the decision

can be based only on the patient's characteristics. Surgical innovation, along with subsequent developments, will continue to progress in these methods, make the procedures safer, deliver better yields to aid the sufferer and shorten the healing time.

Objective: The aim of this study is to look at vaginal and abdominal approaches in the treatment of POP in terms of success, risks, time to convalesce and sexual functioning.

MATERIALS AND METHODS

Study Design: This study is a prospective comparative study with the aim of comparing the outcomes of vaginal and abdominal management of POP. The study aims to gather information from the patients who are planning for surgery for POP at a tertiary care hospital in Pakistan with regard to the clinical outcome, complications, and the post-operative recovery period.

Study setting: This study was conducted at Jinnah Postgraduate Medical Centre, Karachi, Pakistan, which is one of the leading and largest hospitals in Pakistan, treating POP patients and women's health with a plethora of gynecology specialists.

Duration of the study: The study was conducted for six months, from January 2024 to June 2024, in order to evaluate post-interventional outcomes, both short-term and medium-term.

Inclusion Criteria:

The participants of the study were female patients aged 30-75 years old with symptomatic POP of stage II or above requiring surgery. However, all the patients agreed to participate in the study and were not diagnosed with any form of pelvic cancer or any other surgical contraindication. Consequently, only those women who had either the vaginal or the abdominal approaches for prolapse surgery were enrolled.

Exclusion Criteria

Contraindicated patients with any systemic diseases such as uncontrolled diabetes, cardiovascular diseases, or active infections to surgery. Patients with a history of previous pelvic surgery, those who had more than one surgery in the scheduled sessions, or those who refused to participate in the study were also omitted. Women with neurological disorders which may cause impairment of PF muscles were also excluded.

Methods

A total of 100 patients suffering from POP were recruited in this study, and among them, 50 patients underwent VSP and 50 patients underwent ASP. The vaginal group consisted of the patients who underwent vaginal hysterectomy with sacrospinous ligament fixation, while the abdominal group was subjected to laparoscopic sacrocolpopesy or abdominal hysterectomy with sacrocolpopesy. Pre-operatively, all the patients' physical conditions were evaluated through physical examination, gynecological examination, urodynamic study, and questionnaire on sexual activities. Complications such as infection, recurrence of prolapse and alteration in sexual function were followed up in the surgical patients. Monitoring of the patients was done at the end of the first month, 3rd month, and 6th month after the surgery. The parameters considered in assessing the outcomes were operating time, hospital length of stay, postoperative morbidity and mortality, patient satisfaction and sexual function. Quantitative data of the study were analyzed using SPSS statistic software, where the findings of the two groups were compared, and a p-value of < 0.05 was used as the level of significance. It offered the assessment of both types of surgeries, thus making it easier to compare short-term and medium-term results.

RESULTS

There were 100 patients with symptomatic POP in this study, with 50 patients in the vaginal surgery group and 50 patients in the abdominal surgery group. The average age of the participant patients in

the vaginal group was 52.3, and in the abdominal group was 55.7. Pre-operative characteristics of both the groups were almost similar in terms of the degree of prolapse and co-morbidities to maintain comparability of groups.

Surgical Outcomes

The total operating time, as with other variables measured, also indicated a considerably lower total time in the vaginal surgery group compared with the abdominal surgery group. The group that had their operation done through the vagina was found to take an average of 78 minutes, while the one is done through the abdomen for an average of 120 minutes. Furthermore, it was found that the vaginal surgery patients stayed in the hospital for a shorter period, with a mean of 2.5 days, while the abdominal surgery patients stayed in the hospital for a mean of 5 days.

Complications

The post-operative events were noted and evaluated accordingly. The vaginal group was associated with fewer major complications, with three patients who had 6 % reoperation because of prolapse recurrence. However, the abdominal group recorded a higher complication rate, with 8 (16%) of the patients having complications that include urinary retention, bowel injury or mesh complications.

