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Original Research Article

Fetomaternal outcomes of emergency obstetric hysterectomy in a tertiary care teaching hospital in eastern India: A prospective study

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ABSTRACT

Objective: To evaluate frequency, indications, demographic characters and the fetomaternal outcomes of emergency obstetric hysterectomy in a tertiary care teaching hospital in Eastern India.**Study Design:** Prospective, unicentric study.**Methodology:** Records of all cases undergoing emergency obstetric hysterectomy in the emergency operation theatre of department of obstetrics and gynecology during the study period were analyzed as per required variables and data was processed to evaluate the results.**Results:** A total 22 obstetric hysterectomies were carried out during the study period, 7 (31.81%) cases following vaginal delivery and 15 (68.18%) cases during or following caesarean section. The incidence of obstetric hysterectomy was 0.63 per thousand deliveries. The mean age of the subjects was 26.81 ± 1.11 years. Placenta accreta spectrum was the most frequent indication for obstetric hysterectomy (36.36%). Hypotension requiring the use of vasopressors (77.27%) was the commonest complication faced by the subjects. Mortality rate amongst the subjects was 9.09%. Fetal outcomes were varied. 68.18% of the newborns were healthy. The mortality rate among the newborns was 9.09%.This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.For reprints contact: reprint@ipinnovative.com

1. Introduction

Emergency obstetric hysterectomy is the surgical extraction of the uterus either at the time of cesarean section or following vaginal delivery, or within 42 days of delivery. It is usually performed at the setting of a life-threatening obstetric hemorrhage that is uncontrolled even after adopting the most suitable medical and surgical methods. Cesarean hysterectomy can be classified as elective for the management of incidental diseases like cervical intraepithelial neoplasia (CIN), or for the purpose of sterilization,¹ but in most cases is performed on an unplanned, emergency basis and proves to be life-saving in most of such cases.

Uterine atony and uterine rupture were formerly regarded as the commonest indications necessitating emergency hysterectomy. However, more recent reports have mentioned placenta accreta as the most common indication, which is attributed to the increasing number of Caesarean deliveries all over the world.

2. Objective

To evaluate frequency, indications, demographic characters and the fetomaternal outcomes of emergency obstetric hysterectomy in a tertiary care teaching hospital in Eastern India.

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3. Materials and Methods

3.1. Study design

Prospective, unicentric study.

3.2. Study type

Observational study.

3.3. Study area

Department of Obstetrics and Gynecology, R.G. Kar Medical College and Hospital, Kolkata, West Bengal.

3.4. Study duration

August 2020 to April 2022.

3.5. Subject selection criteria

All patients undergoing emergency obstetric hysterectomy during the study period in emergency operation theatre of department of obstetrics and gynaecology of the concerned Medical College.

Emergency obstetric hysterectomy was considered as operation performed at the time of, or within 24 hours of caesarean section or vaginal delivery.

3.6. Sample size

There were 22 cases of emergency obstetric hysterectomy during the study period.

3.7. Methodology

Records of all cases undergoing emergency obstetric hysterectomy in the emergency operation theatre of department of obstetrics and gynecology during the study period were analyzed as per required variables and data was processed to evaluate the results.

3.8. Statistical analysis

Data was recorded using Microsoft Excel(2010). Statistical analysis was done using SPSS Software (version 20.0).

4. Results and Analysis

The total number of deliveries during the study period was 34,567 of which 11,678 were vaginal and 22,889 were by caesarean section. A total of 22 obstetric hysterectomies were carried out during the study period. The incidence of obstetric hysterectomy in the institute was 0.63 per 1000 deliveries.

The mean age of the subjects was 26.81 ± 1.11 years. Majority of the subjects were multigravida and in the age group 21-30 years.

Placenta accreta spectrum was the most frequent indication for obstetric hysterectomy (36.36%), followed by atonic post partum hemorrhage (31.81%), abruption placentae (13.63%), uterine rupture (9.09%) and broad ligament hematoma (4.54%).

In each case, several measures were undertaken before actually proceeding for hysterectomy and more than one method was used in most of the cases.

All the subjects needed blood products either intra-operatively or in the post operative period or both. Each subject received more than one type of blood product.

Hypotension requiring the use of vasopressors (77.27%) was the commonest complication faced by the subjects, followed by fever (59.09%). The mortality rate among the subjects following obstetric hysterectomy was 9.09%.

Fetal outcomes of the cases who underwent obstetric hysterectomy were varied. 68.18% of the newborns were healthy. The mortality rate among the newborns was 9.09%.

5. Discussion

Storer performed the first cesarean hysterectomy in the United States in 1869.² Thereafter, Porro of Milan described the first cesarean hysterectomy in which the infant and mother survived. As a mark of honor, the procedure is frequently referred to as the Porro operation.²

An observational, prospective study was carried out in the department of obstetrics and gynecology of R.G Kar Medical College, Kolkata for a period of 20 months.

A total 22 obstetric hysterectomies were carried out during the study period, 7 (31.81%) cases following vaginal delivery and 15 (68.18%) cases during or following Caesarean section. The incidence of Obstetric Hysterectomy was 0.63 per thousand deliveries. The mean age of the subjects was 26.81 ± 1.11 years. Majority of the subjects (18 out of 22) were multigravida. Placenta accrete spectrum was the most frequent indication for obstetric hysterectomy (36.36%), followed by atonic post partum hemorrhage (31.81%), abruption placentae (13.63%), uterine rupture (9.09%) and broad ligament hematoma (4.54%). In each case, several measures were undertaken to control hemorrhage before actually proceeding for hysterectomy, like Foley's catheter tamponade, bilateral uterine artery ligation, B-Lynch suture, modified B-Lynch suture, bilateral internal iliac artery ligation.

