

Maternal Outcome of Emergency Obstetrics Hysterectomy

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Abstract: **Background:** Emergency obstetric hysterectomy (EOH) is a life-saving surgical procedure used to manage severe maternal morbidity and mortality during childbirth, involving the removal of the uterus in critical situations where other measures fail. However, research on EOH's specific maternal outcomes is limited. **Method:** It was a Retrospective Observational study conducted among 60 study subjects who attended OPD in department Obstetrics and Gynecology, in a tertiary healthcare teaching hospital. All of them were examined and their clinical, demographic, past medical and surgical information was filled in the predesigned, semi-structured, pre-validated case record proforma after getting their written informed consent. The study subjects were examined for their general and systemic examination parameters. **Results:** The study involved 31.46-year-olds with 65% booked at the current center and 13.33% unbooked pregnancies. The majority of subjects had parity 5 or above, with 26.67% being Grand multipara. Emergency obstetric hysterectomy was common for rupture uterus (40.00%) and atonic PPH (31.67%). Causes of rupture uterus included previous LSCS and obstructed labor (33.33%). Subtotal hysterectomy was the most common procedure (71.67%). Morbidities included fever (47.33%), wound infection (11.77%), paralytic ileus (3.33%), maternal death (10.00%), endotoxic shock (50%), DIC (33.33%), and sepsis (16.67%). **Conclusion:** Studying maternal outcomes after emergency obstetric hysterectomy is crucial for understanding the procedure's effectiveness, safety, potential complications, psychological impact, and long-term health outcomes. This knowledge can inform clinical decision-making, improve patient care, and improve the overall well-being of women undergoing EOH.

Keywords: Retrospective Studies, Postpartum Hemorrhage, Cesarean Section, Maternal Mortality, Hysterectomy

1. Introduction

Emergency obstetric hysterectomy (EOH) is a rare but life-saving surgical procedure performed as a last resort to manage severe maternal morbidity and mortality during childbirth. It involves the removal of the uterus in critical situations where other measures fail to control obstetric hemorrhage or when there are other life-threatening complications. Despite its significance, there is limited research focusing on the specific maternal outcomes associated with EOH. This introduction aims to provide an overview of the importance of studying maternal outcomes following emergency obstetric hysterectomy and highlights the potential implications for clinical practice.¹⁻²

EOH is a complex and challenging procedure that is typically performed in emergency situations. The decision to proceed with EOH is often made when alternative measures, such as uterine artery embolization or conservative surgical techniques, have been unsuccessful or are not feasible. Consequently, EOH is associated with high-risk conditions, including placenta accreta, uterine rupture, intractable bleeding, or invasive malignancies.³⁻⁴

Understanding the maternal outcomes following EOH is of utmost importance for several reasons. Firstly, it enables healthcare professionals to assess the efficacy and safety of the procedure in terms of preventing maternal mortality. EOH serves as a critical intervention when all other options have been exhausted, and gaining insights into its outcomes

can help determine its effectiveness in saving women's lives.⁵

Secondly, studying maternal outcomes following EOH allows for the identification of potential complications associated with the procedure. Intraoperative complications, such as organ injuries, excessive blood loss, or difficulties due to adhesions, can have significant implications for the immediate and long-term health of the mother. Postoperative complications, including hemorrhage, infection, thromboembolism, and wound-related issues, also need to be assessed to improve patient care and reduce morbidity.⁶

Moreover, examining the psychological impact of EOH on women is crucial. The loss of fertility due to the removal of the uterus can be emotionally distressing for women and may have long-lasting psychological consequences. Understanding the psychological outcomes following EOH can inform the provision of appropriate emotional support and counseling for affected women, promoting their overall well-being and recovery.⁷

Furthermore, studying the long-term implications of EOH is essential. The removal of the uterus not only impacts fertility but also may have implications for hormonal balance, sexual function, and overall quality of life. Investigating these long-term outcomes can guide healthcare providers in addressing the specific needs of women who have undergone EOH and help develop strategies to optimize their long-term health and well-being.⁸⁻⁹

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Despite the critical role EOH plays in saving lives during obstetric emergencies, there is a paucity of comprehensive studies focusing specifically on maternal outcomes associated with the procedure. The limited research in this area necessitates further investigation to bridge the knowledge gap and provide evidence-based guidelines for clinical practice.¹⁰

Hence the present study is conducted to find incidence of obstetrical hemorrhage and to study the outcome of women undergoing obstetrical hemorrhage among patients undergoing Emergency obstetric hysterectomy.

