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Rising Trend of Peripartum Hysterectomy-Indication and Outcome

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Abstract: ***Background:*** Peripartum hysterectomy is a life-saving surgery performed during or after childbirth when severe bleeding cannot be controlled. Common indications include placenta praevia, uterine atony, and rupture. While essential in emergencies, it carries high risks and affects future fertility and maternal health. ***Methods:*** It was a cross-sectional study conducted in the Department of Obstetrics & Gynaecology, SSMCH between the periods of 1st January 2014 to 31st December 2014. Peripartum hysterectomy was done in 30 cases. Subjects were selected purposively according to the availability of the patients. ***Results:*** In the present study, the highest incidence of peripartum hysterectomy was observed in women aged 30–34 years, with the majority being multiparous (30% were para ≥4). Most patients (60%) had no history of antenatal checkups. Deliveries occurred at terms in 40% of cases, with 26.7% preterm and 33.3% post-term. A third had previous cesarean scars, and 10% had prior myomectomy. The leading indication was placenta praevia (60%), followed by uterine rupture (23.3%) and uterine atony (16.7%). Total hysterectomy was performed in 66.7% of cases. Common maternal complications included anemia (66.7%), hemorrhage (23.3%), UTI (33.3%), bladder injury and paralytic ileus (16.7% each), with a few experiencing ARF, cardiac arrest, coagulopathy, and wound disruption. ***Conclusion:*** Peripartum hysterectomy remains relatively high in developing countries, contributing significantly to maternal and neonatal mortality. Early decision-making, preparedness, and timely intervention are crucial. Improving antenatal care, identifying high-risk cases, enhancing blood transfusion support, and upgrading surgical skills are key to reducing complications and mortality.

Keywords: Peripartum Hysterectomy, Emergency Peripartum Hysterectomy (EPH), Caesarean Hysterectomy.

Original Research Article

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Article at a glance:

Study Purpose: *The purpose of this study is to analyze the increasing incidence of peripartum hysterectomy, a life-saving surgical procedure performed for severe obstetric complications.*

Key findings: *There is a notable rise in the rate of peripartum hysterectomy globally and in many regional settings.*

Newer findings: *Dramatic increase in placenta accreta spectrum disorders as a leading cause, linked to the rising C-section trend.*

Abbreviations: *EPH - Emergency Peripartum Hysterectomy, C/S - Cesarean Section, UTI - Urinary Tract Infection, ARF - Acute Renal Failure, PR - Per Rectum.*

INTRODUCTION

One of the primary causes of maternal morbidity and mortality is postpartum hemorrhage (PPH). Primary and secondary forms are included. The World Health Organisation (WHO) defined the primary PPH as blood loss from the genital tract of 500 ml or more within 24 hours of birth in 1990. This classification is currently in widespread use. Between 24 hours and 12 weeks postnatally, secondary PPH happens. According to WHO estimates, PPH is responsible for around 25% of maternal fatalities globally.[1] Worldwide, postpartum hemorrhage continues to be a major contributor to maternal morbidity and mortality.[2] Although cesarean birth has a lengthy history, very bad consequences are

frequently linked to it. Eduardo Porro, an Italian doctor, was the first to report a successful cesarean hysterectomy to reduce hemorrhage in 1876. When conservative surgery and medicinal treatment fail to control excessive bleeding, emergency peripartum hysterectomy (EPH) is a life-saving technique used in current obstetric practice.[3,4] It covers both hysterectomies after vaginal delivery and a hysterectomy performed via cesarean section. In industrialized nations, the frequency varies from 0.2 to 5 per 1000 deliveries.[3] EPH can save lives, but it also has a high rate of morbidity and death and has a detrimental effect on a woman's ability to conceive in the future. As such, these significant drawbacks must be taken into account when treating.[1] In obstetrics, emergency peripartum hysterectomy continues to be a difficult but life-saving medical surgery. Its indications are becoming more widespread as a hazardous obstetric operation linked to death and morbidity in mothers.[3,4] During the intraoperative and postoperative phases, postpartum hysterectomy is linked to a considerable increase in maternal morbidity and death, making it one of the most serious consequences in obstetrics.[3] In industrialized nations, uterine rupture and atony-related hemorrhage have become uncommon occurrences, but in developing nations, this remains a serious issue.[5] The indications and frequency of Caesarean hysterectomy procedures have experienced significant changes. The majority of cases for which an obstetric cesarean hysterectomy is performed are those that are judged to be severe, potentially fatal, and not responsive to conservative treatment.[6] Uterine rupture accounted for 30% of emergency peripartum hysterectomy cases, with placenta previa (25%) and uterine atony (21%), following closely behind. The majority of cases of burst uteri were sent from rural areas and hospitals after the fact. Slightly higher than our study, Gupta *et al*. reported a 42% rate of uterine rupture in individuals receiving cesarean hysterectomy.[7] In 1983, Strudee and Ruston *et al*. documented that among patients having a cesarean hysterectomy, the rate of uterine rupture was 17.14%, uterine atony was 14.29%, and placenta previa was 48.7%.[8] According to research by Chestnut *et al*., placenta accereta and uterine rupture were the most common reasons for cesarean hysterectomy.[9] Uterine atony (43%) was found to be the most frequent reason for emergency peripartum hysterectomy in the study of Clark *et al*.[10] Nevertheless, placenta accrete accounted for 50% of emergency peripartum hysterectomy cases, with uterine atony coming in second with 21%. This information was discovered subsequently by Stanco *et al*.[11] Zelop *et al*. also discovered that the most frequent reasons for an emergency peripartum hysterectomy were placenta accrete (64%) and uterine atony.[12]

