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Original Research

Clinical Outcomes of Abdominal Mesh Sacrocolpopexy

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ABSTRACT

Background: Pelvic organ prolapse is a prevalent condition among women who have given birth, significantly impacting their quality of life. These patients require a reliable and effective surgical procedure that achieves both anatomical restoration and improvement in overall well-being. Abdominal sacrocolpopexy and sacrohysteropexy are emerging as promising options for repairing apical prolapse. The purpose of this study was to evaluate the clinical outcomes of abdominal sacrocolpopexy using synthetic mesh.

Materials and Methods: This prospective observational study was conducted in a total of 33 women, who underwent abdominal sacrocolpopexy. All patients were followed for 12 months postoperatively.

Results: Among the participants, 60% presented with stage 3 apical prolapse preoperatively. The mean age of patients undergoing sacrocolpopexy was 54.7 years.Perioperative complications included bladder injury, paralytic ileus, wound dehiscence, and urinary tract infection. Postoperatively, all patients achieved complete anatomical support of the vault and reported total symptomatic relief. During follow-up, dyspareunia and lower back pain were reported in two patients each, while no cases of mesh erosion or recurrence of prolapse were observed.

Conclusion: Abdominal sacrocolpopexy utilizing synthetic mesh is an effective and reliable surgical approache for the repair of vault prolapse, with favorable safety profiles and durability.

Key Words: Vault Prolapse; Sacrocolpopexy; Female, Back Pain

INTRODUCTION

Pelvic organ prolapse (POP) is a prevalent condition among women who have had children. Uterine prolapse is characterized by the descent of the uterus from its normal anatomical position, often accompanied by prolapse of the vaginal wall. In cases following hysterectomy, the vaginal vault may descend from its anatomical location into or beyond the vaginal introitus, a condition known as vault prolapse. When uterine prolapse occurs without vaginal wall involvement, particularly in nulliparous women, it is referred to as nulliparous prolapse [1].

As women's life expectancy increases, the incidence of POP also rises, significantly affecting their quality of life [2]. Vault prolapse following abdominal hysterectomy occurs in 0.2-1% of cases, while following vaginal hysterectomy, the incidence is 11.6% [3]. The primary cause of vault prolapse is the failure to identify and repair an enterocele during hysterectomy. Management of vault prolapse is influenced by factors such as age, parity, comorbid conditions, anesthesia duration, the desire to maintain sexual function, and the surgeon's expertise [3]. Conservative treatments, such as the use of vaginal ring pessaries and pelvic floor exercises, have limited effectiveness in addressing vault prolapse. Numerous surgical approaches, both vaginal and abdominal, have been proposed, with abdominal sacrocolpopexy showing superior anatomical outcomes [4].

This technique is recognized as both reliable and durable, with success rates ranging from 78-100% [5, 6]. The procedure involves fixing the vaginal apex to

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the anterior ligament of the sacrum using a synthetic mesh, which restores the vaginal apex to a near-normal anatomical position [4]. While several retrospective studies have assessed the anatomical and surgical outcomes of sacrocolpopexy and sacrohysteropexy [4-6], the functional outcomes, such as vaginal symptoms and sexual health, have often been overlooked. The present study focuses on short-term (12 months) anatomical and subjective outcomes, including vaginal symptoms, sexual well-being, and the impact on quality of life.The study aimed to evaluate the clinical outcomes of abdominal sacrocolpopexy with synthetic mesh for the repair of vault prolapse.

MATERIAL AND METHODS

This prospective observational study evaluated 33 women with vault prolapse who underwent abdominal sacrocolpopexy (ASCP), with a 12-month follow-up. Inclusion criteria included women presenting with symptomatic vault or uterine prolapse who consented to follow-up, while patients unfit for surgery or lost to follow-up were excluded.

Clinical and gynecological assessments, including the POP-Q system, were conducted, and vaginal symptoms, sexual well-being, and quality of life were evaluated pre- and postoperatively using the International Consultation on Incontinence Questionnaire for Vaginal Symptoms (ICIQ-VS). After informed consent, the ASCP procedure was performed under regional anesthesia, following standard preoperative protocols.

The surgical approach involved creating a midline vertical infra-umbilical incision, dissecting the vaginal vault, and preparing a Y-shaped polypropylene mesh to support the vault. The mesh was secured to the anterior longitudinal ligament at the S1–S2 level, and the peritoneum was closed to cover the mesh.

Intraoperative parameters and postoperative complications were recorded. Patients received guidance to avoid strenuous activities, heavy lifting, and sexual activity for four weeks. Stitches were removed by postoperative days 8–10, with POP reassessment before discharge.

Follow-up assessments at 1, 3, 6, and 12 months evaluated anatomical correction through clinical examination and patient satisfaction using the ICIQ-VS. Success was defined as achieving stage 0 or 1 apical prolapse. The ICIQ-VS assessed vaginal symptoms (scores: 0–53), sexual matters (scores: 0–58), and quality of life impact (scores: 0–10), addressing symptoms such as soreness, laxity, dryness, and their effects on daily life and relationships.

