

Incidence and Complications of Emergency Peripartum Hysterectomy: A Retrospective Study at Maternal and Child Health Training Institute, Dhaka

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Abstract

Introduction: Emergency peripartum hysterectomy (EPH) is a major surgical venture performed in the setting of life threatening hemorrhage during or immediately after abdominal and vaginal deliveries. In developing countries, 8-10% of maternal mortality directly occurs due to massive obstetrical hemorrhage. Most common indication for emergency peripartum hysterectomy has been uterine atony and uterine rupture. The decision to perform an emergency hysterectomy on a young woman especially one with low parity poses a dilemma for the obstetrician particularly in our society.

Objective: To estimate incidence, indications and post-operative complications associated with emergency hysterectomy at Maternal and Child Health Training Institute (MCHTI), Azimpur, Dhaka.

Materials and Methods: This is a retrospective study and registration numbers of all women who underwent emergency peripartum hysterectomy were identified. With the numbers, the case notes were retrieved from the medical records department for in-depth study. Information abstracted included the socio-demographic characteristics of the patients, indications for the hysterectomy, type of hysterectomy performed, booking status of patients, mode of delivery, gestational age at delivery and maternal outcome were recorded in a pre-designed data form. The data were analyzed using simple proportion, rates and tables.

Results: There were 18 cases of emergency peripartum hysterectomies performed during the study period of January 2011 to December 2013 (incidence 1.26/1000 deliveries). Commonest age of the middle group was 29-34 years. Ruptured uterus was the commonest indication (9 cases, 50%) and other indications were uterine atony/ PPH (8 cases, 44.44%), placenta praevia (1 case, 5.56%). Subtotal abdominal hysterectomy was done in 17(94.44%) cases whereas total abdominal hysterectomy in 01(5.56%) cases.

This emergency procedure was associated with significant number of intraoperative and postoperative complications, However maternal and perinatal outcome was satisfactory.

Conclusion: EPH remains an essential life saving procedure and its incidence continues to remain high in our community when compared with developed countries. Effective antenatal care, identification of patients at risk, enhancement of blood transfusion facilities together with improvement of surgical skills are important to reduce the incidence of peripartum hysterectomy as well as morbidity and mortality.

Key-words: Emergency peripartum hysterectomy, Life threatening hemorrhage, Abdominal deliveries, Vaginal deliveries.

Introduction

Emergency peripartum hysterectomy (EPH) is a major surgical venture invariably performed in the setting of life threatening hemorrhage during or immediately after abdominal and vaginal deliveries¹⁻⁵. Despite advances in medical and surgical fields, post partum hemorrhage continues to be the leading cause of maternal morbidity and mortality¹⁻⁶. Even today, 8-10% of maternal mortality in developing countries directly occurs due to massive obstetrical hemorrhage⁷.

Most common indication for emergency peripartum hysterectomy have been uterine atony and uterine rupture^{8,9}. In the developed world the increase in the incidence of obstetric hysterectomy has been attributed to the increasing caesarean section rates and the concomitant rise in the incidence of placenta praevia and morbidly adherent placenta. On the other hand, poverty, poor transportation facilities, erroneous cultural and religious beliefs, poorly supervised deliveries as well as inadequate distribution of available health facilities have all made their contributions to the higher incidence of obstetric hysterectomy in the developing countries¹⁰.

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The decision to perform an emergency hysterectomy on a young woman especially one with low parity poses a dilemma for the obstetrician particularly in our society. The procedure is usually performed when all conservative measures have failed to achieve haemostasis during life threatening obstetric haemorrhage. However, timely decision for this surgical intervention may make the difference between life and death for the mother and may greatly improve the outcome¹⁰.

Though the first operation of caesarean hysterectomy was originally proposed in 1768 by Joseph Cavallini in Florence, the first successful Obstetric hysterectomy was carried out in 1876 by Eduardo Porro from Pavia, Italy¹⁰.