METHODS

This cross-sectional study was carried out in the Department of Obstetrics & Gynaecology, SSMC & Mitford Hospital, Dhaka, Bangladesh for twelve months, starting from 1st January 2014 to 31st December 2014 following approval of the protocol. Peripartum hysterectomy was done in 30 cases. Subjects were selected purposively according to the availability of the patients. Peripartum hysterectomy cases (Intra and postpartum period) were included in the inclusion criteria. Whereas repair of ruptured uterus patients were excluded from the study. A semi-structured questionnaire was used for data collection and collected data were analyzed by using statistical software SPSS version 16.0.

RESULTS

Table 1: Distribution of study population based on baseline characteristics (n=30)

Baseline characteristics of study population	Frequency (n =30)	Percentage (%)
Age group		
15 – 19	1	3.3
20 – 24	3	10.0
25 – 29	7	23.3
30 – 34	10	33.3
>35	9	30.0
Total	30	100
Parity		
0	5	16.7
1	4	13.3
2	6	20
3	6	20
≥4	9	30
Total	30	100
Antenatal care		
Present	12	40
Absent	18	60
Total	30	100
Gestational period at delivery		
Preterm	8	26.7

Term	12	40
Post term	10	33.3
Total	30	100
Previous uterine scar		
Previous caesarean section	10	33.3
Previous myomectomy	3	10
Total	13	43.3

Table 1 shows the distribution of the age group of the patients. Among the patients 1 (3.3%) was in the age group of 15 to 19 years, 3 (10.0%) were in the age group of 20 to 24 years, 7 (23.3%) were in the age group of 25 to 29 years, 10 (33.3%) were in the age group of 30 to 34 years and rest 9 (30.0%) were in the age group of more than 35 years. It also shows the distribution of parity of the patients. Among the patients 5 (16.7%) were primi, 4 (13.3%) were para 1, 6 (20.0%) were para 2, another 6 (20.0%) were para 3 and the rest 9 (30.0%) were para ≥4. The table then shows the distribution of the patients by antenatal check-up. Among the respondents, 12 (40.0%) had a history of antenatal checkups and 18 (60.0%) had not. The distribution of the patients by gestational period at delivery is observed after that. Among the patient's gestational period at delivery, Preterm, Term, and Post-term were 08 (26.7%), 12 (40.0%), and 10 (33.3%) respectively. Besides, among the patients, 10 (33.3%) had previous cesarean section scar, 03 (10.0%) had previous myomectomy scar.

Table 2: Distribution of indications and type of hysterectomy among study population (n=30)

Indications and type of hysterectomy	Frequency (n=30)	Percentage (%)
Indications of hysterectomy		
Ruptured uterus	7	23.3
Uterine atony	5	16.7
Placenta praevia	18	60
Total	30	100
Type of hysterectomy		
Subtotal hysterectomy	10	33.3
Total hysterectomy	20	66.7
Total	30	100

Table 2 shows the distribution of indications of hysterectomy. Among the patients, 07 (23.3%) had ruptured uterus, 5 (16.7%) had uterine atony and 18 (60.0%) had placenta praevia. The table also shows the distribution of types of hysterectomy. Among the patients, 10 (33.3%) had undergone subtotal hysterectomy and 20 (66.7%) had undergone total hysterectomy.

