

Profile of Emergency Peripartum Hysterectomies: Analysis of Six Years' Data from a Medical College Hospital in Karnataka.

Mamatha Shivanagappa¹, Ashwini Ramakrishna², Madhumitha Mahesh³

¹Associate Professor, ²Junior Resident, ³Intern, Department of Obstetrics and Gynecology, Jagadguru Sri Shivarathreeswara (JSS) Medical College, JSS Academy of Higher Education and Research (Deemed to be a University), Bangalore - Mysore Road, opposite J.S.S. Pharmacy College, Bannimantap A Layout, Bannimantap, Mysuru - 570015, Karnataka, India

Abstract

Background: Emergency Peripartum Hysterectomy (EPH) is a lifesaving procedure. There are only limited studies providing data about this from Indian authors especially from South India.

Aims and Objectives: i) To know the incidence, indications, risk-factors of EPH at our centre ii) To study the maternal and perinatal outcomes of such patients

Materials and Methods: Retrospective data over a six-year period between January 2014 to April 2020 of all patients who underwent EPH was collected. Data of pregnant who delivered prior to 24 weeks of gestation, those undergoing hysterectomy for indications other than obstetric and after 42 days were excluded. Demographic data, parity, antenatal high-risk factors, indications for EPH, need for blood transfusions, and fetal-maternal outcome, were recorded.

Results: There were a total of 28,124 deliveries. 12,166 (43.2%) were delivered by Emergency Cesarean section. EPH was performed in 16 cases. (An incidence of 0.056%). Majority, 12 (75%) of those who underwent EPH were multiparous. 9 (56.2%) of cases delivered by FTVD, 6 (37.5%) by LSCS, 1 (6.2%) by instrumental delivery. In 14 (87.5%) subtotal hysterectomy was performed. Total hysterectomy was performed in those with low lying placenta, adherent or otherwise where removal of cervix was mandatory. The most common indication for EPH was atonic PPH in 10 (62.5%). 14 (87.5%) patients required blood transfusion. 10 (62.5%) of cases required ICU admission. 6 (37.5%) of the patients went into DIC. Among those who underwent EPH there were 2 (12.5%) maternal deaths and there was 1 perinatal death.

Conclusions: Postpartum Hemorrhage, adherent placenta, previous scar, multiparity were the significant risk factors. EPH is a lifesaving procedure but has its own risks and outcome may not be always good. Proper antenatal care, early referrals and booking, limiting primary cesarean sections are thus essential to reduce the need for EPH.

Keywords: Maternal mortality, Peripartum Hysterectomy, Obstetric Hemorrhage

Introduction

Emergency Peripartum Hysterectomy (EPH) is a lifesaving procedure performed in the immediate post partum period in patients with intractable obstetrical haemorrhage

Address for Correspondence

Dr. Mamatha Shivanagappa, B-106, Brigade Solitaire Apartments, Alanahally Layout, Mysore - 570028, Karnataka, India
Ph: 9845047939 E-mail: mamathamahesh106@gmail.com

Received: June 2020

Accepted: November 2020

unresponsive to other measures [1]. It is still being resorted to in present day obstetrics [2]. The common causes for such abnormal bleeding being abnormal placentation, uterine atony, uterine rupture, accidental haemorrhage, leiomyomas, coagulopathy, sepsis or laceration of uterine vessel. The global incidence of EPH is 0.35% to 0.54% of total deliveries [2].

There is a very high maternal mortality with emergency hysterectomy going up to 30%, with even higher rates in places with constrained facilities [3]. A recent meta-analysis showed an annual increase of 8% in the incidence

of EPH around the world [4]. There are only limited studies providing data about this from Indian authors especially from South Indian centres in literature. Our earlier study on this [5] was done over a period of five years and this study is the continuation of the same over another additional year.

Objectives

- To determine the incidence, indications, risk-factors, indications and complications of patients who underwent EPH at our centre.
- To study the maternal and perinatal outcomes of such patients.

