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Original Research Article

A study on risk factors and proportion of emergency peripartum hysterectomy in a tertiary care centre

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ABSTRACT

Background: Peripartum hysterectomy, though rare, is a high-risk procedure performed during or immediately after delivery. It is linked to increased morbidity, mortality, and significant healthcare costs, particularly affecting women wishing to preserve fertility. Major complications include transfusion requirements, re-exploration for persistent bleeding, febrile morbidity, severe surgical complications, and maternal death.
Methods: This prospective study was conducted over 18 months (September 2022 to May 2024) at Vilasrao Deshmukh Government Medical College and Hospital, Latur. It included patients requiring emergency peripartum hysterectomy, both those presenting directly and those referred after undergoing the procedure elsewhere.
Results: In this study, the majority of cases (12) occurred in individuals aged 35 and above, followed by 11 cases in the 26-34 age group and 7 cases in the 18-25 age group. Most patients had only primary education (43.32%), with 33.34% completing secondary education and 23.34% graduating from secondary education. A higher prevalence was observed in rural areas (56.66%) compared to urban locations (43.34%). Socioeconomically, most cases (73.34%) belonged to lower socioeconomic classes (III, IV, V), while 26.66% were from upper socioeconomic classes (I, II).
Conclusions: Emergency peripartum hysterectomy is a critical, life-saving intervention, where timely execution and a multidisciplinary approach are essential for improving patient outcomes. Assessing its prevalence in society aids in identifying key risk factors, enabling early detection and a comprehensive strategy to safeguard maternal health.

Keywords: Emergency peripartum hysterectomy, Proportion, Risk factors, Tertiary care centre

INTRODUCTION

Peripartum hysterectomy, a surgical procedure performed at the time of delivery or in the immediate postpartum period, although a rare event, is associated with increased morbidity and mortality. Moreover, it is considered one of the most devastating complications in obstetrics resulting in high costs to the health care system and adverse outcomes for women desiring to maintain their fertility.[1,2]

The main complications related to emergency peripartum hysterectomy include transfusions need for re-exploration because of persistent bleeding and febrile morbidity major surgical complications or maternal death.[1-9]

Many studies have estimated an incidence rate in the US between 0.8 and 1.5 per 1,000 deliveries although, the incidence has been reported to be as high as 2.28 per 1,000 deliveries.[10-12] This variation is due in part to the different definitions regarding the time period for peripartum hysterectomy used in different studies, either within 24 hours of a delivery or during the same hospitalization period.[10,12]

Previous reports have found that peripartum hysterectomy is associated with cesarean delivery.[13] A prior cesarean delivery is associated with an increased rate of abnormal placentation, including placenta previa, and placenta accreta in subsequent pregnancies. In addition, it is

hypothesized that uterine scarring, especially with increasing number of previous cesarean deliveries, also increases the risk of peripartum hysterectomy, even in the absence of placenta previa.[14]

Although some risk factors for peripartum hysterectomy have been established, including mode of delivery or multiple births, it is important to note that many reports were limited by lack of adequate control for potential confounders.[15,16] Moreover, most of the studies were not able to measure the magnitude of the associations due to the small sample sizes.[14] In addition, these studies were conducted in single tertiary care institutions, diminishing their generalizability and most of these studies did not have a comparison group.

This study aimed to evaluate the occurrence and contributing factors of emergency peripartum hysterectomy in a tertiary care center, focusing on socio-demographic characteristics and its proportion within the studied population.

METHODS

This prospective observational study was conducted in the department of obstetrics and gynecology at Vilasrao Deshmukh Government Medical College and Hospital, Latur, over 18 months (September 2022 to May 2024). It included patients who underwent emergency peripartum hysterectomy at the center or were referred after undergoing the procedure elsewhere. Patients with complications from medical termination of pregnancy were excluded. A total of 30 patients were enrolled using convenient sampling based on a study conducted by Dani et al, with a prevalence of 0.17%.[17] Data was collected using a pretested questionnaire covering demographics, obstetric history, risk factors (e.g., uterine atony, placenta previa/accreta, prior LSCS), surgical details, complications, and outcomes. Ethical approval was obtained from the institutional ethics committee, and verbal informed consent was taken from participants. Data were entered in Microsoft Excel and analyzed using SPSS version 22. Descriptive statistics were done in the form of a frequency distribution.