2. Material and Methods

The retrospective observational study was conducted in Department of Obstetrics and Gynecology, in a tertiary healthcare teaching hospital. The study duration was 8 months. In the study total 60 patients were included as per inclusion and exclusion criteria.

Inclusion Criteria:

- 1) The patients who underwent Emergency obstetric hysterectomy
- 2) Patients willing to participate in the given study

Exclusion Criteria

- 1) Cervical Cancer
- 2) Endometrial Cancer
- 3) Uterine prolapse.

Detailed Methodology

It was a Retrospective Observational study conducted among 60 study subjects who attended OPD in department Obstetrics and Gynecology, in a tertiary healthcare teaching hospital. All of them were examined and their clinical, demographic, past medical and surgical information was filled in the predesigned, semi-structured, pre-validated case record proforma after getting their written informed consent. The study subjects were examined for their general and systemic examination parameters. Findings were noted in the case record proforma. Details of intraoperative complications was obtained from the operation notes. Total preoperative, intraoperative and postoperative blood loss and blood transfusions were calculated. Maternal mortality, preoperative and postoperative complications and morbidity were used as indicators of maternal outcome.

All the data was entered using MS Excel software. The data was analysed using SPSS version 22 software.

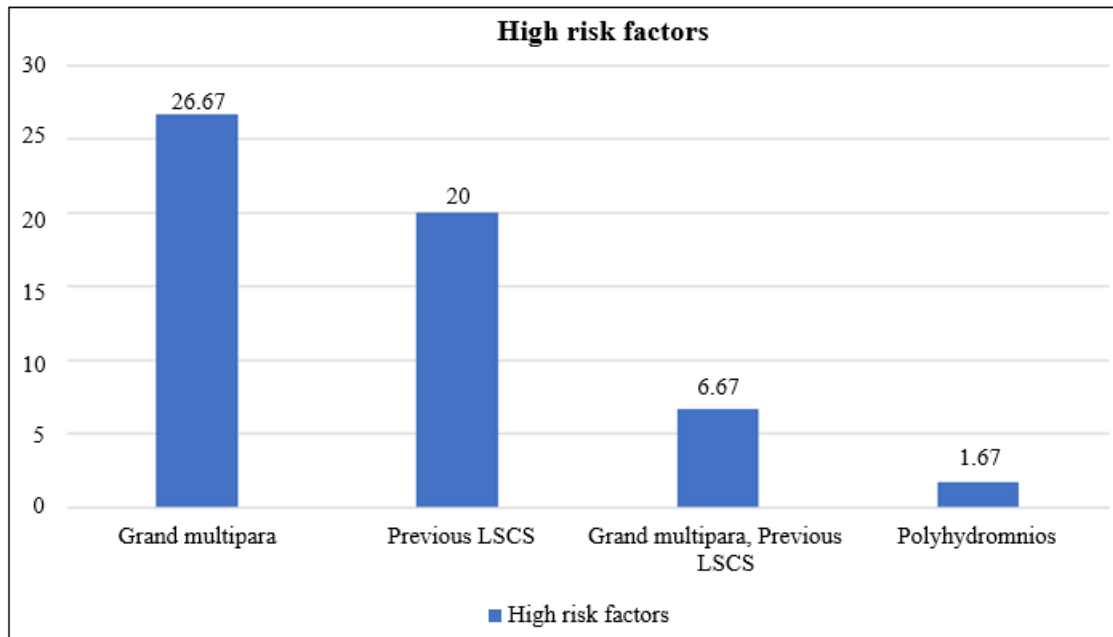
Descriptive Statistics like Mean, Standard Deviation, Range and proportion were calculated. Any associations between clinical, laboratory and radiological factors and outcome of the treatment were studied. The obtained data was presented on tables and diagram whenever necessary. Observations with p-values less than 0.05 were considered to be statistically significant.

