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A retrospective study on emergency obstetric hysterectomy in a tertiary care teaching hospital.

Sucheta Biswas 1, Debasish Char 2

1. Associate Professor, Department of Physiology, Prafulla Chandra Sen Government Medical College & Hospital, Arambagh, Hooghly, West Bengal.
2. Assistant Professor, Department of Obstetrics & Gynaecology, NRS Medical College, Kolkata.
2. Corresponding author: Dr Debasish Char, Email Id: debasishchar@gmail.com

Abstract

Objectives

To determine the incidence,demographic characteristics,indications and maternal complications associated with emergency obstetric hysterectomy in a tertiary care hospital.

Methods

This retrospective,observational,analytical study was conducted over a span of one year,from 1st August 2022 to 31st July 2023 in the department of Obstetrics and Gynaecology at NRS Medical College and Hospital,Kolkata. Each patient record was analysed with respect to age,antenatal booking status,parity,gestational age,indication,type of hysterectomy,mode of delivery and maternal complications.

Results

Out of the 6491 deliveries conducted in the hospital during the mentioned period,18 patients underwent emergency obstetric hysterectomy giving an incidence of 2.7 per 1000 deliveries (0.27%). Maximum patients (38.9%) belonged to 26-30 years age group .94.5% cases were multiparous. The most common indication for obstetric emergency hysterectomy was atonic uterus(33.3%),followed by morbidly adherent placenta(27.8%) and placenta previa in 22.2% cases. 44.4% patients undergoing obstetric hysterectomy had undergone vaginal delivery while 55.6% had underwent caesarean section. Emergency obstetric hysterectomy was associated with complications such as wound sepsis(11.1%),blood transfusion(100%),need for ionotropes support(27.8%),DIC (11.1%) and maternal mortality(11.1%).

Conclusion

Emergency obstetric hysterectomy can prove to be a life saving procedure when other modalities of management fail or are unavailable. Increasing rates of caesarean section and multiple pregnancies,could increase the incidence of obstetric hysterectomy in the future.

Keywords: Obstetric Hysterectomy, Caesarean Section, Maternal Mortality.

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Introduction

Emergency obstetric hysterectomy(EOH) is defined as removal of the uterus either at the time of caesarean section or following vaginal delivery or within the puerperium period.[1] Incase of life-threatening, uncontrollable obstetric haemorrhage not responding to medical management or conservative surgical techniques,it is a life-saving last resort available to an obstetrician.

Worldwide incidence of Obstetric hysterectomy ranges from 0.64 to 5.09 per 1000 deliveries[2,3,4]. As per the data on maternal mortality published by UNICEF in February 2023,haemorrhage is the leading cause of maternal death accounting for 27% of the deaths[5].

The major risk factors that contribute to PPH are uterine atony,prolonged third phase of labor, retained placenta, maternal age of above 35 years, gestational age below 37 weeks or above 41 weeks, pregnancy-induced hypertension, anemia, previous history of PPH, uterine rupture, abruptio placenta, placenta previa[6,7].

Conservative measures such as uterotonic drugs (oxytocin infusion, ergometine derivatives, PGF2 alpha, Misoprostol) or Surgical methods including uterine artery ligation, hemostatic B lynch sutures or internal iliac ligation can be used to manage postpartum haemorrhage[8,9].Advances in interventional radiology have also provided the option of uterine artery embolization[10]. When the above measures fail or are unavailable,obstetric hysterectomy is often the last recourse available.

This study was conducted to identify the incidence, indication and complications of emergency obstetric hysterectomy in a tertiary care teaching hospital in West Bengal.

Methods

This retrospective study was conducted over a span of one year,from 1st August 2022 to 31st July 2023 in the department of Obstetrics and Gynaecology at NRS Medical College and Hospital,Kolkata after Institutional Ethics Committee clearance.

Inclusion criteria included all women who delivered in NRSMCH between August 2022 and July 2023 and underwent hysterectomy for obstetric indications either at the time of delivery or within 42 days postpartum. Women who delivered elsewhere and were later referred for obstetric complications requiring hysterectomy within 6 weeks of delivery were also included in the study. Women who underwent hysterectomy for non-obstetric indications or beyond 42 days post-delivery were excluded.

Detailed case history and relevant data was collected from operation theatre records and hospital files. Each patient record was analysed with respect to age,antenatal booking status,parity,gestational age,indication,type of hysterectomy,mode of delivery,maternal complications and outcome. For descriptive statistics SPSS software was applied after entering the data into a predesigned proforma.

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Results

Out of the 6491 deliveries conducted in the hospital during the mentioned period,2889 patients delivered vaginally while 3602 patients underwent caesarean section.18 patients out of these underwent emergency obstetric hysterectomy,4 of whom had vaginal delivery,12 caesarean section and 2 hysterotomy. The incidence of obstetric hysterectomy in our study was found to be 0.27% (2.7 per 1000 deliveries).

Table 1: Age distribution and antenatal booking status

Age (in years)	Antenatal booking		Number	Percentage (%)
	Booked	Unbooked		
<21	0	2	2	11.1
21-25	1	4	5	27.8
26-30	5	2	7	38.9
31-35	0	2	2	11.1
>35	1	1	2	11.1

The youngest patient to undergo obstetric hysterectomy was 20 years old while the oldest was 42 years. Maximum patients which is 38.9% belonged to 26-30 years age group and the mean age was 26.4 years.38.9% patients were booked at an antenatal clinic while 61.1% were unbooked.