RESULTS

The present prospective study was conducted on all patients who underwent emergency peripartum hysterectomy in a tertiary care centre during the study period.

Table 1: Distribution of cases as per age (n=30).

Age (in years)	Number of cases	Percentage
18-25	07	23.34
26-34	11	36.66
35 and above	12	40
Total	30	100

The Table 1 indicates that the majority of cases were observed in the 35 years and above age group, accounting for 12 cases, followed by 11 cases in the 26-34 years age group, and 7 cases in the 18-25 years age group.

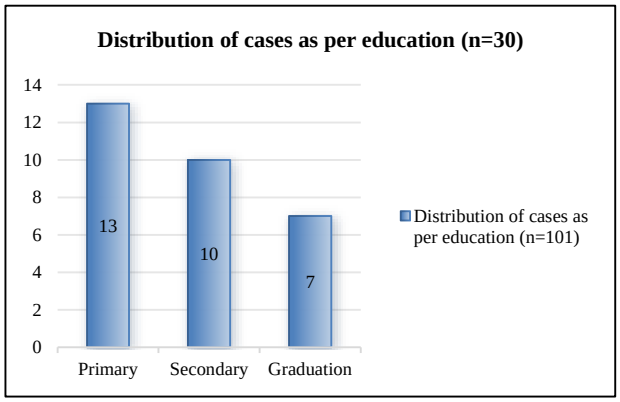

Figure 1: Distribution of cases as per education (n=30).

The figure illustrates that the highest proportion of cases belonged to individuals with primary education, comprising 13 cases (43.32%). This was followed by 10 cases (33.34%) among those with a secondary-level education, while 7 cases (23.34%) were recorded in individuals with a graduation-level education.

Table 2: Distribution of cases as per place of residence (n=30).

Place of residence	Frequency	Percentage
Urban area	13	43.34
Rural area	17	56.66
Total	30	100

Table 2 indicates that the majority of cases originated from rural areas, accounting for 17 cases (56.66%), while 13 cases (43.34%) were from urban areas.

Table 3: Distribution of cases as per socioeconomic status (n=30) (as per modified BG Prasad Classification, 2023).

SE Class	Frequency	Percentage
I	04	13.33
II	04	13.33
III	05	16.66
IV	07	23.34
V	10	33.34
Total	30	100

Upper classes: class I and II, lower classes: class III, IV, V

The Table 3 indicates that the majority of cases belonged to the lower socioeconomic classes (III, IV, V), accounting for 22 cases (73.34%), while 8 cases (26.66%) were from the upper classes (I, II).

Table 4: Distribution of cases as per parity (n=30).

Parity	Frequency	Percentage
Primigravida	09	30
Multigravida	21	70
Total	30	100

Table 5: Distribution of cases as per gestational age (weeks) (n=30).

Gestational age (weeks)	Frequency	Percentage
<28 weeks	01	3.33
28-34 weeks	12	40
>34 weeks	17	56.66
Total	30	100

Table 5 shows majority of cases had gestational age was >34 weeks, 17 cases (56.66%), 12 cases found in 28-34 weeks (40%), and 1 case <28 weeks (3.33%).

Table 6: Distribution of cases as per mode of delivery (n=30).

Mode of delivery	Frequency	Percentage
Spontaneous vaginal	04	13.33
Assisted vaginal	10	33.34
Cesarean delivery	16	53.33
Total	30	100

Cesarean delivery was the most common mode (53.33%), followed by assisted vaginal (33.34%) and spontaneous vaginal delivery (13.33%).

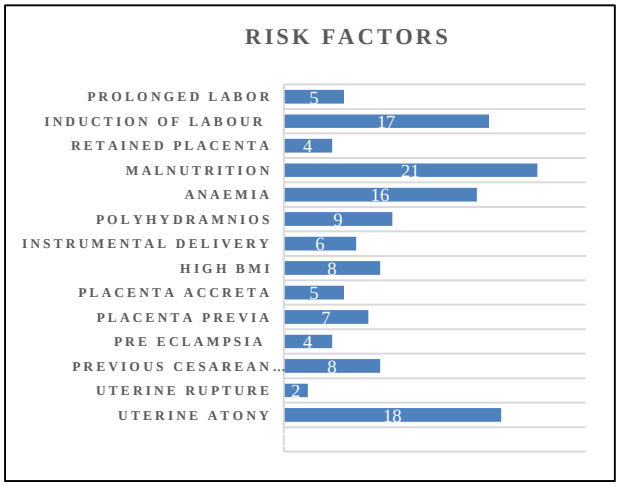

Figure 2: Distribution of cases as per risk factors (n=30).

