

Original Article**Clinical Profile of Peripartum Hysterectomy: A Cross-Sectional Study****Amar Nath Chaudhary, Gehanath Baral, Shanti Subedi, Rajan Shah**

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Article Received: 7th October, 2025; Accepted: 12th January, 2026; Published: 30th June, 2026**DOI: <https://doi.org/10.3126/jonmc.v15i1.96214>****Abstract****Background**

An emergency obstetric treatment called a peripartum hysterectomy is used to treat potentially fatal bleeding or uterine rupture during or after childbirth. The aim of the study was to find the clinical profile, indications, and outcomes of emergency peripartum hysterectomy at a tertiary care hospital in eastern Nepal.

Materials and Methods

A hospital-based cross-sectional study was conducted in the department of Obstetrics and Gynaecology, Nobel Medical College and Teaching Hospital, Biratnagar, from September 2022 to October 2023. All women who underwent peripartum hysterectomy were included. Demographic characteristics, obstetric history, indications, intraoperative findings, and postoperative outcomes were analyzed using descriptive statistics.

Results

Among 7,974 deliveries, 31 underwent peripartum hysterectomy, giving an incidence of 3.88 per 1,000 deliveries. The mean maternal age was 29.7 ± 5.4 years, and most patients were multigravida (48.3% gravida 3). The leading indications were placenta accreta spectrum (25.8%), placenta previa (25.8%), postpartum hemorrhage (16.1%), and uterine rupture (12.9%). Hysterectomy followed cesarean delivery in 74% of cases. All patients required blood transfusion, 51.6% required ICU admission, and 19.3% sustained bladder injury.

Conclusion

Abnormal placentation and previous cesarean sections are the major contributors. Early antenatal identification of high-risk cases and multidisciplinary "accreta team" management may help prevent emergency hysterectomy and improve maternal outcomes.

Keywords: *Cesarean Section, Hysterectomy, Postpartum Hemorrhage, Placenta Accreta*

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Introduction

Peripartum hysterectomy is an emergency obstetric procedure performed to manage life-threatening hemorrhage or uterine rupture during or after delivery. Despite advances in obstetric care, its incidence ranges from 0.2 to 5.1 per 1,000 births [1-4] with higher rates in women with prior cesarean sections or placenta accreta spectrum disorders (PAS) high parity, advanced maternal age, prolonged delivery, abnormal placentation and a history of one or more cesarean sections [5,6]

Although lifesaving, it carries significant risks, including surgical complications, transfusion requirements, and psychological trauma [7]. Placenta accreta spectrum, placenta previa, postpartum hemorrhage, and uterine rupture are among the leading indications. In recent years, shifting obstetric trends particularly the rise in cesarean deliveries worldwide have influenced the indications for peripartum hysterectomy (PH) and contributed to higher rates of emergency peripartum hysterectomy (EPH). [8, 9]. Data regarding the clinical profile and outcomes of PH in eastern Nepal are limited, highlighting the need for local evidence to improve maternal and neonatal outcomes.

This study aimed to evaluate the clinical profile, indications, maternal complications, and neonatal outcomes of women undergoing peripartum hysterectomy at a tertiary care teaching hospital in eastern Nepal.

Materials and Methods

This was a hospital-based prospective cross-sectional study conducted to evaluate the clinical profile, indications, maternal complications, and neonatal outcomes of women undergoing peripartum hysterectomy. The study included all eligible patients who underwent peripartum hysterectomy during the study period. Data were collected prospectively using a structured proforma designed for the study. Demographic characteristics, obstetric history, clinical presentation, operative findings, indications for hysterectomy, intraoperative complications, maternal outcomes, and neonatal outcomes were recorded and analyzed. The study was conducted in the Department of Obstetrics and Gynaecology at Nobel Medical College and Teaching Hospital, a tertiary care referral center in eastern Nepal from September 2022 to October 2023. Ethical approval for the study was obtained from the

Institutional Review Committee (IRC) of Nobel Medical College and Teaching Hospital before commencement of the study.

