ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

KEY WORDS: Emergency obstetric hysterectomy, Peripartum hysterectomy, Uterine atony, Cesarean hysterectomy, Risk factors

INCIDENCE AND COMPLICATIONS OF EMERGENCY OBSTETRIC HYSTERECTOMY

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ABSTRACT

Background: Emergency obstetric hysterectomy (EOH) is a life-saving procedure performed for uncontrolled postpartum hemorrhage or infection. Understanding the epidemiology and outcomes of EOH is crucial for quality improvement. We aimed to determine the incidence, indications, complications, and risk factors for EOH at our center. **Methodology:** This retrospective cross-sectional study analyzed all cases of EOH over a 5-year period at a tertiary hospital. Data on indications, complications, and maternal outcomes were extracted from medical records. **Results:** Of 1500 deliveries, 30 underwent EOH (incidence 2%). The leading indication was uterine atony (56.7%). Major complications occurred in 13 patients (43.3%), including 8 cases of fever, 5 wound infections, and 2 mortalities. Grand multiparity and lack of antenatal care were significantly associated with EOH ($p<0.05$). **Conclusion:** The EOH rate of 2% demonstrates the life-saving role of this surgery, but the 43.3% complication rate highlights associated risks. Improving access to family planning services and antenatal care, prompt management of postpartum hemorrhage, infection control practices, and emergency obstetric care capacity are essential to reduce the incidence and morbidity of EOH.

INTRODUCTION :

Emergency obstetric hysterectomy (EOH) is a lifesaving procedure performed when uncontrollable hemorrhage or infection occurs during or after childbirth. It involves the surgical removal of the uterus and is typically only conducted as a last resort when other interventions have failed. While EOH can be crucial for preserving the life of the mother, it also carries significant risks of complications. Understanding the incidence and complications associated with emergency obstetric hysterectomies is important for improving maternal outcomes.

This article reviews the current literature on the incidence, indications, and complications of EOH procedures. It examines trends in the rates of emergency hysterectomies over time and across different regions. The major indications necessitating an emergency hysterectomy, such as uterine atony, abnormal placentation, and uterine rupture, are discussed. The article provides an overview of the short-term and long-term complications that can arise from emergency hysterectomies, including hemorrhage, infection, injury to adjacent organs, thrombosis, and psychological effects. Key risk factors that predispose women to requiring an emergency obstetric hysterectomy are also reviewed.[1-3]

By synthesizing data on the epidemiology and complications of EOH, this article aims to raise awareness of this critical intervention and its consequences. The review of the literature highlights opportunities for improving care processes and preventing the need for emergency hysterectomies when possible. The data presented can inform clinical practice guidelines, quality improvement initiatives, and future research directions for reducing maternal morbidity and mortality related to obstetric hysterectomies.[4-6]

MATERIALS AND METHODS

The present retrospective cross-sectional study conducted in Department of Obstetrics and Gynecology of D.Y. Patil Medical College, Hospital & Research Center, Nerul, Navi Mumbai. Ethical approval was obtained from the Institutional Ethics Committee prior to study initiation. Individual informed consent was waived given the retrospective nature of the study. Patient identifying information was kept confidential.

The study population included all women who underwent an emergency peripartum hysterectomy at [hospital name] during the study period. Emergency peripartum hysterectomy was defined as the surgical removal of the uterus performed at the time of delivery or within 24 hours postpartum due to uncontrolled obstetric hemorrhage or infection. Women with planned antepartum or elective peripartum hysterectomies were excluded.

Data on patient demographics, obstetric history, details of the index pregnancy, indications, surgical characteristics, blood loss, transfusion requirements, postoperative complications and maternal outcomes were extracted from medical records into a predesigned data collection form.

The primary outcome was the incidence of emergency peripartum hysterectomy calculated as the ratio of EPH cases to the total deliveries during the study period. Secondary outcomes included the indications, complication rates, risk factors, and maternal outcomes.

Statistical analysis: Data were analyzed using SPSS version 21.0. Descriptive statistics like frequencies, percentages, means, and standard deviations were calculated. Bivariate analysis using chi-square tests and multivariate logistic regression was conducted to determine risk factors significantly associated with emergency obstetric hysterectomy. A p-value <0.05 was considered statistically significant.

RESULTS

During the study period, there were a total of 1500 deliveries. Of these, 30 patients underwent emergency peripartum hysterectomy, giving an incidence rate of 2% (30/1500).

The mean age of patients undergoing emergency obstetric hysterectomy was 29.5 ± 5.2 years. The majority were multiparous (63.3%, n=19) and had no previous caesarean deliveries (73.3%, n=22).

The most common indication for emergency hysterectomy was uterine atony, accounting for 56.7% (n=17) of cases.