Material and Methods

Retrospective data over a six-year period of all women who underwent emergency peripartum hysterectomy between January 2014 to April 2020, was obtained from the medical records of Department of Obstetrics and Gynaecology JSS Hospital, a 1800 bedded UG and PG teaching hospital attached to JSS Medical College, Mysuru, South India.

The data pertaining to patients who delivered singleton infant or twins at hospital or outside hospital, booked or unbooked who underwent hysterectomy in postpartum period were collected. Data of pregnant who delivered prior to 24 weeks of gestation, those undergoing hysterectomy for indications other than obstetric and outside the stipulated time of 42 days were excluded from the study.

Each case record was scrutinized and data classified with regard to incidence, age, parity, antenatal high-risk factors, indications, the type of hysterectomy, complications and fetomaternal outcome. The required data with special reference to the incidence of emergency peripartum hysterectomy, the total number of deliveries, the maternal parameters, the indications of peripartum hysterectomy and associated maternal morbidity and mortality were taken up in the prepared proforma.

Statistics

SPSS program was used for statistical analysis, Categorical variables are expressed as numbers and percentage. Categorical variables were analysed using Chi square test and normally distributed continuous variables were compared by unpaired t test. P value less than 0.005 was considered as significant.

Results

The total number of deliveries was 28,124. Out of them 12,166 (43.2%) were delivered by Emergency Cesarean section. Emergency Peripartum hysterectomy was needed in 16 cases (Incidence = 0.568/1000 deliveries or 0.056%). Table 1 depicts the baseline demographic characteristics of

those women. The age of the patient ranged from 20 to 41 years and women in the 20-30 years old age group constituted over 81.2%, those between 31-40 years constitute 12.5% and who were >41 years comprised 6.2% each. Most of the cases were referred Multiparous state was the commonest (75%). 6 (37.5%) of the cases delivered by LSCS, 9 (56.2%) of cases by FTVD and 1 (6.2%) of the 16 cases delivered by instrumental delivery. Table 2. Shows Clinical Characteristics of patients who underwent Peripartum Hysterectomy. Of the six cases with history of previous LSCS, five had associated abnormal placentation and one had associated breech presentation. One underwent instrumental delivery in view of prolonged second stage of labour. The remaining nine underwent full term vaginal deliveries. In 14 (87.5%) of cases subtotal hysterectomy was performed, while in 2 (12.5%) of cases required total hysterectomy. Total hysterectomy was performed mainly for cases of low lying placenta, adherent or otherwise, where the removal of the cervix was considered mandatory for complete hemostasis. The most common indication for emergency peripartum hysterectomy was atonic PPH in 10 (62.5%), followed by abnormal placentation in 6 (37.5%). Regarding oxytocics used during labour, active management of third stage of labour was carried out by administering 10 units of oxytocin intramuscularly to all as per standard protocol. In addition to that, inj. methylethergometrine (methergine) 0.5 mg IM and inj of methyl analogue of PGF₂α (carboprost) 250µgmIM and tablet PGE₁ (misoprostol) 1000µgm per rectal were used to control bleeding.

Table 1: Depicts the baseline demographic characteristics of those who underwent EPH.

CHARACTERISTIC FEATURE		TOTAL, n (%)
Number of patients		16
Age in years	<30	13 (81.2 %)
	30-40	2 (12.5 %)
	>41	1 (6.2 %)
Referred/ Booked at centre	Referred	9 (56.25 %)
	Booked	7 (43.75 %)
Parity	Primi	4 (25 %)
	Multi	12 (75 %)

The frequency of intraoperative and post-operative complications and need for ICU admission is also depicted. 10 (62.5%) of cases required ICU admission. 6 (37.5%) of the Table 1: Depicts the baseline demographic characteristics of those who underwent EPH. Table 2. Shows - Characteristics of patients who underwent Peripartum Hysterectomy.