EPH is well known to be associated with severe blood loss, risk of transfusion, intra-operative complications and significant postoperative morbidity and mortality. Maternal mortality rates associated with EPH range from 0 to 30%, with the higher rates in regions with limited medical and hospital resources¹¹. The aim of this study was to estimate incidence, indications, and postoperative complications associated with emergency hysterectomy in MCHTI, Dhaka.

Materials and Methods

This retrospective study was carried out during the period of January 2011 to December 2013 at Maternity and Child Health Training Institute (MCHTI), Azimpur, Dhaka. This 123 bedded, oldest, Obs and Gynae hospital is situated in the southern part of Dhaka city where patients come from larger part of the city.

The registration numbers of all women who underwent emergency peripartum hysterectomy between 1st January 2011 and 31st December 2013 were identified. With the numbers, the case notes were retrieved from the medical records department for in-depth study. Information included the socio-demographic characteristics of the patients, indications for the hysterectomy, type of hysterectomy performed, cadre of surgeon, booking status of patients, mode of delivery, gestational age at delivery and maternal outcome were recorded in a pre-designed data form. The data were analyzed using simple proportion, rates and tables.

Results

The incidence of peripartum hysterectomy varies in different parts of the world due to various factors. There were 14,235 deliveries that took place during the last three years of this study period (January 2011 to December 2013) and 18 emergency peripartum hysterectomy performed. The incidence was 1.26 per 1000 deliveries (Table-I).

Table-I: Incidence of Peripartum Hysterectomy (n=18)

Total peripartum hysterectomy	Total delivery	Incidence
18	14235	1.26/1000 deliveries

Table-II: Distribution of patients by age (n=18)

Age Group (years)	Number of Patients	Percentage	Mean	SD
18-22	6	33.33	27.57	6.27
23-28	3	16.67		
29-34	7	38.89		
35-40	2	11.11		

Table-III: Distribution of patients by mode of presentation (n=18)

Mode of presentation	Frequency	Percentage
P/V bleeding with shock	02	11.10
P/V bleeding without shock	01	05.55
Ruptured uterus(clinically)	01	05.55
Normal Pregnancy	14	77.78

Table-IV: Distribution of patients by mode of delivery (n=18)

Mode of delivery	Frequency	Percentage
Home delivery	02	11.11
Caesarean section	16	88.89

Table-V: Distribution of patients by indication of Hysterectomy (n=18)

Indication	Frequency	Percentage
Ruptured uterus	09	50
Uterine atony/PPH	08	44.44
Placenta praevia	01	05.56
Total	18	100

Table-VI: Distribution of patients by type of Hysterectomy (n=18)

Indication	Frequency	Percentage
Subtotal abdominal hysterectomy	17	94.44
Total abdominal hysterectomy	01	05.56
Total	18	100

Table-VII: Distribution of patients by complications of EPH (n=18)

Complications		Frequency	%
Intra Operative	Urinary bladder injury	03	16.67
	Adnexal injury	04	22.22
	Intestinal injury	01	05.56
	Ligation of ureter	01	05.56
Post Operative	Febrile illness	07	38.89
	Surgical site infection	03	16.67
	Wound dehiscence	02	11.10
	Massive haemorrhage	02	11.10
	Re-exploration due to haemorrhage	02	11.10

Table-VIII: Distribution of patients by maternal and perinatal outcome (n=18)

Outcome		Frequency	%
Maternal	Mortality	Nil	00
	Still born	02	11.10
Perinatal	Early perinatal death	01	5.56
	Alive	15	83.33