All women who underwent peripartum hysterectomy during the study period were included in the study. Peripartum hysterectomy performed during cesarean section, immediately after vaginal delivery, or within the puerperium due to obstetric causes were considered eligible for inclusion. Women admitted directly to the hospital as well as those referred from peripheral health centers for obstetric emergencies requiring hysterectomy were also included. However, hysterectomies performed for non-obstetric gynaecological indications and elective hysterectomies unrelated to pregnancy or delivery were excluded from the study. The sample size was calculated using the single population proportion formula considering the prevalence of peripartum hysterectomy from previous studies. Assuming an average prevalence of 2 per 1,000 deliveries (0.2%) as ranging from 0.24 to 2.7/1000 deliveries [10-11], 0.33 (Netherlands) [12], 0.63 (Saudi Arabia) 1.2 to 2.7/1000 deliveries in USA [13], 0.47 in India [14], with a 95% confidence interval and 5% margin of error, the minimum required sample size was estimated to be 30 cases. A consecutive sampling technique was used. All women fulfilling the inclusion criteria during the study period were enrolled consecutively until completion of the study duration. A total of 31 cases of peripartum hysterectomy were identified among 7,974 deliveries during the study period and included in the final analysis.

Detailed information regarding maternal age, parity, gestational age, mode of delivery, indication for hysterectomy, operative findings, blood transfusion requirements, intensive care unit admission, intraoperative injuries, and neonatal outcomes were recorded from patient interviews, operative notes, delivery records, and hospital case files. The collected data were entered into Microsoft Excel after verification and cleaning. Statistical analysis was performed using Statistical Package for Social Sciences (SPSS) software version 25.0. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize demographic characteristics, clinical indications, maternal complications, and neonatal outcomes. Categorical variables were presented as frequencies and percentages, while continuous variables were expressed as mean $\pm$ standard deviation.



Results

During the study period of thirteen months, there were 31 cases of peripartum hysterectomy and 7974 total deliveries. Thus, the incidence of peripartum hysterectomies was 3.88/1000 deliveries. The mean age of women was 29.7 ± 5.4 years. Table (1). Among those 31, two hysterectomies were performed after vaginal delivery, 6 for the emergency laparotomy for ruptured uterus and remaining 23 hysterectomies after cesarean section.

Most of them were multigravida, and only one was primigravida, who had atonic PPH ultimately leading to EPH and one case of twin pregnancy. More than half (54%) of them were at term pregnancy. Other demographic data are depicted in the table 1.

Table 1: Demography of patients

Age group	Frequency (%)
<20	1 (3.2)
20-24	5 (16.1)
25-29	14 (45.1)
30-35	5 (16.1)
>35	6 (19.3)
Gravida	
1	1 (3.2)
2	9 (29)
3	15 (48.3)
4 or more	6 (19.3)
Period of gestation (Weeks)	
<28	3 (9.6)
29-36	11 (35.4)
37-42	17 (54.8)

Table 2: Causes of Peripartum hysterectomy

Cause	Frequency (%)
Placenta accreta spectrum	8 (25.8)
Placenta praevia	8 (25.8)
Post partum hemorrhage	5 (16.1)
Uterine rupture	4 (12.9)
Previous cesarean section	3 (9.6)
Ante-partum hemorrhage	2 (6.4)
Septic abortion	1 (3.2)

Table 3: Complications of peripartum hysterectomy

Complications	Frequency (%)
Blood transfusion (BT)	All 31
Massive BT	19 (61.2)
ICU admission	16 (51.6)
Ventilation >24 hr	8 (25.8)
Use of Inotropes	7 (22.5)
Bladder injury	6 (19.3)
Ureter injury	2 (6.4)

Among the 32 newborns (including one pair of twins), female infants predominated, with 21 cases (65.6%), compared to 10 male infants (31.3%). One case (3.1%) had unrecorded sex in case of septic abortion. Nearly half of the neonates were low birth weight (<2.5 kg), accounting for 15 cases (46.9%), indicating a high rate of fetal growth restriction or preterm birth associated with maternal obstetric emergencies. Another 14 infants (43.8%) had normal birth weight (2.5–3.9 kg), while 3 infants (9.3%) weighed more than 4 kg.