Discussion

It was Storer of USA who carried out the first cesarean hysterectomy in 1869. In due course Porro of Milan Italy provided a detailed depiction in literature of the first cesarean hysterectomy. Both mother and infant had survived. In his

Table 2: Shows - Characteristics of patients who underwent Peripartum Hysterectomy

Mode of Delivery	
FTND	9 (56.2 %)
LSCS	6 (37.5 %)
Instrumental	1 (6.2 %)
Type of Hysterectomy	
Subtotal Hysterectomy	14 (87.5 %)
Total Hysterectomy	2 (12.5 %)
Cause for Hysterectomy	
Atonic PPH	10 (62.5 %)
Abnormal Placentation	6 (37.5 %)
Complications	
ICU admission	10 (62.5 %)
DIC	6 (37.5 %)
Blood Transfusion	14 (87.5 %)

remembrance procedure is often referred to as the "Porro Operation" [6].

It is a well-established practice to classify cesarean hysterectomy as elective and emergency. Emergency peripartum hysterectomy is carried out when postpartum haemorrhage is intractable. There has been an upsurge in cases of post partum haemorrhage requiring hysterectomy [7]. In today's modern obstetric practice, the rising numbers of primary cesarean section accounts for increased need for surgical management of PPH. The higher need for EPH is mainly due to a surge in complications like abnormal placentation and uterine rupture, but also in the incidence of atonic post-partum haemorrhage.

The incidence of EPH in our study was 0.56 per 1000 which is similar to that reported from other studies from India [8] (0.52 per 1000), Nigeria [9] (0.51 per 1000), The incidence was 0.4 per 1000 in a study done by Afaf RA [10] Other studies showed higher incidence than our study. It was 2.6/1000 deliveries reported by Kant and Wadhwani *et al* [11] Sahu *et al* [12] reported an incidence of 2.006/1000 deliveries in their study. In our study most of the patients undergoing EPH were multiparous (75%), and belonged to age group of 20-30 years (81.2%), most of them were referred cases (56.2%). Abnormal placentation, multiparity, previous cesarean section were significant risk factors. The study conducted by Knight [13] *et al* concluded that EPH is strongly associated with age more than 35 years and risk rises with parity greater than three and number of previous cesarean delivery. Marwah P. [14] recorded incidence of EPH of 3.2/1000 deliveries.

The most common indication of EPH in our study was uterine atony (62.5%) followed by morbidly adherent placenta (37.5%) and uterine rupture (6.25%). This reflects the situation in most developing countries where atony accounts for the majority of cases of EPH, but also shows a

rising contribution of placental causes, which is replicating the trend in the developed world studies from other tertiary care centres in India [14]. The Study by Tapisiz OL *et al* in a tertiary hospital in Ankara, Turkey also revealed atonic post-partum haemorrhage to be the most common indication for EPH [15].

In our study, approximately 62.5% of parturient needed ICU admission similar to the results obtained by Taru Gupta *et al* which showed 56% of patients needed ICU Admission [16]. In our study, there were 2 (12.5%) Maternal deaths, all were due to severity of condition necessitating hysterectomy. Similar rate of maternal mortality (17.7%) was noted in a study conducted over a period of eight years by Chawla [17] Study by Taru Gupta *et al* showed lesser maternal mortality (10.1%) [16]. There was no maternal mortality in the study by Mukherjee [18]. The profile of EPH from the results of the first five years as published in the study done by us in the same centre and profile of EPH the extended period of one more year in this study has not shown significant changes [5].

Maternal mortality has fallen all over the world because of better improvements in instrumentation, availability of better drugs acting on uterus and because of improved surgical techniques. There is a need for hospitals to conduct regular audits and implement measures to reduce Cesarian rates.

Maternal mortality in the present study there were two maternal deaths. The high maternal mortality reported in many other studies was due to massive obstetric haemorrhage which could not be brought under control even after hysterectomy [19] But in the final count EPH saves lives, this has been seen in the UKOSS conclusion that for every one death due to hemorrhage after EPH on their were 150 women with successful outcome [20].

This study has the following strengths. The duration of time over which the data has been collected is large. Another point is that the data in the present study has been collected from a single tertiary health care centre, enabling better analysis of the parameters.

The major limitation of our study is that of its retrospective design, hence the cause and effect relationship cannot be established. Despite the limitations, the present study does provide useful information for planning in further management in future cases.