Uterine atony and malnutrition were the most common risk factors, followed by anaemia and induction of labour.

The Figure 3 indicates that total hysterectomy was performed in 17 cases (56.67%), while subtotal hysterectomy was done in 13 cases (43.33%).

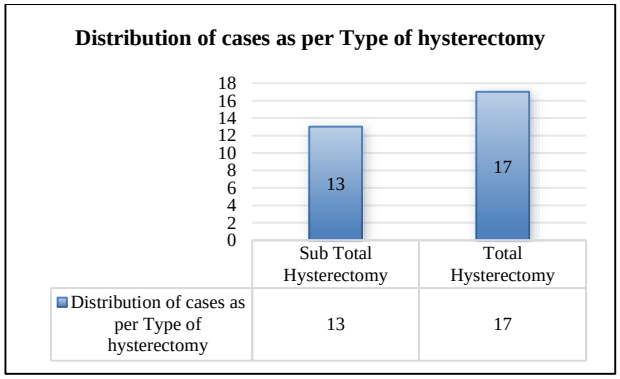

Figure 3: Distribution of cases as per type of hysterectomy (n=30).

The majority required blood transfusion (73.33%) and ICU admission (56.66%); complications included sepsis, urological injury, DIC, and one death.

Table 7: Outcome of maternal morbidity (n=30).

Maternal and perinatal morbidity	Frequency	Percentage
Blood transfusion	22	73.33
Maternal ICU admission	17	56.66
Maternal death	01	3.33
Sepsis	07	23.33
Re-laparotomy	01	3.33
DIC	01	3.33
Urological injury	05	16.66

DISCUSSION

This prospective study included all patients who underwent emergency peripartum hysterectomy at a tertiary care center during the study period. Peripartum hysterectomy is a lifesaving procedure performed in cases of severe, uncontrollable obstetric hemorrhage. In recent times, its incidence has been rising, not primarily due to mismanagement of the third stage of labor or obstructed labor, but largely due to the growing number of cesarean sections. The increase in repeat cesarean deliveries subsequently raises the risk of conditions like placenta previa and placenta accreta

In the present study, the proportion of emergency peripartum hysterectomy (EPH) was 0.00277, which is slightly higher compared to other studies: Dani et al (0.00177), D'Arpe et al (0.00211), and Akintayo et al (0.0025). These proportions reflect the incidence of EPH across different study populations and highlight a rising trend in such cases. In our study, the majority of cases (12) were from the age group ≥35 years, followed by 11 cases in the 26-34 years group and 7 in the 18-25 years group. Similar age distributions were observed in studies by Tahmina et al (mean age 30.25 years), Sharma et al (mean age 28.4±3.8 years), and Selo-Ojeme et al (mean age 37 years, $p<0.001$).[17-20] Educationally, most women had only

primary education (43.32%), followed by secondary (33.34%) and graduation (23.34%). A majority (56.66%) belonged to rural areas. Socioeconomically, 73.34% of the cases were from lower classes (III, IV, V), consistent with findings by Nurfauzia et al, who reported higher EPH incidence in low- and lower-middle-income contexts.[21] According to Machado et al, EPH incidence ranges from 0.24 to 8.7 per 1000 deliveries and is more common after cesarean sections than vaginal deliveries.[22]

CONCLUSION

Emergency peripartum hysterectomy (EPH) is a vital, life-saving procedure performed in cases of severe postpartum hemorrhage or obstetric complications. In this study, most patients were aged 35 and above, from rural and lower socioeconomic backgrounds, and were multigravida with gestation beyond 34 weeks. Induced labor and cesarean delivery were common, with uterine atony being the leading risk factor. Total hysterectomy was performed in most cases, and many required blood transfusions. Hemorrhagic shock was the most frequent complication. The maternal and neonatal mortality rates were 3.33% and 6.66%, respectively, emphasizing the need for timely, multidisciplinary care in high-risk pregnancies.

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Ethical approval: The study was approved by the Institutional Ethics Committee at VDGMC, Latur, approved this study

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