E-ISSN 2250-0944
ISSN 2250-1150
doi: 10.31838/ijprt/15.01.207

Research Article

A Study on Intra and Postoperative Complications of Emergency Peripartum Hysterectomy in a Tertiary Care Centre

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Received: 05.05.25, Revised: 26.05.25, Accepted: 12.06.25

ABSTRACT
Background: 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.
Aim and Objective: 1. study the intra operative and post operative complications of emergency peripartum hysterectomy.2. Study the maternal and perinatal outcome. Study the various risk factors associated with emergency peripartum hysterectomy.
Methods: Study design: Prospective study, Study setting**:** Department Of obstetrics and gynaecology, Vilasrao Deshmukh Government Medical College, Latur, Maharashtra. Study Duration: September 2022-May 2024. Study population: The study was conducted on all patients who were admitted in OBGY ward fulfilling the inclusion and exclusion criteria
Sample size: 30
Result: majority of cases were from 35 and above year's age group 12 cases, most of cases presented with Multigravida 21 cases (70%) and 9 cases Primigravida (30%). majority of cases gestational age was > 34 weeks 17 cases (56.66%), Most of cases Mode of delivery were casarean delivery 16 cases (53.33%) Assisted vaginal delivery 10 cases (33.34%) and 4 cases presented with spontaneous vaginal delivery (13.33%). majority of cases presented with Uterine atony 18 cases (60%) followed by 8 cases presented with previous LSCS (26.66%), placenta previa found in 7 cases (23.33%). Total Hysterectomy done in 17 cases (56.67%).2 neonatal death (6.66%), 1 maternal death (3.33%), most common operative complication was haemorrhagic shock 13 cases (43.33%) followed by septicemia 7 cases (23.33%), wound infection 6 cases (20%),
Conclusions: Majority of cases were from 35 and above year's age group, Most of cases presented with Multigravida, most of cases Mode of delivery was cesarean delivery, Most common post operative complication was haemorrhagic shock, Maternal mortality was 3.33%, Neonatal Mortality was 6.66%.

Keywords: Peripartum hysterectomy, uterine atony, haemorrhagic shock

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 [1,2] and adverse outcomes for women desiring to maintain their fertility.

The main complications related to emergency peripartum hysterectomy include transfusions [1-4] need for re-exploration because of persistent bleeding and febrile morbidity [5-7] major surgical complications or maternal death [8,9]

Many studies have estimated an incidence rate in the US between 0.8 and 1.5 per 1,000 deliveries [10,11] although, the incidence has been reported to be as high as 2.28 per 1,000 deliveries [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 [12] or during the same hospitalization period [10].

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 [15] or multiple births [15], it is important to note that many reports were limited by lack of adequate control for potential confounders.

Aim and Objective

1. To study the intra operative and post operative complications of emergency peripartum hysterectomy.
2. To study the various risk factors associated with emergency peripartum hysterectomy.
3. Study the maternal and perinatal outcome.

MATERIAL AND METHODS

Study design: Prospective study

Study setting: OBGY Department of tertiary care centre

Study duration: September 2022-May 2024

Study population: The study was conducted on all patients who were admitted in OBGY ward fulfilling the inclusion and exclusion criteria

Sample size calculation

According To The Study Done By **Dani Et Al [16]** Entitled "Emergency Obstetric Hysterectomy: A Study From A Tertiary Teaching Hospital", Reported That The Incidence Of Emergency Obstetric Hysterectomy Was 0.17% In Their Study.

So, Considering A Prevalence Of 0.17% (Emergency Obstetric Hysterectomy), And Population Size Of 20000 (Considered As General Population), We Used The Following Incidence Formula For Calculating The Sample Size.

Samples Size =4pq/L*l where p=prevalence, Prevalence Is 0.17%

Sample Size = 4*0.17*99.87/1.73*1.73

Sample Size Approx =23

Putting These Values In The Above Formula, The Sample Size Obtained Is 23 Pregnant Women Requiring Emergency Obstetric Hysterectomy, At A Confidence Interval Of 95% And 80% Power Of The Study.

Sample size rounded to 30

Inclusion Criteria:

1. All patients who underwent emergency peripartum hysterectomy in a tertiary care centre
2. Patients referred to the tertiary care centre for emergency peripartum hysterectomy
3. All patients referred to the tertiary care centre for further management of emergency peripartum hysterectomy.