Peripartum hysterectomy is a life saving procedure done in emergency situations. The procedure primarily is of benefit in that it saves the life of the mother although it curtails the mothers' future child bearing potential in many cases. The morbidity seen with this procedure is attributable to its indications and underlying disorders rather than to the procedure itself.

Conclusions

Postpartum Haemorrhage, adherent placenta, previous scar, multiparity were the significant risk factors. Proper antenatal care, early referrals and booking in tertiary health centre reduces the need for EPH. Timely blood transfusions and reducing the number of primary cesarean sections are the keys to reduce morbidity and mortality associated with emergency peripartum hysterectomy.

Acknowledgments

Due thanks to all the Unit Chiefs of OBG Department JSS Hospital for their cooperation and aid. Special thanks to Dr. Suma KB, Head of the Department of OBG, JSS Hospital for her support. We thank Mrs Vidya for help in statistical Analysis. We are grateful to the staff of Medical Records Section, JSS Hospital for their assistance during the study.

Conflict of interest:	All authors declare no COI
Ethics:	There is no ethical violation as it is based on voluntary anonymous interviews
Funding:	No external funding
Guarantor:	Dr Mamatha Shivanagappa will act as guarantor of this article on behalf of all co-authors.

References

1. Wise A, Clark VI. Challenges of major obstetric haemorrhage. *Best Pract Res Clin Obstet Gynaecol*. 2010; 24:353-65.
2. S Tahmina et al., Emergency Peripartum Hysterectomy: A 14-Year Experience at a Tertiary Care Centre in India *Journal of Clinical and Diagnostic Research*. 2017 Sep, Vol-11(9): QC08-QC11
3. Ozumba BC, Mbagwu SC. Emergency obstetric hysterectomy in Eastern Nigeria. *Int Surg*. 1991; 76:109-11.
4. Singhal S, Singh A, Raghunanda C, Gupta U, Dutt S. Uterine artery embolisation: exploring new dimensions in obstetric emergencies. *Oman: Med J*. 2014; 29(3):217-219.
5. Priyanka Mudashi, Mamatha Shivanagappa, Vinutha K Veerabhadrappe, Madhumitha Mahesh. Emergency peripartum hysterectomy: A five year study from a tertiary care hospital in Mysore, South India. *International Journal of Clinical Obstetrics and Gynaecology* 2019; 3(1): 159-161
6. Abasiattai AM, Umooiyoho AJ, Utuk NM, Inyang Etoh EC, Asuquo EP. Emergency peripartum hysterectomy in a tertiary hospital in southern Nigeria. *Pan Afr Med J*. 2013; 15:60.
7. Joseph K, Rouleau J, Kramer MS, Young D, et al. Investigation of an increase in post partum haemorrhage in Canada. *BJOG: An International Journal of Obstetrics and Gynaecology*. 2007; 114(6):751-759.
8. Juneja SK, Tandon P, Mohan B, Kushal S. A change in the management of intractable obstetric haemorrhage over 15 years in a tertiary care center. *Int J Appl Basic Med Res*. 2014; (1):S17-s19.
9. Nwobodo E, Nnadi D. Emergency obstetric hysterectomy in a tertiary care hospital in sokoto, Nigeria. *Ann Med Health Sci Res*. 2012; 2(1):37-40.
10. Afaf RA, Salah MA. Emergency obstetric hysterectomy eight years review at Taif maternity hospital, Saudi Arabia. *Annals of Saudi medicine*. 2000; 20:5-66.
11. Kant A, Wadhwani K. Emergency obstetric hysterectomy. *J Obstet and Gynecol, India*. 2005; 55:32-34.
12. Sahu L, Chakravarthy B, Panda S. Hysterectomy for obstetric emergency. *J Obstet and Gynecol, India*. 2004; 54:34-36.
13. Knight M, Kurinczuk JJ, Spark P, Brocklehurst P, United Kingdom obstetric surveillance system steering committee. Cesarean delivery and peripartum hysterectomy. *Obstet Gynecol*. 2008; 111(1):97-105.
14. Marwah D, Kaur M, Gupta A. Peripartum hysterectomy – A five year study. *J Obstet and Gynecol, India*. 2008; 58:504-06.