At birth, 26 (81.2 %) neonates were alive, while 6 (18.8%) were stillbirths or neonatal deaths immediately after delivery. Follow-up at 7 days revealed that 21 (65.6) infants remained alive, whereas 11 (34.4) infants had died within the first week of life. A total of 14 (43.75) neonates required NICU admission. Table 4 summarizes the neonatal characteristics and outcomes among babies born to mothers who underwent peripartum hysterectomy.

Table 4: Neonatal outcome

Neonatal characteristics	Frequency (%)
Sex of baby	
Male	10 (31.3)
Female	21 (65.6)
Not known	1 (3.1)
Birth weight (Kg)	
<2.5	15 (46.9)
2.5-3.9	14 (43.8)
≥4.0	3 (9.3)
Outcome at birth	
Alive	26 (81.2)
Dead	6 (18.8)
Outcome at 7 th day after birth	
Alive	21 (65.6)
Dead	11 (34.4)
NICU admission	14 (43.75)

Discussion

Peripartum hysterectomy (PH) is a critical surgical intervention performed in obstetric emergencies when conservative management fails to control life-threatening haemorrhage or other complications. Our findings align with global data while highlighting specific trends in our study population that warrant further discussion. Incidence of PH was found to be 3.88/1000 deliveries in our study which is higher than that of other studies done in India (0.47/1000 deliveries) [14] in Norway (0.44/1000) [15] incidence of 2.40/1000 deliveries in India Jammu [16] in Iran (2.81/1000 deliveries) [17].



Maternal Age and Parity: In our study, the highest incidence of PH occurred in women aged 25-30 years (n=14), followed by those >35 years (n=6). This contrasts somewhat with global data showing that advanced maternal age (>35 years) carries the highest risk for PH due to increased likelihood of placenta accreta spectrum (PAS) and uterine atony [18, 19]. The predominance of multiparous women (gravida ≥ 3 : n=21) in our study supports established evidence that high parity is a significant risk factor for PH [20]. A 2023 systematic review in BJOG reported that grand multiparity (≥ 5 deliveries) increases PH risk by 3-fold compared to nulliparous women [21, 22].

Placenta-related disorders (PAS: n=8; previa: n=8) were the leading causes of PH in our cohort, consistent with WHO data identifying abnormal placentation as responsible for 50-70% of PH cases globally [23,24]. The majority of procedures occurred at term (37-42 weeks: n=17), mirroring trends from high-resource settings where planned hysterectomies are more feasible. However, 11 cases occurred preterm (29-36 weeks), aligning with low-resource settings where late-presenting emergencies are common. This was similar to other study [25]. Notably, 23/31 deliveries (74%) preceding PH were cesarean sections, with 6 cases involving ruptured uterus. This echoes a 2024 AJOG study reporting that prior cesarean delivery increases PH risk by 8-fold, with uterine rupture accounting for 15-20% of cases in low/middle-income countries [26]. The male-to-female neonatal ratio (10:21) contrasts with population norms and findings of B Jones [27], this anomalous finding might be due to limited sample size, though similar skewed ratios have been reported in PH cohorts. The high rate of low birth weight (LBW: n=14) likely reflects preterm deliveries secondary to hemorrhagic emergencies. **Resource disparities:** Our findings bridge trends from high-income countries (where PAS dominates PH indications) and low-resource settings (where uterine rupture and atony prevail) [28,29]. First-trimester ultrasound screening for placental disorders could reduce emergent PH [30]. The 2023 FIGO guidelines recommend multidisciplinary "accreta teams" to improve outcomes [31]. Fertility preservation: Balloon tamponade and uterine artery embolization may avert 30-50% of hysterectomies when available [32]. Small sample size and single-center data

limit generalizability. Underreporting of minor PH cases may skew severity profiles.

Conclusion

This study identified a high incidence of PH at our tertiary facility in eastern Nepal. The clinical profile observed in this study demonstrates a strong association between peripartum hysterectomy and abnormal placentation, previous cesarean delivery, and major obstetric hemorrhage. Despite its life-saving role, the procedure is associated with considerable maternal and neonatal morbidity.

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Conflict of interest: None

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