



CLINICAL STUDY OF OUTCOME OF VAGINAL HYSTERECTOMY IN PELVIC ORGAN PROLAPSE

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ABSTRACT

Pelvic organ prolapse is a common gynecological condition affecting multiparous and postmenopausal women and significantly impairs quality of life. Vaginal hysterectomy with pelvic floor repair remains one of the preferred surgical procedures for symptomatic uterovaginal prolapse because of its favorable operative and postoperative outcomes. The present study was conducted to evaluate the clinical profile, operative findings, postoperative complications, and overall outcome of vaginal hysterectomy in women with pelvic organ prolapse at a tertiary care hospital. This prospective observational study was conducted in the Department of Obstetrics and Gynecology at Shri Bhausaheb Hire Government Medical College and affiliated tertiary care hospital, Dhule, Maharashtra, India, from January 2025 to December 2025. The majority of women belonged to the 51–60 years age group (42.98%) and were multiparous (69.30%). Postmenopausal women constituted 71.05% cases. POP-Q Stage III prolapse was the most common presentation (50.88%). Associated cystocele and rectocele were observed in 75.44% and 45.61% women respectively. The mean operative duration was 74.6 ± 12.4 minutes, while mean intraoperative blood loss was 168.3 ± 46.2 mL. Blood transfusion was required in 10.53% patients. Hemorrhage (6.14%) and bladder injury (1.75%) were the common intraoperative complications. Postoperative fever occurred in 7.89% cases, while urinary retention was observed in 4.39% women. Mean hospital stay was 5.8 ± 1.4 days. Relief from prolapse symptoms was achieved in 96.49% patients, and overall patient satisfaction was reported in 91.23% women. Vaginal hysterectomy with pelvic floor repair is a safe and effective surgical procedure for pelvic organ prolapse with satisfactory postoperative recovery and low perioperative morbidity when performed with appropriate case selection and meticulous surgical technique.

KEYWORDS : Pelvic Organ Prolapse; Vaginal Hysterectomy; Pelvic Floor Repair; Pop-q; Uterovaginal Prolapse; Surgical Outcome

INTRODUCTION

Pelvic organ prolapse (POP) is a common gynecological disorder affecting women worldwide and is associated with significant impairment in quality of life, particularly among multiparous and postmenopausal women. Increasing age, repeated vaginal childbirth, menopause, chronic rise in intra-abdominal pressure, and weakening of pelvic floor support structures are recognized contributory factors for prolapse development.^{1,2} Pelvic organ prolapse commonly presents with symptoms such as mass per vaginum, urinary complaints, bowel dysfunction, sexual dysfunction, and discomfort affecting day-to-day activities.^{2,3}

Vaginal hysterectomy with pelvic floor repair remains one of the most widely performed and preferred surgical procedures for symptomatic uterovaginal prolapse because of its effectiveness, shorter operative time, lower morbidity, reduced hospital stay, and avoidance of abdominal incision.^{3,4,5} Compared with abdominal procedures, the vaginal route is associated with faster postoperative recovery, lower postoperative pain, reduced cost, and early mobilization.⁶

Recent evidence-based surgical pathways continue to support vaginal reconstructive surgery as an effective option for appropriately selected women with pelvic organ prolapse.⁷ However, perioperative concerns such as hemorrhage, bladder injury, urinary retention, vault prolapse, wound infection, and recurrence remain clinically important and require careful surgical planning and postoperative follow-up.^{8,9} Present study was undertaken to evaluate the clinical profile, intraoperative findings, postoperative complications, and overall surgical outcome of vaginal hysterectomy performed for pelvic organ prolapse at a tertiary care teaching hospital in Maharashtra.

MATERIAL AND METHODS

The present prospective observational study was conducted in the Department of Obstetrics and Gynecology at Shri Bhausaheb Hire Government Medical College and affiliated tertiary care teaching hospital, Dhule, Maharashtra, India, from January 2025 to December 2025. Institutional Ethics Committee approval was obtained before commencement of

the study. Written informed consent was obtained from all participating women prior to surgery.