Exclusion Criteria:

1. Cases of medical termination of pregnancy with complications requiring emergency obstetric hysterectomy

Sampling method: Convenient sampling methods

Approval for the study:

Written approval from Institutional Ethics committee was obtained beforehand. Written approval of OBGY and other related department was obtained. After obtaining informed verbal consent from all patients coming to our institute during study period according to exclusion and inclusion criteria admitted to OBGY ward of tertiary care centre such cases were included in the study.

Sampling technique: Convenient sampling technique used for data collection. All patients admitted in OBGY ward of tertiary care center from September 2022-May 2024

Methods of Data Collection and Questionnaire- Predesigned and pretested questionnaire was used to record the necessary information. Questionnaires included general information, such as age, sex, Medical history- chief complain, past history, general examination, systemic examination. Menstrual history, Mode of delivery, Risk factors previous LSCS, pre echlampcia, Abnormal placentation, parity, DIC, IUD, HELLP syndrome, Type of hysterectomy, maternal and perinatal morbidity, post operative complications.

Data entry and analysis: The data were entered in Microsoft Excel and data analysis was done by using SPSS demo version no 22 for windows. The analysis was performed by using percentages in frequency tables and $p<0.05$ was considered as level of significance using the Chi-square test.

RESULT AND OBSERVATIONS

The present prospective study was conducted on all patients who underwent

emergency peripartum hysterectomy in a tertiary care centre during study period

Table No.1: Distribution of cases as per age (n=30)

Age (in Years)	Frequency	Percentage
18-25	**07**	**23.34%**
26-34	**11**	**36.66%**
35 and above	**12**	**40%**
Total	**30**	**100%**

Above table shows that, majority of cases were from 35 and above year's age group 12 cases followed by 11 cases found in 26-34 years age group and 07 cases observed in 18-25 years age group

Table No.2: Distribution of cases as per Parity (n=30)

Parity	Frequency	Percentage
Primigravida	09	30%
Multigravida	21	70%
Total	30	100%
Gestational age (weeks)	**Frequency**	**Percentage**
< 28 weeks	01	3.33%
28-34 weeks	12	40%
> 34 weeks	17	56.66%
Total	30	30 (100%)
Mode of Delivery	**Frequency**	**Percentage**
Spontaneous vaginal	04	13.33%
Assisted vaginal	10	33.34%
Cesarean delivery	16	53.33%
Total	30	30 (100%)

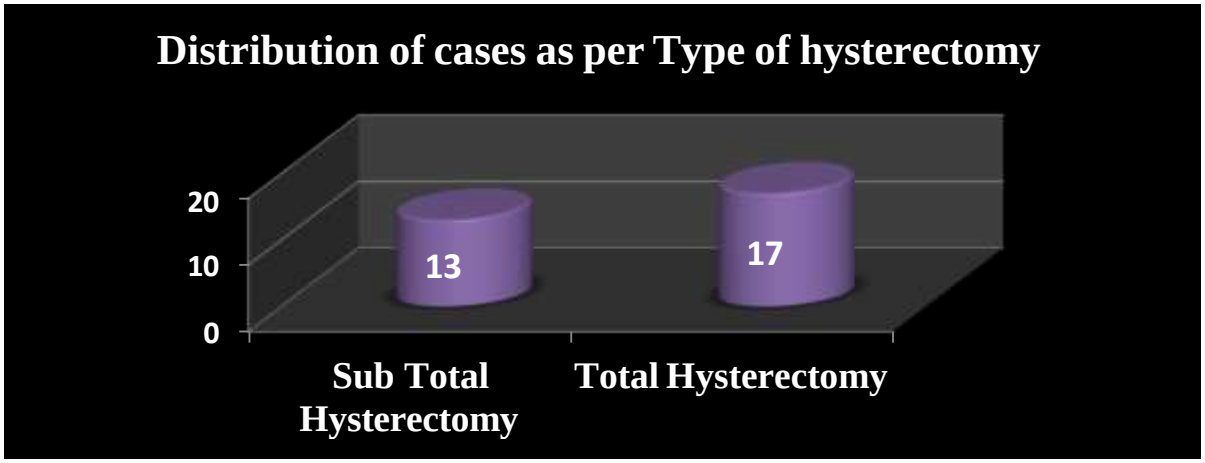
The above table shows most of cases presented with Multigravida 21 cases (70%) and 9 cases Primigravida (30%). majority of cases gestational age was > 34 weeks 17 cases (56.66%), 12 cases found in 28-34 weeks (40%) and 1 case < 28 weeks (3.33%).