The commonest age group involved in peripartum hysterectomy was 29 to 34 years (38.89%) and 7 cases were in this group (Table-II). The patients presented in various ways; 02 cases (11.10%) were admitted in a state of shock with P/V bleeding, 01 case (05.55%) had P/V bleeding but was not in a state of shock. 01 case (05.55%) had sign symptoms of ruptured uterus at the time of admission. The rest of the cases in this study (14 cases, 77.78%) were of normal pregnancy but in different stages of labour (Table-III). Regarding most of the delivery in 02 cases (11.11%), delivery was conducted at their home by traditional birth attendant. Caesarean sections were performed at MCHTI in 16 cases (88.89%) (Table-IV). In this study, peripartum hysterectomy was performed for ruptured uterus in 09 cases (50%) of which 07 cases (38.89%) due to obstructed labour and 02 cases (11.11%) due to previous 2 LUCS. Uterine atony/PPH was the second peak as indication for hysterectomy (08 cases, 44.44%). One case (05.55%) was found central placenta praevia (Table-V). In this study subtotal abdominal hysterectomy was done in 17 cases (94.44%) whereas total abdominal hysterectomy in 01 (5.56%) cases (Table-VI). Since peripartum hysterectomy is an emergency procedure, it was associated with significant number of complications both intraoperative and postoperative which are shown in Table-VII. All the cases were in acute emergency state which required immediate resuscitation and definitive treatment as well. there was no maternal deaths (00%). Among 18 delivered babies all were term; 03 of the babies died of which 02 were still born and 01 was early perinatal death (Table-VIII).

Discussion

Bangladesh is one of the developing countries where maternal mortality and morbidity is considerably high. Peripartum hysterectomy is a mutilating surgery in obstetrics which is not acceptable by the mother and obstetrician as well. However, sometimes the obstetrician performs this procedure as a life saving measure.

This study was conducted in MCHTI, Azimpur, Dhaka a specialized obs and gynae hospital. During the study period there were 18 cases of peripartum hysterectomy and the overall incidence is 1.26 per 1000 deliveries. This rate is little higher than the incidences reported previously by other institutions of other countries^{1,3}. In modern obstetrics, the overall incidence is 0.05% (0.5/1000 deliveries)¹². More emergency hysterectomies were performed in some African and Asian countries as compared to the United Kingdom and United States¹³. This considerable difference in its incidence in different parts of the world depends upon availability

of modern obstetrical services, awareness of antenatal care and effectiveness of family planning activities of a given community¹⁴. In 1999, Rouf S et al carried out a study in Dhaka Medical College Hospital on peripartum hysterectomy where the incidence was 6.63/1000 deliveries¹⁵ which is higher than the incidence in the present study.

It has been found in this study that the incidence of peripartum hysterectomy is more in the fourth decade and the mean age was 27.57 ± 6.27 years. The incidence is more in the higher age group¹⁴⁻¹⁶. Because, multiparous women have higher risk of rupture of uterus (from previous caesarean section and obstructed labour) and uterine atony. In this study, median parity was found to be 4.08 (range 0-9) and in case of S. Rouf et al¹⁵ it was 2 (range 0-7). However in Pakistan Tahir S et al¹⁴ showed the mean parity was 07.00 (range 00-14).

The patients who underwent peripartum hysterectomy in this study presented with P/V bleeding with or without shock (11.11% and 5.55%), ruptured uterus (5.55%) and features of full term pregnancy with labour pain (77.78%). Rupture of uterus (due to obstructed labour 38.89% and previous 02 LUCS 11.11%) had been found to be the commonest (50%) indication of peripartum hysterectomy, next in order was atonic PPH (44.44%). Other cause was placenta praevia (5.55%). Rouf S et al¹⁵ showed rupture of uterus from obstructed labour was the commonest (66.13%) indication of peripartum hysterectomy. In other developing countries like Pakistan, Nigeria studies carried out by Tahir S et al¹⁴, Osefo NJ¹⁷ respectively had shown that rupture of the uterus was the commonest indication. High incidence of rupture uterus from obstructed labour in our community reflects ignorance about pregnancy and childbirth care and sub-standard quality of obstetric care. Obstructed labour with attempted home delivery, injudicious use of oxytocin in grand multipara and delayed referral are the main aetiological factors. In this study, 15(17.86%) hysterectomies were performed for scar rupture with patients in labour. Most of the patients with prior caesarean birth are delivered by repeated caesarean section and practice of vaginal birth after caesarean delivery is very limited. This is because of the fact that majority are non-booked patients in labour, referred to this hospital with considerable delay, record keeping is poor and details of history of previous labour and operations are not available.