Inclusion Criteria

- Women diagnosed with symptomatic pelvic organ prolapse undergoing vaginal hysterectomy with pelvic floor repair at the study institution during the study period
- Patients willing to participate and provide written informed consent

Exclusion Criteria

- Patients requiring abdominal or laparoscopic hysterectomy
- Suspected or confirmed gynecological malignancy
- Acute pelvic inflammatory disease or active genital tract infection
- Severe medical comorbidities rendering the patient unfit for surgery
- Recurrent vault prolapse cases previously operated elsewhere
- Patients with incomplete clinical records or inadequate follow-up data
- Women unwilling to participate in the study

A detailed preoperative evaluation was performed in all patients including complete history, general physical examination, abdominal examination, and pelvic examination. Relevant demographic details, parity, menopausal status, duration of symptoms, urinary and bowel complaints, and associated medical comorbidities were documented. Routine laboratory investigations including complete blood count, urine examination, blood sugar, renal function tests, electrocardiography, and ultrasonography were performed wherever indicated. Pelvic organ prolapse was staged using the Pelvic Organ Prolapse Quantification (POP-Q) system.

All surgeries were performed under regional anesthesia following standard institutional protocol. Vaginal hysterectomy with anterior and posterior colporrhaphy and additional pelvic floor repair procedures were carried out according to the degree of prolapse and associated defects.

Intraoperative findings including operative duration, blood loss, difficulty in bladder dissection, and intraoperative complications were recorded. Postoperative management included analgesics, antibiotics, bladder catheterization, early ambulation, and monitoring for postoperative complications. Patients were followed during hospital stay and postoperative recovery period for assessment of symptom relief and complications.

The collected data were entered into Microsoft Excel and analyzed using Statistical Package for the Social Sciences (SPSS) software version 26.0. Continuous variables were expressed as mean $\pm$ standard deviation, while categorical variables were presented as frequencies and percentages. Chi-square test or Fisher's exact test was used for comparison of categorical variables wherever appropriate. Student's t-test was applied for comparison of continuous variables. A p-value of less than 0.05 was considered statistically significant.

RESULTS

During the study period, a total of 114 women underwent vaginal hysterectomy for pelvic organ prolapse. The majority of women belonged to the age group of 51–60 years accounting for 49 patients (42.98%). Most women were multiparous, with parity ≥ 3 observed in 79 patients (69.30%). Postmenopausal women constituted 81 cases (71.05%).

Table 1: Demographic Characteristics of Study Population (n=114)

Variable	Frequency	Percentage (%)
Age Distribution		
31–40 years	8	7.02
41–50 years	37	32.46
51–60 years	49	42.98
>60 years	20	17.54
Parity Distribution		
Para 1–2	35	30.70
Para ≥ 3	79	69.30
Menopausal Status		
Premenopausal	33	28.95
Postmenopausal	81	71.05

Hypertension and anemia were the most common associated medical comorbidities, observed in 24 (21.05%) and 31 (27.19%) women respectively. Urinary symptoms including frequency, urgency, and stress urinary incontinence were reported by a significant proportion of patients.

Table 2: Associated Comorbidities and Urinary Symptoms (n=114)

Variable	Frequency	Percentage (%)
Comorbidities		
Anemia	31	27.19
Hypertension	24	21.05
Diabetes mellitus	11	9.65
Chronic cough/COPD	9	7.89
Obesity	7	6.14
Urinary Symptoms		
Frequency/urgency	42	36.84
Stress urinary incontinence	18	15.79
Burning micturition	14	12.28
Difficulty in micturition	21	18.42

Most women presented with advanced degrees of prolapse. Third-degree uterovaginal prolapse was observed in 61 patients (53.51%), while procidentia was present in 28 patients (24.56%). Associated cystocele and rectocele were common accompanying pelvic floor defects.

The severity of pelvic organ prolapse was additionally assessed using the Pelvic Organ Prolapse Quantification (POP-Q) system. Advanced stage prolapse was more commonly observed, with Stage III prolapse seen in 58 women

(50.88%) followed by Stage IV prolapse in 26 women (22.81%). Most patients presented with Stage III and Stage IV prolapse collectively accounting for 84 cases (73.69%), indicating delayed healthcare-seeking behavior and advanced disease at presentation in the study population

Table 3: Degree of Prolapse and Associated Pelvic Floor Defects (n=114)

Variable	Frequency	Percentage (%)
Degree of Prolapse		
Second degree	25	21.93
Third degree	61	53.51
Procidentia	28	24.56
Associated Pelvic Floor Defects		
Cystocele	86	75.44
Rectocele	52	45.61
Enterocoele	19	16.67
POP-Q Stage		
Stage I	4	3.51
Stage II	26	22.81
Stage III	58	50.88
Stage IV	26	22.81

The mean operative duration was 74.6 ± 12.4 minutes, while mean intraoperative blood loss was 168.3 ± 46.2 mL. Blood transfusion was required in 12 patients (10.53%).