3. Observations and Results

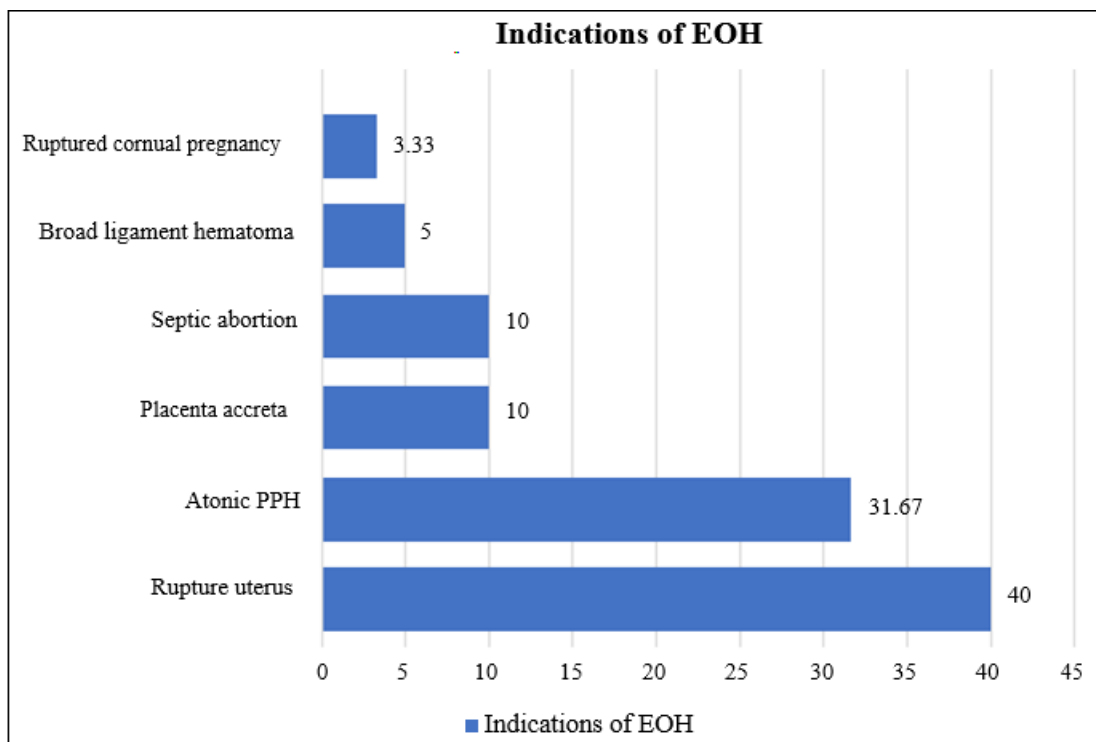
- In the present study we assessed Age distribution among the study subjects. We observed that majority of the subjects belonged to the age group of 31 to 35 years (38.33%), followed by 26 to 30 years (31.67%), and more than 35 years (21.67%). The mean age of the study subjects was 31.46 years.
- In the present study we assessed Booking status among the study subjects. We observed that majority of the subjects were booked at the current study center (65%), whereas 21.67% were booked at other centers, and 13.33% were unbooked pregnancies.
- In the present study we assessed Parity among the study subjects. We observed that majority of the study subjects presented with parity 5 and above (26.67%), followed by parity 4 (23.33%), parity 2 and 3 among 21.67% subjects each.

Parameter		Number of subjects	Percentage
Age distribution	Less than 20 years	2	3.33
	21 to 25 years	3	5
	26 to 30 years	19	31.67
	31 to 35 years	23	38.33
	More than 35 years	13	21.67
Booking status	Booked at our center	39	65
	Booked elsewhere	13	21.67
	Unbooked	8	13.33
Parity	1	4	6.67
	2	13	21.67
	3	13	21.67
	4	14	23.33
	5 and above	16	26.67
Total		60	100%

- In the present study we assessed High risk factors among the study subjects. We observed that 26.67% subjects were Grand multipara, 20% had Previous LSCS, 6.67% had both Grand multipara, Previous LSCS, while 1.67% had Polyhydromnios.