Table 3: Distribution of study population based on complications of peripartum hysterectomy (n=30)

Complications of peripartum hysterectomy	Frequency* (n=30)	Percentage (%)
Intraoperative Complications		
Haemorrhage	7.0	23.3
Bladder injury	5.0	16.7
Ureteric injury	3.0	10.0
Cardiac arrest	3.0	10.0
Postoperative Complications		
Anaemia	20.0	66.7
Haemorrhage	3.0	10.0
UTI	10.0	33.3
Paralytic ileus	5.0	16.7
Coagulopathy	3.0	10.0
ARF	1.0	3.3
Wound disruption	5.0	16.7
Maternal mortality	8.0	26.7

*Multiple responses

Table 3 shows the distribution of complications of peripartum hysterectomy. Main maternal complications were anemia 20 (66.7), hemorrhage 7 (23.3), bladder injury 5 (16.7), paralytic ileus 05 (16.7), and UTI 10 (33.3%). Other maternal morbidities were ARF, cardiac arrest, coagulopathy, and wound disruption were 1 (3.3%), 3 (10.0%), 3 (10%), and 5(16.7%) respectively.

DISCUSSION

In this study, 3.3% of patients were in the age group of 15 to 19 years, and 33.3% were in the age group of 30 to 34 years which was the maximum number. Mesbah et al. in their study reported the mean age of the patients was 36.4 ± 8.9 years.[13] A study by Ibrahim *et al*. also shows that the mean age was 31 years and the peak incidence was in the 33 – 37 age group where n=30 with 46.66%.[3] In the present study among the patients 16.7% were primi, 13.3% were para 1, 20.0% were para 2, another 20.0% were para 3 and the rest 30.0% were para ≥4. Mesbah *et al*. in their study reported the parity of the patients was 2.9± 1.56.[13] A study by Yalinkaya et al. reported the mean age was 34.19 ± 6.04 years (age range, 21–49 years) and parity was 5.58 ± 3.04 (0–15 years).[14] Therefore, among the respondents only 40.0% had a history of antenatal checkup and the rest of 60.0% did not have any history of antenatal checkup. While considering the gestational period at delivery among the patients, Term and Post-term were 26.7%, 40.0%, and 33.3% respectively. The present study shows only 33.3% of patients had a previous cesarean scar, and 10.0% had a previous myomectomy scar. Similarly, a study by Mesbah *et al*. reported 86.2% had a history of previous cesarean deliveries meanwhile the others 13.8% had vaginal deliveries.[13] Yalinkaya *et al*. in their study reported that out of 140 cases, 90 were delivered by cesarean section and 50 were vaginally delivered.[14] Both of these studies indicate a higher percentage of cesarean deliveries. The current study showed that 23.3% of patients had ruptured uterus, 16.7% had uterine atony and 60.0% had placenta praevia. The most frequent indication for peripartum hysterectomy was observed by a study by Mesbah *et al*. where postpartum hemorrhage-associated morbid adherence of the placenta was 37.9% followed by ruptured uterus and uterine atony 24.1% in both groups.[13] Hence, among all the 30 study patients only 33.3% had undergone subtotal hysterectomy and 66.7% had undergone total hysterectomy.

A similar result was also found in Mesbah *et al*.'s study where subtotal hysterectomy was the most performed surgery in their study 79.3%.[13] Intraoperative complications in the present study were anemia, hemorrhage, bladder injury, paralytic ileus, and UTI followed by 66.7%, 33.3%, 16.7%, and 33.3% respectively. Other postoperative complications were ARF, cardiac arrest, coagulopathy, and wound disruption were 3.3%, 10.0%, 10.0%, and 16.7% respectively. Mesbah *et al*. reported that peripartum hysterectomy is well known to be associated with severe blood loss, risk of transfusion, intra-operative complications, and significant postoperative morbidity and mortality.[13-24] Tallab and Helewa, *et al*., in their study reported that the indications for hysterectomy were: hemorrhage due to placenta accreta (n=9); uterine atony (n=6); uterine rupture (n=5); retroperitoneal hematoma (n=2); and cervical laceration (n=1). Two cases were performed electively for cervical and ovarian cancer, respectively and about twenty-three women required blood transfusion, five had coagulopathy, four had bladder injuries, and three required salpingo-oophorectomy for uncontrolled adnexal bleeding.[15]

Limitations of the Study

The study place was selected purposively and the respondents, those interviewed, attended a particular department of a specific hospital. However, due to time constraints, small sample size also a limitation of the study. So, the results may not represent the whole community.

CONCLUSION

The Peripartum hysterectomy is mostly found among multiparous women and placenta praevia was the commonest indication (18 cases, 60.0%). The process was associated with significant maternal mortality and morbidity. The mortality in this study was 26.7%. In developing countries, peripartum hysterectomy is still relatively high and this represents a significant burden increasing maternal and neonatal mortality. More attention is needed, and the obstetrician should be ready to perform peripartum hysterectomy. Early decisions should save blood and prevent complications. Surgeons should always remember that "timing is critical to an optimal outcome: hysterectomy should not be performed too early or too late".

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Authors' contributions

BRR, AR: Concept and design, data acquisition, interpretation and drafting. KB and NJK: Data acquisition, interpretation, drafting, final approval and agree to be accountable for all aspects of the work.

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