Table 4: Operative Parameters (n=114)

Parameter	Value
Mean operative duration (minutes)	74.6 ± 12.4
Mean blood loss (mL)	168.3 ± 46.2
Mean duration of catheterization (days)	3.1 ± 0.8
Mean hospital stay (days)	5.8 ± 1.4
Blood transfusion required	12 (10.53%)

Intraoperative complications were uncommon. Hemorrhage requiring additional hemostatic measures occurred in 7 patients (6.14%), while bladder injury was noted in 2 patients (1.75%). No bowel injury or ureteric injury was observed.

Table 5: Intraoperative Complications (n=114)

Complication	Frequency	Percentage (%)
Hemorrhage	7	6.14
Bladder injury	2	1.75

Postoperative fever was the most common postoperative complication, observed in 9 women (7.89%). Urinary retention occurred in 5 patients (4.39%), while vault infection was noted in 3 patients (2.63%).

Table 6: Postoperative Complications (n=114)

Complication	Frequency	Percentage (%)
Fever	9	7.89
Urinary retention	5	4.39
Wound/vault infection	3	2.63
Secondary hemorrhage	2	1.75
Vault prolapse during follow-up	1	0.88

Postoperative symptom improvement was observed in the majority of women. Relief from mass per vaginam sensation was reported in 110 patients (96.49%), while improvement in urinary symptoms was observed in 37 out of 42 women (88.10%).

Table 7: Postoperative Symptom Improvement (n=114)

Outcome	Frequency	Percentage (%)
Relief from prolapse symptoms	110	96.49
Improvement in urinary symptoms	37	88.10*
Patient satisfaction with surgery	104	91.23

*Percentage calculated among patients with preoperative urinary symptoms (n=42).

DISCUSSION

In the present study, the majority of women undergoing vaginal hysterectomy for pelvic organ prolapse belonged to the 51–60 years age group (42.98%), and 71.05% were postmenopausal. This finding is consistent with Ansari et al.,² who reported pelvic organ prolapse more commonly among perimenopausal and menopausal women, reflecting the role of aging, estrogen deficiency, and progressive weakening of pelvic floor support. Similar observations are supported by Ryan¹, who emphasized that prolapse symptoms often become clinically significant in older women and may require surgical intervention when conservative measures are ineffective.

Multiparity was an important associated factor in the present study, with 69.30% women having parity ≥ 3 . Ansari et al.,² also observed a strong association of prolapse with higher parity among Indian women. Repeated vaginal childbirth may lead to levator ani injury, fascial weakness, and progressive descent of pelvic organs. This finding highlights the importance of postpartum pelvic floor care and early recognition of prolapse symptoms in multiparous women.

Advanced prolapse was common in the present series. POP-Q Stage III was observed in 50.88% women, while Stage IV prolapse was present in 22.81%; together, advanced prolapse accounted for 73.69% cases. Duddalwar et al.,¹⁰ emphasized the utility of objective prolapse staging systems such as POP-Q for standardized assessment and documentation of pelvic organ prolapse. The predominance of advanced prolapse in the present study may reflect delayed health-seeking behavior, rural referral patterns, social hesitation, and limited access to early urogynecological care.

Associated pelvic floor defects were frequently observed, with cystocele present in 75.44%, rectocele in 45.61%, and enterocele in 16.67% patients. Devnikar et al.,⁴ reported that vaginal hysterectomy combined with pelvic floor repair provides significant anatomical correction in women with uterovaginal prolapse and associated compartment defects. These findings underline the need for careful preoperative assessment of anterior, apical, and posterior compartments rather than treating uterine descent alone.