Table 1: Surgical Outcomes Comparison

Parameter	Vaginal Surgery (n=50)	Abdominal Surgery (n=50)	p-value
Mean Age (years)	52.3	55.7	0.08
Mean Operative Time (mins)	78	120	<0.001
Mean Hospital Stay (days)	2.5	5	<0.001

Sexual Function

Patients' sexual activity was evaluated before surgery and 6 months after the surgery by using a validated sexual health questionnaire. There was no deterioration of the sexual function among the vaginal group, and only 8% of the group either had a poor sexual function or a decline after the operation. However, decreased satisfaction with sexual intercourse was evident in the abdominal group, with 30 % of the patients reporting pain during intercourse or low sexual desire.

Table 2: Sexual Function Postoperative Comparison

Parameter	Vaginal Surgery (n=50)	Abdominal Surgery (n=50)	p-value
Sexual Satisfaction Preoperative (%)	92	94	0.15
Sexual Satisfaction Postoperative (%)	92	64	<0.001
Decreased Sexual Function (%)	8	30	0.02

Recurrence of Prolapse

The study also revealed that the rate of pelvic organ prolapse was high in the vaginal surgery group, and 5 of the women had pelvic organ prolapse recurrence after 6 months. The abdominal surgery group unusually had a relatively low recidivism of 2 out of 50, which makes it appear that for some patients, abdominal surgery might be more effective.

Table 3: Prolapse Recurrence Rates

Parameter	Vaginal Surgery (n=50)	Abdominal Surgery (n=50)	p-value
Prolapse Recurrence (%)	10%	4%	0.15

Furthermore, the overall analysis used in this paper proves the effectiveness of both vaginal and abdominal routes of POP surgery though each has its advantages. This operation also requires less

time, takes less time to recover from compared to the other approaches that are used, and has a low level of risks. However, the abdominal approach, while longer surgery and recovery, has the lowest risk of recurrence of the prolapse as well as the best long-term outcome.

DISCUSSION

POP is a common disorder that primarily affects elderly women and those who have given birth and which interferes with quality of life. Vaginal and abdominal procedures are the main forms of surgery used in handling POP, and their results have been compared in several aspects, such as efficacy, risks, rehabilitation duration and sexual health. This paper aimed to compare both these approaches concerning surgical results, side effects such as impotency and infertility, and recurrence. This study also establishes essential differences between the vaginal and abdominal surgical routes. One major study revealed the fact that the mean operative time and hospital stay were considerably less among the women in the vaginal surgery group. The vaginal group had an average of 78 minutes, while the time taken for the abdominal surgeries was 120 minutes, a thing which is similar to other research that has associated abdominal surgery as being more invasive than vaginal surgery (1, 2). Reduced length of hospital stay is yet another proven benefit of vaginal operations because they are least invasive and are characterized by less pain and less possibility of complications (3, 5). This result concurs with other works which have revealed that patients who endure vaginal repairs recover faster and can return to regular routines much earlier than those who have undergone abdominal surgery (6, 7).

However, while the vaginal approach has less postoperative inconvenience and few early complications, it also has its drawbacks. The vaginal approach is relatively contraindicated in cases with more severe prolapse, especially those with apical compartment prolapse or when there is associated uterine prolapse that requires a hysterectomy (8). At 6-month follow-up, nine of the 90 patients who underwent vaginal surgery had a prolapse recurrence rate that is comparable with previous similar studies, which have shown that while laparoscopic vaginal repairs are effective in treating prolapse, they are more likely to recur compared to abdominal procedures (9, 12). Another advantage of abdominal surgery and, in particular, laparoscopic sacrocolpopexy is the lower recurrence rate, as indicated in our study, where four per cent of patients had a recurrence. This reduced recurrence rate in ABSS has been attributed to enhancement of support vaginal apex as well as better tissue fixation (10, 14).

The sexual function after surgery also significantly differed between the two approaches. It was found that the vaginal surgery group did not experience a shift in levels of sexual satisfaction regarding sexual health, where 91.5% of the patients indicated no problems or enhancements in sexual satisfaction. This coincides with findings showing that earlier surgeries, especially the ones that do not compromise on vaginal architecture, have minimal effects on the sexual functioning of the patient (11, 13). However, concerning sexual satisfaction, the patients who underwent abdominal surgery showed a decrease in this aspect, with 30% having less satisfaction, indicated by pain during intercourse and reduced libido. This is in concordance with previous studies that have shown that SC and stomach disorders, especially those operations that involve handles and other tissue toucher-hysterectomy, are likely to result in a change in sexual function (7, 15). The possible reasons for these changes may include changes in the vaginal length, nerve injury or a decrease in vaginal sensitivity as a result of the more extensive operation through the abdominal incision.

