CLINICAL CHARACTERISTICS AND SURGICAL OUTCOMES OF PELVIC ORGAN PROLAPSE TREATMENT AT THAI BINH UNIVERSITY HOSPITAL (2021–2025)

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ABSTRACT

Background: Pelvic organ prolapse is a common pelvic floor disorder among middle-aged and older women and may adversely affect daily activities, physical function, and quality of life. Local evidence on the clinical characteristics and short-term surgical outcomes of pelvic organ prolapse remains important for improving perioperative management and surgical care.

Objective: This study aimed to describe the clinical characteristics and short-term surgical outcomes of patients undergoing surgical treatment for pelvic organ prolapse at Thai Binh University Hospital during 2021–2025.

Methods: A descriptive observational study was conducted among 82 patients diagnosed with pelvic organ prolapse and treated surgically at Thai Binh University Hospital between January 2021 and December 2025. Data were collected from medical records and clinical follow-up during hospitalization. The main variables included demographic characteristics, menopausal status, parity, clinical manifestations, prolapse severity, surgical technique, operative duration, and intraoperative and postoperative complications. Descriptive statistics were used to summarize the findings.

Results: Most patients were postmenopausal, and a high proportion had a history of three or more childbirths. Advanced pelvic organ prolapse accounted for the majority of cases, with grade III prolapse observed in approximately four-fifths of the study population. Lower urinary tract symptoms were recorded in about one-third of patients, while perineal trauma and cervical lesions were commonly documented. The most frequent anatomical pattern was uterine prolapse combined with posterior vaginal wall prolapse, followed by uterine prolapse with cystocele and anterior vaginal wall prolapse. Crossen surgery was the most commonly performed procedure, accounting for 81.7% of cases. The mean operative duration was 62.65 ± 6.18 minutes. No intraoperative complications were recorded. Postoperative complications were uncommon, with urinary retention, fever/infection, postoperative bleeding, and hematoma being the main events observed before discharge.

Conclusion: Patients undergoing surgery for pelvic organ prolapse at Thai Binh University Hospital were predominantly postmenopausal and commonly presented with advanced-stage prolapse. Crossen surgery was the principal surgical approach. The short-term perioperative outcomes were generally favorable, with no recorded intraoperative complications and a low frequency of postoperative complications. Further studies with longer follow-up and standardized patient-reported outcome measures are needed to evaluate recurrence, functional recovery, and long-term treatment effectiveness.

Keywords: Pelvic organ prolapse; uterine prolapse; Crossen surgery; surgical outcomes; postoperative complications; Vietnam.

1. INTRODUCTION

Pelvic Organ Prolapse (POP) is defined as the descent of the anterior vaginal wall, posterior vaginal wall, uterus (cervix), or the vaginal apex (vaginal vault or post-hysterectomy cuff)[1]. Although POP is rarely life-threatening or associated with severe systemic morbidity, it significantly impacts daily activities, physical labor, and the overall quality of life for women. In Vietnam, the prevalence of POP is approximately 2% among women of reproductive age, increasing to 8% in the 40–50 age group, 8.5% in the 40–70 age group, and reaching a peak of 10% in those aged 70–90[2]. Investigating the factors associated with POP serves not only to improve clinical treatment but also to develop long-term strategies for enhancing public awareness, prevention, and effective management. Therefore, this study was conducted to describe the clinical characteristics and short-term surgical outcomes of patients undergoing surgical treatment for pelvic organ prolapse at Thai Binh University Hospital during 2021–2025: "Clinical Characteristics and Surgical Outcomes of Pelvic Organ Prolapse Treatment at Thai Binh University Hospital (2021–2025)."

2. METHODS

2.1. Study Design

This was a descriptive observational study using

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retrospective data collection. Medical records were reviewed for eligible patients treated during the retrospective period. The research was conducted on 82 patients diagnosed with POP and treated surgically at Thai Binh University Hospital between January 1, 2021, and December 31, 2025.

2.2. Sampling

The sample size was calculated using the following formula:

$$n = Z^2_{1-\alpha/2} \frac{p(1-p)}{d^2}$$

n: The minimum required sample size.

Z: The confidence level coefficient (with a 95% confidence level and a significance level of alpha = 0.05 so $Z_{0.975} = 1.96$

p: 0.944 according to the findings reported by Ath 3

d: The margin of error (allowable error), set at d = 0.05.

Substituting these values into the formula, the calculated sample size is n=82

The sample size was calculated using the formula for minimum sample size estimation, yielding a requirement of 82 participants. Inclusion criteria encompassed patients diagnosed with POP and indicated for surgery who consented to participate. Exclusion criteria included patients with malignant genital lesions or those who had undergone POP surgery elsewhere.

2.3. Outcome definitions

According to the classical clinical classification, pelvic organ prolapse (POP) is categorized into three degrees of severity:

- Grade I POP:

+ Prolapse of the anterior vaginal wall associated with cystocele.