Most of cases Mode of delivery were casarean delivery 16 cases (53.33%) Assisted vaginal delivery 10 cases (33.34%) and 4 cases presented with spontaneous vaginal delivery (13.33%).

Table No.3: Distribution of cases as per Risk factors (n=30)

Risk factors	Frequency	Percentage
Uterine Atony	18	60%
Uterine rupture	02	6.66%
Previous cesarean section	08	26.66%
Pre eclampsia	04	13.33%
Placenta previa	07	23.33%
Placenta accreta	05	16.66%

The above table shows majority of cases presented with Uterine atony 18 cases (60%) followed by 8 cases presented with previous LSCS (26.66%), placenta previa found in 7 cases (23.33%), placenta accrete 5 cases (16.66%),pre eclampsia 4 cases (13.33%) and 2 cases found with uterine rupture (6.66%).



The above figure shows Total Hysterectomy done in 17 cases (56.67%) and 13 cases Subtotal hysterectomy (43.33%).

Table No.4: Proportion of Maternal and Perinatal morbidity (n=30)

Maternal and Perinatal morbidity	frequency	percentage
Blood transfusion	22	73.33%
Maternal ICU admission	17	56.66%
Neonatal death	02	6.66%
Neonatal ICU admission	09	30%
Maternal death	01	3.33%
Sepsis	07	23.33%
Re-laporotomy	01	3.33%
DIC	01	3.33%
Urological injury	05	16.66%

The above table shows most of the cases required blood transfusion 22 cases (73.33%), 17 cases admitted in ICU (56.66%), 9 neonates required NICU (30%), 7 cases observed with sepsis (23.33%), 5 cases presented with Urological injury (16.66%), 2 neonatal death (6.66%), 1 maternal death (3.33%), 1 Re-laporotomy (3.33%) and 1case found with DIC (3.33%)

Table No.5: Operative complications

Post operative complications	frequency	percentage
Acute renal failure	02	6.66%
Wound infection	06	20%
Bladder injury	05	16.66%
Septicemia	07	23.33%
Maternal mortality	01	3.33%
DIC	01	3.33%
Haemorrhagic shock	13	43.33%

The above table shows most common operative complication was haemorrhagic shock 13 cases (43.33%) followed by septicemia 7 cases (23.33%), wound infection 6 cases (20%), bladder injury found in 5 cases (16.66%), acute renal failure found in 2 cases (6.66%), DIC 1 case (3.33%) and 1 case Maternal mortality (3.33%).

DISCUSSION

The present prospective study was conducted on all patients who underwent emergency

peripartum hysterectomy in a tertiary care centre during study period.

In current study majority of cases were from 35 and above year's age group 12 cases followed by 11 cases found in 26-34 years age group and 07 cases observed in 18-25 years age group. Similar result found in the study by Tahmina S et al [17] He reported that the majority of cases in 20 to 40 years age group mean 30.25 years. Sharma B et al [18] He revealed that the mean age of women was 28.4 ± 3.8 years. Selo-Ojeme DO et al [19] he reported that the 15 cases of emergency peripartum hysterectomy in 31,079 deliveries, giving a rate of 0.48 per 1,000. Women who had emergency peripartum hysterectomy were significantly older (mean age 37 years vs. 29 years, P<0.001)

In present study most of cases presented with Multigravida 21 cases (70%) and 9 cases Primigravida (30%).Similar finding observed in the study by Tahmina S et al [17] He reported that the Majority (83%) were multiparous women and (17%) were primigravida. Gungorduk K et al [20] he found that the most independent risk factors for emergency hysterectomy were multiparity (odds ratios (OR) 17.3, 95% confidence interval (95% CI) 8.7-34.6). van den Akker T et al [21] He reported that the One hundred twenty-eight studies were selected, including 7,858 women who underwent emergency peripartum hysterectomy, of whom 87% were multiparous and 13% were primigravida. Sharma B et al [18] He found that the maximum cases presented with multigravida 38 cases (95%) and 2 cases were primigravida (5%).