08 cases (44.44%) of peripartum hysterectomies were performed to manage postpartum haemorrhage from uterine atony which was the second most common cause in this study.

The incidence of peripartum hysterectomy due to this cause also varies in different countries. Tahir S et al¹⁴, Rouf S¹⁵ and Giwa-Osagie OF et al¹⁸ presented PPH as the second common cause of peripartum hysterectomy in their studies. There was decreased proportion of hysterectomies being done for uterine atony when compared with the studies of developed countries and studies done in the past¹⁸⁻²⁰. This may be due to better pharmacological and surgical maneuvers (Pharmacological -administration of oxytocin, ergometrine, prostaglandin F₂ and surgical maneuvers includes ligation of internal iliac arteries, B-Lynch technique, oversewing of the placental bed etc.) used in an attempt to control the haemorrhage.

But the picture is somewhat different in the developed countries; different studies have shown that abnormal placentation has been the primary indication^{21,22}. As reported by Clark et al²³ incidence of placenta praevia increased from 0.5% in general population to 3.9% after one caesarean section and up to 10% after four caesarean sections. The rise in the contribution of placenta praevia and morbidly adherent placenta as a cause of peripartum hysterectomy is worth noting. This is probably related to the global increases in the caesarean section rate. In our country the number of caesarean section performed in the tertiary referral center has also shown a rising trend²⁴. Nevertheless, the extent to which a history of caesarean delivery predisposes to the development of placenta praevia in women of Bangladesh is still unclear as relevant studies are not available²⁵.

In this study it was found that 17(94.44%) cases of subtotal hysterectomy and 01(5.56%) case of total hysterectomy were performed. In one study carried out in Pakistan Tahir S et al¹⁴ showed that 25(83.33%) cases of total hysterectomies and 5(16.67%) cases of subtotal hysterectomies were performed. Total hysterectomy is preferred in cases of ruptured uterus if there is extension towards the cervix. The choice of subtotal hysterectomy may be dictated by the individual situation. For example, the choice of subtotal hysterectomy would be preferable when the general condition of the patient is poor and available facilities are inadequate. In general, per operative complication and morbidity is 4 to 5 times more common in emergency than elective cases. In this study the important causes of higher morbidity were febrile illness, anaemia and sepsis. There were 03(16.67%) cases of bladder injury during surgery, 03(16.67%) cases of surgical site infection and 02(11.10%) cases of wound dehiscence. However the overall morbidity was almost same as reported in the previous study in Bangladesh¹⁵. In Bangladesh, the incidence of peripartum hysterectomy is significantly high. However this trend is changing due to awareness of the people, effective antenatal care and improvement of emergency obstetric care (EOC).

Conclusion

Emergency peripartum hysterectomy remains an essential life saving procedure and continues to remain high in our community which compared with developed countries. The decision to perform emergency peripartum hysterectomy is usually difficult because of obstetrician's paramount wish is to preserve the uterus for future childbearing. High parity, illiteracy and ignorance coupled with inadequate maternity services, injudicious use of oxytocin, management of third stage of labour, abnormal placentation and uterine atony were identified as risk factors for emergency peripartum hysterectomy. Effective antenatal care, identification of patients at risk, enhancement of blood transfusion facilities, together with improvement of surgical skills are important to reduce the incidence of peripartum hysterectomy as well as morbidity and mortality. Attempts to reduce the primary caesarean section rate would be helpful in reducing the relative risk for hysterectomy as well. Since this was a retrospective study there were some limitations also. Few of the records may be missing and socio-demographic picture could not evaluate properly because record keeping system was not at all standard in this institute.

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