This argument is followed by the comparison of complications after the two surgical approaches as evidence to show that, though vaginal surgeries have significant complications equivalent to those of open surgeries, abdominal surgeries have long-term benefits but entail specific complications. In the abdominal group, 16% of the patients experienced complications such as urinary retention, bowel injury and complications related to the mesh used in the surgeries. These complications, as have been evidenced in the literature, are dangerous and point to the fact that abdominal approaches, especially with the use of mesh, should be avoided where possible (6, 12). Mesh-related complications, including erosion or infection, have been reported to be of concern in prolapse surgery, especially

when an abdominal approach such as sacrocolpopexy is used (5, 13). The reoperation related to the prolapse recurrence was seen to be lower in the vaginal group, at 6 per cent among the patients.

The issue of recurrence is considered one of the main challenges in the context of POP surgery. Looking at the results of the study, it was evident that the abdominal method had a small incidence of recurrence which was only 4%, while the vaginal method had 10%. This is in concordance with other studies that point to better anatomical results achieved by abdominal sacrocolpopexy, particularly when the surgery is done endoscopically (14, 15). The advantages of performing an abdominal approach principally include the enhanced support given to the vaginal apex and the uterus, which is highly desirable in the case of extensive or apical prolapse. However, hysterectomy, though helpful in managing anterior and posterior wall prolapses, yields poor support to the apex, thus increasing the chances of recurrence (3, 9). However, both strategies are helpful in the management of POP, depending on the context or specific patient. The decision of whether to perform vaginal or abdominal surgery should be made depending on the prolapse severity and type, the patient's age and other associated diseases, and the patient's preferences concerning postoperative convalescence and sexual activity. For instance, the vaginal kind may be used if the prolapse is not severe and the abdomen does not need to be touched or if the patient simply does not like intra-abdominal surgery for some reason (8, 14).

However, it is crucial to note some limitations of this study, especially regarding the influence of the approaches used to compare the results of vaginal and abdominal deliveries. First, the study was conducted at one hospital, and the results cannot be generalized to other settings or patients. Second, a follow-up duration of 6 months may also not be sufficient enough to detect the reoccurrence patterns of surgeries and their impact on sexual health. Further studies with follow-up periods of several years and more participants are necessary to support the results and compare the long-term benefits and risks of every approach. Lastly, they have considered the pros and cons of Vaginal and Abdominal surgery on the aspect of the condition of the Prolapse of pelvic organs. The advantages of vaginal surgery include low postoperative morbidities and shorter days in the hospital, but they may experience high probabilities of recurrence compared with deeper cases due to a low success rate. Cesarean section happens to be more efficient insofar as the final outcomes are concerned, and the relapse rate might be higher, yet it has its disadvantages, which entail a long recovery time as well as complications connected with sexual issues. Depending on the degree of the Prolapse, the treatment plan should usually be individualized and take into consideration the patient, preference, the demerits of the surgical procedures that are available and the severity of the Prolapse.

CONCLUSION

Therefore, the surgical management of POP involves using different techniques, each with unique strengths and weaknesses. Vaginal surgery takes less time compared to the other modes of performing surgery; the patient would not take long to be discharged. Therefore, it has fewer postoperative complications and is suitable with a simple drooping uterus or when early discharge is desired. They need to be done repeatedly so that it is less effective for Grades 2-3 pelvic organ prolapse. Laparoscopic sacrocolpopexy is superior to abdominal access because there is a lower tendency of relapse, and it is advisable for more serious processes. It has a more extended recovery period and also has some side effects, including sexual ones. Therefore, the choice of these treatments should be determined by the degree of prolapse, general health status of the patient, preferred timeframe for the treatment plan, and potential recovery risks. To establish long-term outcomes of these surgical procedures, further work with longer follow-ups should be performed.

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