In current study majority of cases gestational age was > 34 weeks 17 cases (56.66%), 12 cases found in 28-34 weeks (40%) and 1 case < 28 weeks (3.33%). Tahmina S et al [17] He reported that the a total of 16,473 deliveries over the study period and peripartum hysterectomy was performed in 12 cases making an incidence of 0.073%. mean gestational age at child birth was 36.70±4.00 weeks.

In current study majority of cases Mode of delivery was cesarean delivery 16 cases (53.33%) Assisted vaginal delivery 10 cases (33.34%) and 4 cases presented with spontaneous vaginal delivery (13.33%). D'Arpe S et al [22] He observed that the Forty-nine EPHs were performed after caesarean delivery (CS) and two after vaginal delivery (p < 0.0001). Tapisiz OL et al [23] He found that the There were 30 cases of EPH among 82,363 deliveries. Nine hysterectomies were performed after vaginal delivery (0.16/1,000 vaginal deliveries) and the remaining 21 hysterectomies were performed after cesarean section (0.78/1,000 cesarean sections).

Machado LS [24] he reported that the incidence of emergency peripartum hysterectomy ranged from 0.24 to 8.7 per 1000 deliveries. Emergency peripartum hysterectomy was found to be more common following cesarean section than vaginal deliveries.

In current study majority of cases presented with Uterine atony 18 cases (60%) followed by 8 cases presented with previous LSCS (26.66%), placenta previa found in 7 cases (23.33%), placenta accrete 5 cases (16.66%),pre eclampsia 4 cases (13.33%) and 2 cases found with uterine rupture (6.66%). Sharma B et al [18] He revealed that the Main indications of peripartum hysterectomies were placenta accreta (60%), atonic postpartum hemorrhage (PPH) (27.5%), and uterine rupture (7.5%).

In current study Total Hysterectomy done in 17 cases (56.67%) and 13 cases Subtotal hysterectomy (43.33%).Tahmina S et al [17] He reported that the About 67% of hysterectomies performed were subtotal hysterectomies and remaining 33% Total Hysterectomy. D'Arpe S et al [22] He observed that the Twenty-three patients (45.1%) underwent total hysterectomy and remaining 28 patients underwent subtotal hysterectomy (54.9%).

Sahin S et al [25] He found that the24 cases (54 %) underwent total hysterectomy, most of which had the diagnosis of abnormal placentation (75 %), whereas subtotal hysterectomy was the choice of management of bleeding in cases with uterine atony (60 %). In present study most of the cases required blood transfusion 22 cases (73.33%), 17 cases admitted in ICU (56.66%), 9 neonates required NICU (30%), 7 cases observed with sepsis (23.33%), 5 cases presented with Urological injury (16.66%), 2 neonatal death (6.66%), 1 maternal death (3.33%), 1 Re-laporotomy (3.33%) and 1case found with DIC (3.33%). Tahmina S et al [17] He reported that the All patients required intensive care and blood transfusion. Two patients did not survive even after hysterectomy.

In current study most common operative complication was haemorrhagic shock 13

cases (43.33%) followed by septicemia 7 cases (23.33%), wound infection 6 cases (20%), bladder injury found in 5 cases (16.66%), acute renal failure found in 2 cases (6.66%), DIC 1 case (3.33%) and 1 case Maternal mortality (3.33%). Sharma B et al [18] He reported that the common maternal complications were febrile morbidity, bladder injury, disseminated intravascular coagulation, and wound infection. There were 4 maternal deaths following emergency peripartum hysterectomy done for atonic PPH. D'Arpe S et al [22] He observed that the51 EPH out of 23,384 deliveries, Maternal morbidity was 25.5% and mortality was 5.9%. Perinatal mortality was 3.9%.

CONCLUSION

Majority of cases were from 35 and above year's age group, Most of cases presented with Multigravida, Majority of cases gestational age was > 34 weeks, most of cases Mode of delivery was cesarean delivery, Most common post operative complication was haemorrhagic shock, Maternal mortality was 3.33%, Neonatal Mortality was 6.66%.

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