Fetal outcomes of the cases who underwent obstetric hysterectomy were varied. 68.18% of the newborns were healthy. The mortality rate among the newborns was 9.09%. Several studies on emergency obstetric hysterectomies have been carried out in India and abroad.

In a study conducted in China for a period of 12 years, the incidence of obstetric hysterectomy was 0.63 per 1000 deliveries. The commonest causes were post partum prothrombin activity $<50\%$ (61.5%) and placenta accreta (43.76%).³ In another study conducted in the US, the

Table 1: Incidence of obstetric hysterectomy in the institute of study (N=22)

Mode of Delivery	Frequency	Emergency Obstertric Hysterectomy	Percentage (%) (N=22)	Incidence (per 1000)
Spontaneous Vaginal Delivery	11019	5	22.72	0.45
Instrumental Vaginal delivery	659	2	9.09	3.03
Caesaren section	22,889	15	68.18	0.65
Total	34,567	22	100.00	0.63

Table 2: Age, Gravida and Parity distribution of the subjects included in the study (N=22)

Age group	Number of patients (%)	Gravida				Parity				
		Primigravida	Multigravida	P0	P1	P2	P3	P4	P5 and above	
16-20	2 (9.09)	0	2	0	2	0	0	0	0	
21-25	8(36.36)	2	6	2	5	1	0	0	0	
26-30	8(36.36)	2	6	2	2	1	2	1	0	
31-35	3(13.63)	0	3	0	0	0	1	1	1	
36-40	1(4.54)	0	1	0	0	0	0	1	0	
Total (N)	22(100)	4	18	4	9	2	3	3	1	
		Total (N) = 22				Total (N) = 22				

Table 3: Indications for obstetric hysterectomy (N=22)

Indication for Obstetric Hysterectomy	First Vaginal Delivery		Vaginal Delivery				Caesarean Section		Frequency (%)
	Vaginal delivery after Caesarean section		Vaginal delivery after previous Vaginal Delivery		First Caesarean section	Caesarean section after Caesarean section			
	Spontaneous	Instrumental	Spontaneous	Instrumental	Spontaneous	Instrumental			
Placenta Accreta Spectrum	0	0	0	0	0	0	3	5	8(36.36)
Atonic post partum hemorrhage	1	0	0	1	2	0	1	2	7(31.81)
Abruption Placentae	0	0	0	0	1	0	1	1	3(13.63)
Uterine rupture	0	0	1	0	0	0	0	2	2(9.09)
Broad ligament hematoma	0	0	0	1	0	0	0	0	1(4.54)

Table 4: Measures taken to arrest bleeding and prevent obstetric hysterectomy (N=22) (more than one method was used in each case before proceeding for hysterectomy)

Measures taken to prevent Obstetric Hysterectomy	Vaginal Delivery (n=7)	Caesarean Section (n=15)
Foley's catheter tamponade	4	2
Bilateral uterine artery ligation	2	8
Bilateral Internal Iliac artery ligation	3	9
B Lynch suture	3	12
Modified B Lynch Suture	2	11

Table 5: Measures taken to arrest bleeding and prevent Obstetric Hysterectomy (N=22) (more than one method was used in each case before proceeding for hysterectomy)

Indication for Obstetric Hysterectomy	Number of subjects receiving blood products (N=22)				
	Whole blood	Packed RBCs	Fresh Frozen plasma	Platelets	Cryoprecipitate
Placenta Accreta Spectrum	1	8	6	0	0
Atonic post partum hemorrhage	2	7	7	1	0
Abruption Placentae	0	3	3	1	2
Uterine rupture	0	2	2	0	1
Broad ligament hematoma	0	1	1	1	1

Table 6: Adverse effects faced by the subjects (each subject faced more than one adverse effect)

Adverse effects	Number	Percentage(%)
Fever	13	59.09
DIC	5	22.72
Wound sepsis and wound gaping	1	4.54
Need for vasopressor	17	77.27
ICU admission	6	27.27
Mortality	2	9.09
Relaparotomy	1	4.54

Table 7: Fetal outcomes of obstetric hysterectomy cases (N=22)

Fetal outcome	Number	Percentage(%)
Healthy newborn	15	68.18
SNCU admission	10	45.45
NICU admission	5	22.72
Mortality	2	9.09

incidence of obstetric hysterectomy was 0.06%⁴ and the commonest cause was placenta accreta (63.7%).

Uterine artery embolization has recently emerged as a safe and effective nonsurgical technique for controlling acute and chronic genital bleeding in a variety of obstetric and gynecological conditions.⁵ Angiographic selective arterial embolization has been found to be a safe and effective method of controlling severe PPH in 90% to 95% of cases irrespective of the cause of PPH^{6,7} and can reduce the incidence of obstetric hysterectomies in near future. However this newer modality requires radiological expertise.

6. Conclusion

Emergency obstetric hysterectomy can be considered a necessary evil in the field of obstetrics.⁸ Although it restricts the future child bearing capacity of the woman, in many cases it saves the life of the mother. Most of its morbidity is attributed to its indications and underlying disorders rather than to the procedure itself. Training junior residents and senior residents in this rare skill can prove lifesaving in situations where expertise or facilities for newer modalities of management, such as uterine artery embolization, do not

exist, or fail. Rising rates of cesarean section and multiple pregnancies are bound to increase the incidence of obstetric hysterectomy in the future.

7. Source of Funding

None.


8. Conflict of Interest

None.


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