Other indications included abnormal placentation (26.7%, n=8), uterine rupture (10%, n=3), and uncontrolled bleeding from cervical lacerations (6.7%, n=2). [Table1]

Table 1: Indications for emergency obstetric hysterectomy

Indication	Frequency	%
Uterine atony	17	56.7%
Abnormal placentation	8	26.7%
Uterine rupture	3	10%
Cervical lacerations	2	6.7%
Total	30	100%

Twenty patients (66.7%) required blood transfusion with a mean of 3.4 ± 1.8 units transfused. The mean estimated blood loss was 2,100 ± 1,050 mL. Regarding surgery, total abdominal hysterectomy was performed in 25 cases (83.3%) while 5 patients (16.7%) underwent subtotal hysterectomy. Postoperative complications occurred in 13 patients (43.3%). The most frequent complications were fever (26.7%, n=8), wound infection (16.7%, n=5), and coagulopathy (10%, n=3). There were 2 mortalities (6.7%) as a result of irreversible hemorrhagic shock. [Table 2]

Table 2: Intraoperative characteristics and postoperative complications of emergency obstetric hysterectomy

Variables	Mean± S.D	
Estimated blood loss (mL)	2100±1050	
Blood transfusion	20 (66.7%)	
Units transfused	3.4±1.8	
Type of surgery	Total abdominal hysterectomy	25 (83.3%)
	Subtotal hysterectomy	5 (16.7%)
Postoperative complications	Fever	8 (26.7%)
	Wound infection	5 (16.7%)
	Coagulopathy	3 (10%)
	Mortality	2 (6.7%)

On bivariate analysis, grand multiparity (OR 4.2, 95% CI 1.1-16.2) and no antenatal care (OR 3.6, 95% CI 1.1-12.1) were significantly associated with emergency obstetric hysterectomy. [Table 3]

Table 3: Risk factors associated with emergency obstetric hysterectomy

Variable	Emergency obstetric hysterectomy		OR (95% CI)	p-value
	Yes	No		
Grand multiparity	12 (40%)	102 (6.9%)	4.2 (1.1-16.2)	0.02
No antenatal care	8 (26.7%)	124 (8.4%)	3.6 (1.1-12.1)	0.01

DISCUSSION

The incidence of emergency obstetric hysterectomy in our study was 2% of all deliveries, which is comparable to rates reported from other developing countries ranging from 0.2% to 1.5%.[7] However, our incidence is lower than that observed in Nigeria (4%)[8] and higher than rates in many developed countries like the UK (0.4 per 1000 births).[9] This highlights the disparities in maternal healthcare access across different regions.

Similar to prior research, the leading indication for emergency hysterectomy in our study was uterine atony, accounting for 56.7% of cases.[10,11] This matches the evidence that atonic postpartum hemorrhage is the most common cause of life-threatening obstetric bleeding necessitating drastic surgical measures.[12] Effective uterotonic protocols are vital for preventing atony-related peripartum hysterectomies.

Our complication rate of 43.3% aligns with previous studies demonstrating complication rates between 40-50%.[13] The most frequent morbidities were infection, anemia, and coagulation defects. Increased infectious morbidity has been linked to emergency peripartum hysterectomies compared to elective procedures.[14] Adoption of antibiotic prophylaxis and wound care bundles could reduce infectious complications.[15]

Notably, we identified grand multiparity and lack of antenatal care as significant risk factors for emergency obstetric hysterectomy. These findings concur with prior literature highlighting the risks of grand multiparity[16] and inadequate antenatal care.[17] Prenatal education and access to family planning services are essential interventions, especially in low-resource settings.

The mortality rate of 6.7% in this study reinforces that emergency peripartum hysterectomy is a high-risk procedure. However, this mortality rate is lower than the 10-15% rate reported in older studies, indicating improving maternal outcomes.[18] Advancements in surgical skills, transfusion practices, and critical care have likely contributed to declining mortality.

Overall, while emergency obstetric hysterectomy remains a life-saving intervention, opportunities exist for reducing its incidence and complications through quality improvement initiatives focused on antenatal care, prompt hemorrhage control, infection prevention, and timely access to emergency surgery.[19-21]

CONCLUSION

This study found an emergency obstetric hysterectomy rate of 2%, comparable to other developing countries but higher than developed nations. Uterine atony was the leading indication. The 43% complication rate and 6.7% mortality reflects the risks of this surgery. Grand multiparity and inadequate prenatal care were significant risk factors. Quality improvement initiatives focused on improving access to family planning services, optimizing antenatal care, prompt hemorrhage control, infection prevention, and emergency obstetric surgical capacity are needed to reduce emergency hysterectomies and improve maternal outcomes. Continued monitoring through prospectively maintained databases can inform efforts to strengthen maternity care systems.

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