The mean operative duration in the present study was 74.6 ± 12.4 minutes, and the mean intraoperative blood loss was 168.3 ± 46.2 mL. Comparable operative outcomes were reported by Devnikar et al.,⁴ in their Indian study evaluating vaginal hysterectomy and pelvic floor repair by POP-Q system. Vaginal hysterectomy offers advantages of avoiding abdominal incision, reduced tissue handling, and faster postoperative recovery, particularly in appropriately selected patients. Gray and Giarenis³ also noted that the vaginal route remains an effective surgical option for prolapse correction in suitable women.

Blood transfusion was required in 10.53% patients in the present study. Intraoperative hemorrhage occurred in 6.14% cases, while bladder injury was seen in 1.75%. Devnikar et al.,⁴ and Duddalwar et al.,¹⁰ have reported low but clinically relevant perioperative morbidity in vaginal hysterectomy performed for prolapse. Bladder injury risk may be higher in women with dense adhesions, previous pelvic surgery, distorted anatomy, or advanced anterior compartment prolapse. This supports the importance of careful dissection and adequate surgical expertise.

Postoperative fever was the most common postoperative complication in the present study, seen in 7.89% women, followed by urinary retention in 4.39% and vault infection in

2.63%. These complications are generally manageable with antibiotics, catheter care, and close postoperative monitoring. Evidence-based surgical pathways for prolapse surgery emphasize perioperative infection prevention, early mobilization, bladder care, and structured follow-up to reduce postoperative morbidity.⁷

Urinary symptoms were common in the preoperative period, with frequency or urgency reported in 36.84%, difficulty in micturition in 18.42%, and stress urinary incontinence in 15.79% women. Ryan¹ highlighted that pelvic organ prolapse frequently coexists with lower urinary tract symptoms, which may influence treatment choice and postoperative satisfaction. In the present study, improvement in urinary symptoms was observed in 88.10% of symptomatic women after surgery, suggesting functional benefit following anatomical correction. However, persistent or de novo urinary symptoms may require long-term follow-up and individualized management.

The mean duration of catheterization was 3.1 ± 0.8 days, and the mean hospital stay was 5.8 ± 1.4 days. These findings are consistent with the recognized benefits of vaginal surgery, including shorter recovery, early ambulation, reduced postoperative pain, and lower hospitalization burden. ACOG also supports individualized surgical management of pelvic organ prolapse based on symptoms, anatomical defect, patient preference, and surgical risk.⁵

Vault prolapse during follow-up was observed in 0.88% patients in the present study. Although the short-term recurrence rate was low, long-term surveillance remains important. The RCOG guidance on post-hysterectomy vaginal vault prolapse emphasizes the importance of apical support during prolapse surgery to reduce future vault descent.⁸ Kuitinen et al.,⁹ also reported that prolapse after hysterectomy remains a clinically relevant long-term concern, particularly when apical support is inadequate.

Overall postoperative symptom relief was achieved in 96.49% women, and patient satisfaction was reported in 91.23%. Devnikar et al.,⁴ similarly reported favorable outcomes following vaginal hysterectomy with pelvic floor repair in Indian women. The high symptom improvement in the present study reflects the effectiveness of vaginal hysterectomy with compartment-specific pelvic floor repair in appropriately selected patients with symptomatic prolapse.

The present study was conducted in a tertiary care government medical college hospital serving rural and semi-urban populations. The high proportion of advanced prolapse may be due to delayed presentation, social stigma, inadequate early consultation, and referral of complex cases. Therefore, beyond surgical correction, community awareness, early screening, pelvic floor education, and timely referral are essential to reduce the burden of advanced pelvic organ prolapse.

Thus, vaginal hysterectomy with pelvic floor repair remains an effective and safe surgical option for symptomatic pelvic organ prolapse when performed with proper preoperative assessment, POP-Q staging, meticulous surgical technique, and structured postoperative follow-up.

CONCLUSION

Vaginal hysterectomy with pelvic floor repair is an effective and safe surgical procedure for the management of pelvic organ prolapse, providing satisfactory anatomical correction and significant postoperative symptom improvement. The procedure was associated with acceptable operative duration, minimal blood loss, shorter hospital stay, and low perioperative morbidity in the present study.

Careful patient selection, proper preoperative POP-Q assessment, meticulous surgical technique, and correction of associated pelvic floor defects are important determinants of successful surgical outcome. Vaginal hysterectomy remains a valuable surgical option for women with symptomatic pelvic organ prolapse in tertiary care practice.

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