+ Prolapse of the posterior vaginal wall, which may be accompanied by rectocele in more severe cases.

+ The cervix descends into the vaginal canal but does not reach the vaginal introitus.

- Grade II POP:

+ Prolapse of the anterior vaginal wall with cystocele.

+ Prolapse of the posterior vaginal wall, which may be associated with rectocele.

+ The cervix protrudes intermittently through the vaginal introitus.

- Grade III POP:

+ Prolapse of the anterior vaginal wall associated with cystocele.

+ Prolapse of the posterior vaginal wall, which may be accompanied by rectocele.

+ Marked uterine and cervical descent, with the cervix completely protruding beyond the vaginal introitus.

Short-term surgical outcomes included operative time, intraoperative complications, postoperative complications before discharge, and length of hospital stay if available. Intraoperative complications were defined as any organ injury or major bleeding occurring during surgery. Postoperative complications included urinary retention, fever/infection, postoperative bleeding, hematoma, or other adverse events recorded before discharge.

2.4. Data Collection

Data were collected using pre-designed medical records and included demographic information, clinical characteristics, surgical details, and postoperative outcomes. Patients were monitored from admission to discharge, ensuring comprehensive data capture.

2.5. Statistical analysis

Data were entered and analyzed using statistical software. Data were analyzed descriptively. Categorical variables were presented as frequencies and percentages, while continuous variables were summarized as mean ± standard deviation.

2.6. Ethical considerations

The study was conducted in accordance with the Declaration of Helsinki and was approved by the relevant institutional ethics committee. For retrospectively collected data, patient confidentiality was strictly maintained. Patient confidentiality was strictly maintained throughout the study.

3. RESULTS

3.1. Clinical Characteristics

3.1.1. Demographics

Table 1. Age distribution and menopausal status of the study participants

Age	Menstrual Status				p*
	Menopausal		Postmenopausal		
	n	%	n	%	
< 40	01	1.28	01	25	< 0,05
40 - 50	04	5.13	02	50	
> 50	73	93.59	01	25	
Total	78	100	04	100	

- Mean Age: 61.02 ± 8.92 (39 - 72) years.

- Menopausal Status: 95.12% of patients were menopausal.

- Parity: 63.41% of patients had three or more childbirths, with an average neonatal birth weight of 3.415 ± 562 g.

3.1.2. POP Severity

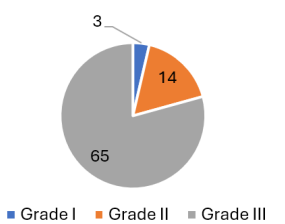


Figure 1. Stages of pelvic organ prolapse among study subjects

The majority of patients presented with grade III pelvic organ prolapse (POP), accounting for 79.27%. This was followed by grade II at 17.07% and grade I at 3.66%

Table 2. Clinical symptoms of the study subjects

Characteristics		n	%
Urinary dysfunction	Yes	27	32.93
	No	55	67.07
Bowel dysfunction	Yes	8	9.76
	No	74	90.24

Characteristics		n	%
Perineal trauma	Yes	77	93.90
	No	5	6.10
Uterine size	Large	3	3.66
	Small	79	96.34
Cervix	No lesions	31	37.80
	Inflammation, ulceration	46	56.10
	ectopy	5	6.10
Bilateral adnexa	Normal	78	95.12
	Abnormal	4	4.88

Lower urinary tract symptoms were observed in 32.93% of patients. Perineal trauma was present in 93.9% of cases, while 96.34% exhibited age-related uterine atrophy. Additionally, cervical lesions were identified in 62.2% of the study population.

Table 3. Characteristics of POP of the study subjects

Characteristics of POP	n	%
Isolated uterine prolapse	18	21.95
Uterine prolapse with cystocele and anterior vaginal wall prolapse	24	28.27
Uterine prolapse with posterior vaginal wall prolapse	27	32.93
Uterine prolapse with concomitant cystocele, anterior, and posterior vaginal wall prolapse	13	15.85
Total	82	100

The prevalence of uterine prolapse combined with both anterior (cystocele) and posterior vaginal wall prolapse was 15.85%. Uterine prolapse associated with posterior vaginal wall prolapse accounted for 32.93%, while uterine prolapse with concomitant cystocele and anterior vaginal wall prolapse represented 28.27%. Isolated uterine prolapse was observed in 21.95% of cases. Notably, there were no reported cases of vaginal vault prolapse following pelvic organ prolapse surgery at the hospital.

3.2. Surgical Outcomes

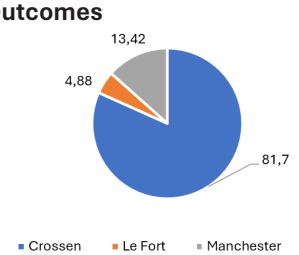


Figure 2. Surgical method of the study subjects

The Crossen procedure was the most frequently utilized surgical technique (81.7%)

Mean Surgery Duration is 62.65 ± 6.18 minutes (range: 45–80 minutes).