Table 2: Parity distribution

Parity	Number	Percentage (%)
Primigravida	1	5.5
Para 2	5	27.8
Para 3	7	38.9
Para 4	3	16.7
Grand multipara	2	11.1

94.5% cases were multiparous while only one patient was primiparous.

Table 3: Gestational age

Gestational age	Number	Percentage (%)
<28 weeks	2	11.1
28 weeks-33 weeks+6 days	3	16.7
34 weeks-37 weeks+6 days	7	38.9
>38 weeks	6	33.3

38.9% patients had gestational age between 34 weeks and 37 weeks 6 days. Majority of the patients, that is 55.5% were at term.

Table 4: Indications of EOH

Indication	Number	Percentage (%)
Atonic PPH	6	33.3
Traumatic PPH	1	5.6
Morbidly adherent placenta	5	27.8

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Placenta previa	4	22.2
Uterine rupture	2	11.1

The most common indication for emergency obstetric hysterectomy was atonic uterus (33.3%),followed by morbidly adherent placenta(27.8%) and placenta previa in 22.2% cases. Atonic uterus was associated with previous caesarean section in 2 cases and with multiple pregnancy,polyhydramnios,obstructed labour and fibroid uterus in 1 case each. Women undergoing obstetric hysterectomy for the indication of morbidly adherent placenta had one or more of the following risk factors: previous caesarean section,placenta previa,previous history of curettage and history of manual removal of placenta. 2 patients underwent hysterectomy for the indication of uterine rupture,one of whom had history of myomectomy and had delivered vaginally while the other was a case of repeat caesarean section pregnancy with history of abortifacient intake.

Table 5: Mode of delivery and type of hysterectomy

Type of hysterectomy	Vaginal delivery	Caesarean section (CS)		Hysterotomy	Number
		LUCS	Classical CS		
Subtotal hysterectomy	0	2	0	1	3 (16.7%)
Total hysterectomy	4	9	1	1	15 (83.3%)
Number	4	11	1	2	
Percentage(%)	22.2	61.1	5.6	11.1	

22.2% of the patients undergoing obstetric hysterectomy delivered vaginally,66.7% delivered by caesarean section and 11.1% underwent hysterotomy.15 patients (83.3%) underwent total hysterectomy while 3 patients (16.7%) had a subtotal hysterectomy.

Table 6: Maternal complications and outcome

Maternal complications	Number	Percentage(%)
Wound sepsis	2	11.1
Need for blood transfusion	18	100
Need for inotropes	5	27.8
Bladder injury	1	5.5
DIC/Coagulopathy	2	11.1
Haemorrhagic shock	6	33.3
Mortality	2	11.1

Emergency obstetric hysterectomy was associated with complications such as wound sepsis(11.1%),blood transfusion(100%),need for ionotropes support(27.8%),DIC (11.1%) and maternal mortality(11.1%).

Discussion

The incidence of Emergency obstetric hysterectomy in our study was 0.27% which is similar to that reported in China[11](0.22%) and Pakistan[12](0.27%).It is considerably lesser than that

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reported in Nigeria[13](0.51%) and Turkey[4] (0.50%). The incidence rate is higher compared to that in developed countries such as US[14](0.06%) which could be attributed to differences in obstetric practices, demographic and socioeconomic parameters,healthcare facilities, accessibility and progress in Medical Science.When compared with studies in India,the incidence is comparable to another study[15] but is higher than that of few studies [16,17] which could be because our study was conducted in a tertiary care centre which caters to a lot of referred cases.

There has been a rise in cases of postpartum haemorrhage necessitating hysterectomy[18]. Inspite of need for smaller families,easy accessibility to contraceptive measures and early pregnancy termination options there has been a persistent rise in caesarean section which could partly be because of patient preferences. This has caused an increase in complications such as abnormal placentation,atonic uterus and uterine rupture.

The most common indication for emergency obstetric hysterectomy in our study is atonic postpartum haemorrhage(33.3%) followed by morbidly adherent placenta(27.8%) which is also the case in other studies done in India[1,19],UK[17] and Turkey[18].

A greater association of emergency obstetric hysterectomy with caesarean delivery(66.7%) than with vaginal delivery(22.2%) as seen in our study is similar to other studies from India [1,19],Turkey[18] and China[11].This higher association of caesarean section with obstetric hysterectomy could be used to make people aware of the risks and long-term implications of caesarean section which might reduce the incidence of 'caesarean section on demand'. Maternal mortality in our study is 11.1% which is similar to other studies[1,3,4] from across the world which report a range from 7% to 17%.

Thus,although emergency obstetric hysterectomy has significant associated morbidity and mortality,it is a life-saving procedure in the event of intractable haemorrhage.

Conclusion

Although Emergency obstetric hysterectomy ceases future child-bearing of the woman, it is a life-saving procedure in most cases. Being trained in this skill is important for obstetricians as when conservative management fails and provision for newer modalities are unavailable, it can prove lifesaving. The morbidity and mortality linked with obstetric hysterectomy is ascribable more to the underlying disorders than to the surgery itself. It can thus be reduced by regular antenatal checkups, detailed history taking such as history of previous caeasarean section or curettage ,early detection of high-risk factors and timely referral. Use of imaging modalities such as Magnetic resonance imaging and doppler studies could be helpful when placenta accreta spectrum is suspected.Multiple pregnancies and the increasing rates of caesarean section is likely to increase the incidence rate of emergency obstetric hysterectomy in the future.

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