RESULTS

Among the participants, 60% presented with stage 3 apical prolapse preoperatively. The mean age of patients undergoing sacrocolpopexy was 54.7 years.The perioperative complications observed in patients undergoing abdominal mesh sacrocolpopexy are summarized in Table 1. Intraoperative complications were minimal, with cystostomy occurring in 6.06% of patients (n=2), while no cases of hemorrhage or bowel injury were recorded. Postoperative complications included paralytic ileus and urinary tract infections (UTIs), each affecting 6.06% of patients (n=2). Wound dehiscence occurred in one patient (3.03%). Fever and the need for blood transfusion were not reported among the study cohort.

Table 1: Perioperative complications of Sacrocolpopexy (n=33)

Intra-Operative	**n**	**%**
Cystostomy	2	6.06
Hemorrhage	0	0.00
Bowel injury	0	0.00
Post-Operative	**n**	**%**
Paralytic ileus	2	6.06
UTI	2	6.06
Wound dehiscence	1	3.03
Fever	0	0.00
Needed blood transfusion	0	0.00

The ICIQ-VS scores demonstrated significant improvements postoperatively (Table 2). The mean vaginal symptoms (VS) score decreased from 41.13 preoperatively to 2.95 postoperatively, indicating a statistically significant improvement ($p<0.01$). Similarly, the sexual matters (SM) score was reduced from a mean of 21.3 preoperatively to 1.28 postoperatively ($p<0.01$). The quality of life (QoL) score also showed a marked decrease, from 7.52 to 0.33 ($p<0.01$), reflecting enhanced patient-reported outcomes following the procedure.

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Table 2: Outcome as measured by ICIQ-VS

Parameter	Mean Score (Pre-Operative)	Mean Score (Post-Operative)	P-Value
VS Score (max=53)	41.13	2.95	<0.01
SM Score (max=58)	21.3	1.28	<0.01
QoL Score (max=10)	7.52	0.33	<0.01

Follow-up data at 6 and 12 months postoperatively revealed no cases of recurrent prolapse or mesh erosion (Table 3). Pelvic Organ Prolapse Quantification (POP-Q) staging remained stable at 0 or 1 in all patients during the follow-up period. Dyspareunia and backache were reported by 6.06% (n=2) of patients at the 6-month follow-up, while these symptoms were not documented at 12 months. There were no cases of prolapse recurrence or other complications requiring surgical intervention during the follow-up period.

Table 3: Complications observed in follow up period

Complication	6 Months	12 Months
POP-Q staging	0/1	0/1
Dyspareunia	2 (6.06%)	-
Backache	2 (6.06%)	-
Prolapse Recurrence	-	-
Mesh erosion	-	-

DISCUSSION

The management of apical prolapse is influenced by factors such as age, parity, comorbid conditions, duration of anesthesia, the desire to preserve reproductive and sexual function, and the surgeon's expertise [3]. Both abdominal sacrocolpopexy (ASCP) and vaginal sacrospinouscolpopexy are commonly performed for vaginal vault prolapse [7]. Recent advances have introduced novel techniques, including laparoscopic and robotic sacrocolpopexy. While laparoscopic sacrocolpopexy can be as effective as ASCP in selected cases, challenges such as the need for specialized technical skills and high costs remain significant drawbacks [8].

In the current study, a 100% success rate was observed from both objective and subjective perspectives, with no recurrence of pelvic organ prolapse (POP) during the postoperative and follow-up periods. Additionally, there was a noticeable improvement in the overall quality of life for the women. A comparable success rate was reported by Monika Anant et al. in their prospective observational study involving 41 patients, where both ASCP and ASHP procedures achieved a 100% success rate [9]. Similar outcomes were found in studies by Shika et al., Aparna et al., and SapnaPuri et al., all of whom evaluated the effectiveness of ASCP/ASHP for apical prolapse [10–12].

The ASCP procedures in the present study were associated with minimal complications. SapnaPuri et al. also reported no major intraoperative or postoperative complications, though one patient experienced hemorrhage, another had paralytic ileus, and a third had dyspareunia, which resolved within a few months during long-term follow-up [12]. These findings were consistent with those observed by Monika Anant et al. and Dhama et al. in their studies [10, 13]. Nygaard et al. concluded that sacrocolpopexy is a reliable and effective procedure for resolving vaginal vault prolapse, emphasizing the need for counseling patients regarding the low, but present, risk of recurrence, stress incontinence, and other complications [6].

In this study, all patients experienced significant improvements in vaginal symptoms and sexual health. Furthermore, their quality of life, as assessed by the ICIQ-VS score, showed a notable positive impact, similar to findings by Kumari R et al. [1].

CONCLUSION

Abdominal sacrocolpopexy for vault prolapse demonstrated a consistently high success rate, accompanied by minimal perioperative complications. Furthermore, this surgical technique plays a crucial role in enhancing patient satisfaction by alleviating vaginal symptoms and improving overall quality of life. Extended follow-up studies with a larger sample size are necessary to comprehensively evaluate these outcomes.

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