Table 4. Intraoperative and postoperative complications

Characteristics		n	%
Intraoperative complications	Bladder injury	0	0
	Rectal injury	0	0
Postoperative complications	Postoperative bleeding	03	3.66
	Fever, infection	03	3.66
	Urinary retention	04	4.88
	Postoperative hematoma	02	2.44
	None	70	85.36
Total		82	100

There were no intraoperative accidents. Postoperatively, 85.36% of patients remained complication-free. The most common complications were urinary retention (4.88%), followed by postoperative bleeding (3.66%) and fever (3.66%). One patient may experience more than one complication.

4. DISCUSSION

This is the first published study on pelvic organ prolapse conducted at Thai Binh University Hospital. The mean age and high prevalence of postmenopausal status align with global findings that POP predominantly affects older women[4]. Multiparity and high neonatal birth weights are established risk factors[5].

The epidemiological profile of patients at Thai Binh University Hospital reflects a broader regional trend in Southeast Asia, where life expectancy for women has increased, leading to a larger cohort of postmenopausal women living with chronic pelvic floor disorders. The mean age of patients in the Thai Binh study was 61.02 ± 8.92 (range: 39 - 72) years, a figure that demonstrates high consistency with other major Vietnamese clinical cohorts. For instance, studies conducted at Vietnam-Sweden Uong Bi Hospital reported a mean age of 66.4 ± 9.0 years, while the National Hospital of Obstetrics and Gynecology observed a slightly younger mean of 64.6 ± 6.7 years in their Crossen surgery groups. This demographic clustering suggests that the seventh decade of life is the peak period for surgical intervention in Vietnam, likely due to the cumulative impact of age-related tissue degradation and the long-term sequelae of high parity.

The high prevalence of Grade III pelvic organ prolapse (79.27%) in this study reflects a surgical filter effect common in regional tertiary centers, where patients typically present only when anatomical descent becomes symptomatic or irreducible. This proportion was comparable to the findings reported by Nguyen Thi Hong (56.6%)[6]. This concentration of advanced disease aligns with surgical cohorts in similar settings where stage III disease comprise the vast majority of clinical volume. The predominance of multi-compartmental involvement—particularly the high rate of concomitant posterior (32.93%) and anterior (28.27%) defects—highlights the global nature of pelvic floor failure, where apical descent serves as a primary driver for adjacent compartment collapse. Notably, isolated uterine prolapse (21.95%) was relatively infrequent, reinforcing evidence that Level 1 support

failure often facilitates Level 2 and 3 defects. The zero incidence of post-surgical vaginal vault prolapse is a significant clinical indicator. While literature suggests vaginal vault recurrence rates of 1.8% to 11.6% following hysterectomy for prolapse, the stability observed in this cohort mirrors the high anatomical success rates (up to 95.7%) reported in specialized regional centers employing modern reconstructive paradigms. These findings underscore the importance of comprehensive, multi-compartmental surgical strategies that prioritize robust apical support to ensure long-term durability.

The predominance of Crossen surgery reflects its widespread adoption for advanced POP. Le Fort colpocleisis, although less common, is reserved for elderly patients prioritizing non-sexual functionality[5]. The surgical procedures performed in this study are consistent with the predominant techniques currently employed across most pelvic floor centers and hospitals in Vietnam[2,6].

The low complication rate (14.64%) is favorable compared to previously published clinical studies, where recurrence rates and mesh-related complications are significant concerns[6,7].

The findings underscore the efficacy and safety of POP surgeries at Thai Binh University Hospital. The results highlight the importance of tailored surgical approaches based on patient demographics and clinical severity, as well as the need for robust postoperative monitoring to minimize complications.

This study has several limitations. First, it was conducted at a single center with a relatively small sample size, which may limit the generalizability of the findings. Second, the study mainly evaluated short-term perioperative outcomes before discharge and did not assess long-term recurrence, sexual function, urinary symptoms, or patient satisfaction. Third, because of the descriptive design, causal relationships between clinical characteristics and surgical outcomes could not be established. Future multicenter studies with longer follow-up and standardized patient-reported outcome measures are warranted.

5. CONCLUSION

This study described the clinical characteristics and short-term surgical outcomes of 82 patients undergoing surgical treatment for pelvic organ prolapse at Thai Binh University Hospital during 2021–2025. Most patients were postmenopausal and presented with advanced-stage prolapse. Crossen surgery was the most commonly performed procedure. Short-term perioperative complications were uncommon, and no intraoperative complications were recorded. Further studies with longer follow-up and patient-reported outcome measures are needed to evaluate recurrence, functional recovery, and long-term treatment effectiveness.

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