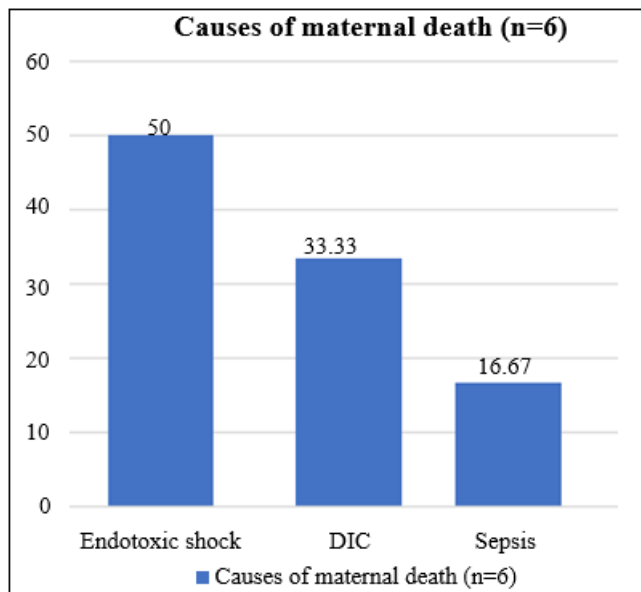


- In the present study we assessed Indications of EOH among the study subjects. We observed that Rupture uterus (40.00%) and Atonic PPH (31.67%) were the commonest indications for emergency obstetric hysterectomy, followed by Placenta accreta among 10.00% study subjects, Septic abortion among 10.00 % study subjects, Broad ligament hematoma among 5.00 % study subjects, Ruptured cornual pregnancy among 3.33 % study subjects.



- In the present study we assessed Causes of rupture uterus among the study subjects. We observed that Previous LSCS (37.5%) and Obstructed labour (33.33%) were the commonest causes of rupture of uterus, followed by traumatic cause (16.67%), and Previous repair of rupture uterus (12.5%).
- In the present study we assessed Type of hysterectomy performed among the study subjects. We observed that Subtotal hysterectomy was the commonest procedure conducted among 71.67% study subjects, while Total hysterectomy was performed among 28.33% subjects.
- In the present study we assessed Maternal outcomes among the study subjects. We observed that Fever was the commonest morbidity reported among 48.33 % study subjects, Wound infection was noted among 11.67 % study subjects, Paralytic ileus was noted among 3.33 % study subjects, Maternal death was reported among 10.00% study subjects. In the present study we assessed the blood loss during the surgical procedure. We observed that the mean loss of blood was 4123.41 +/- 1981.07 ml (range: 1230 ml- 8540 ml). Majority of the blood loss occurred among atonic PPH cases.

- In the present study we assessed Causes of maternal deaths among the study subjects. We observed that endotoxic shock was noted among 50% of maternal deaths, while DIC was reported among 33.33%, and sepsis was noted among 16.67% of maternal deaths.



4. Discussion

Emergency peripartum hysterectomy (EPH) is a crucial surgical procedure for life-threatening hemorrhage during or after childbirth. Despite advancements in medicine and surgery, postpartum hemorrhage remains the leading cause of maternal morbidity and mortality. EPH is performed when conservative measures fail to achieve hemostasis in the presence of life-threatening bleeding. The urgency of the surgery and the need for prompt action add to the complexity of the situation. The primary indications for EPH are placenta previa/accreta and uterine atony.

Healthcare providers must be vigilant in recognizing and managing potential risk factors for postpartum hemorrhage, such as placenta previa/accreta and uterine atony. Early recognition, close monitoring, and timely intervention are key to preventing or managing life-threatening hemorrhage.

Studies from Asia and Africa have reported higher rates of EPH, ranging from 2.5 to 5.4 per 1000 deliveries, while lower rates have been reported in North America, Central Europe, and the Middle East. Factors contributing to the similarity between EPH incidence in developed countries include good antenatal services, efficient transport and blood bank services, high healthcare system accountability, and patients' reluctance to consent to hysterectomy unless absolutely necessary.

In the present study we assessed Age distribution among the study subjects. We observed that majority of the subjects belonged to the age group of 31 to 35 years (38.33%), followed by 26 to 30 years (31.67%), and more than 35 years (21.67%). The mean age of the study subjects was 31.46 years. Zia S et al.,¹¹ in their study observed that the mean age of the patients was 35.03 ± 5.9 years (range 21-

47) years. Similar trend was observed by Rabiou et al.,¹² and Tebeu et al.,¹³

In the present study we assessed Parity among the study subjects. We observed that majority of the study subjects presented with parity 5 and above (26.67%), followed by parity 4 (23.33%), parity 2 and 3 among 21.67% subjects each. Zia S et al.,¹¹ in their study observed that mean parity among the study subjects was 4.8 ± 2.8 (range: 0-13)

Contemporary data suggest that the vast majority of EPH occurs emergently in the setting of an invasive or abnormally located placentation or uterine atony. In the present study we assessed Indications of EOH among the study subjects. We observed that Rupture uterus (40.00%) and Atonic PPH (31.67%) were the commonest indications for emergency obstetric hysterectomy, followed by Placenta accreta among 10.00% study subjects, Septic abortion among 10.00 % study subjects, Broad ligament hematoma among 5.00 % study subjects, Ruptured cornual pregnancy among 3.33 % study subjects. Zia S et al.,¹¹ in their study observed that the indication of all hysterectomies was uncontrolled postpartum hemorrhage, out of 57 patients, 50 (87.7%) had previous history of CS. Placental abnormalities 63.1% (placenta previa type IV and morbidly adherent placenta) and uterine atony 24.5% where the most common causes of EPH. Similar results were observed by Bhat et al.,¹⁵ and Najam R et al.¹⁵

In the present study we assessed Causes of rupture uterus among the study subjects. We observed that Previous LSCS (37.5%) and Obstructed labour (33.33%) were the commonest causes of rupture of uterus, followed by traumatic cause (16.67%), and Previous repair of rupture uterus (12.5%). Similar results were observed by Najam R et al.,¹⁵

In the present study we assessed Type of hysterectomy performed among the study subjects. We observed that Subtotal hysterectomy was the commonest procedure conducted among 71.67% study subjects, while Total hysterectomy was performed among 28.33% subjects. Zia S et al.,¹¹ in their study observed that Majority 50 (87.7%) of the patients had subtotal while 7 (12.2%) had total hysterectomy. All the hysterectomies were performed by senior most consultant obstetrician on duty.

In the present study we assessed the blood loss during the surgical procedure. We observed that the mean loss of blood was 4123.41 ± 1981.07 ml (range: 1230 ml - 8540 ml). Majority of the blood loss occurred among atonic PPH cases. Zia S et al.,¹¹ in their study observed that average blood loss ranged 1000 to 8000 ml with a mean 2591 ± 1143 ml.

In the present study we assessed Maternal outcomes among the study subjects. We observed that Fever was the commonest morbidity reported among 48.33 % study subjects, Wound infection was noted among 11.67 % study subjects, Paralytic ileus was noted among 3.33 % study subjects, Maternal death was reported among 10.00% study subjects. Similar results were observed by Bhat et al.,¹⁴ and Najam R et al.,¹⁵

In the present study we assessed Causes of maternal deaths among the study subjects.

We observed that endotoxic shock was noted among 50% of maternal deaths, while DIC was reported among 33.33%, and sepsis was noted among 16.67% of maternal deaths.

5. Conclusion

In conclusion, studying the maternal outcomes following emergency obstetric hysterectomy is crucial for understanding the effectiveness and safety of the procedure, identifying potential complications, addressing the psychological impact on women, and optimizing long-term health outcomes. Enhancing our understanding of these outcomes can inform clinical decision making, improve patient care, and enhance the overall well-being of women who undergo EOH.

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