International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Patil R et al. Int J Reprod Contracept Obstet Gynecol. 2016 May;5(5):1322-1326
www.ijrcog.org

pISSN 2320-1770 | eISSN 2320-1789

DOI: http://dx.doi.org/10.18203/2320-1770.ijrcog20161009

Research Article

Emergency peripartum hysterectomy: a retrospective study at a tertiary care hospital

Ranjana Patil*, Anupama Dave

MGM Medical College, Indore, MP, India

Received: 20 March 2016
Accepted: 11 April 2016

***Correspondence:**
Dr. Ranjana Patil,
E-mail: patildrranjana@gmail.com

ABSTRACT

Background: The main objective is to study the incidence, demographic profile, indications and feto-maternal outcome associated with emergency peripartum hysterectomy (EPH).
Methods: We conducted a retrospective, observational study over a period of 5 years; from January 2011 to December 2015.We studied 81 patients who underwent EPH for various indications in Department of Obstetrics & Gynaecology, MGM Medical College, Indore.
Results: The rate of EPH in present study was 1.46 per 1000 deliveries. Uterine rupture (64.2%) was the most common indication followed by morbidly adherent placenta (11.1%), uterine atony (11.1%).The most common morbidities were wound sepsis and pyrexia. Maternal mortality was 8.6% whereas perinatal mortality was 62 %.
Conclusions: Proper antenatal intrapartum care, early referral and judicious decision making regarding caesarian section are the potential methods which can be implemented to prevent this catastrophic event.

Keywords: Emergency peripartum hysterectomy (EPH), Uterine rupture, Morbidly adherent placenta, Maternal-perinatal mortality

INTRODUCTION

Emergency peripartum hysterectomy (EPH) is a major surgery in which extirpation of uterus invariably performed in the setting of life threatening hemorrhage during or immediately after abdominal and vaginal deliveries.[1-5]

A near miss event is defined as a woman who nearly died but survived a complication that occurred during pregnancy, childbirth, or within 42 days after termination of pregnancy.[6] EOH can be rightly classified as a near miss event.

The most common indication for EPH is severe uterine hemorrhage that cannot be controlled by conservative measures.[7] Such hemorrhage may be due to abnormal placentation (e.g., placenta previa and placenta previa accreta), uterine atony, uterine rupture, leiomyomas, coagulopathy or laceration of a uterine vessel that is not treatable by conservative measures.[7-9] The relative frequency of these conditions is variable and is dependent upon the patient population and practice patterns.[7] Hemorrhage continues to be the leading individual cause of maternal death worldwide accounting for 27.1% of deaths as recently as 2014.[10]

However, due to the increase in the number of caesarean deliveries over the past two decades, placenta accreta has emerged as the most common indication for this operation in developed countries.[11] Currently, poor antenatal care and patient ignorance are still the major hindrances in developing countries towards the control of these correctable causes of maternal morbidity. The advent of the uterotonic agents, along with alternative techniques such as the B lynch suture and uterine artery and internal artery ligation, has further reduced the need for this radical surgery, which has a deep impact on

maternal health and psychology, especially in women with low parity.[12] Though, the recent figures point towards an improving trend in maternal morbidity and mortality in our country in last two decades, they represent the larger frame which includes both urban and rural areas.[13] One meta-analysis reported an annual increase of 8% in the incidence of EOH around the world.[14]

This study is designed to determine the rate of EPH at our institution, the indications, outcomes, in order to make recommendations that will reduce the incidence of the procedure and improve its outcome.

Objectives

To study the incidence, demographic profile, indications and feto-maternal outcomes associated with EPH.

METHODS

This retrospective and analytical study was carried out in Department of Obstetrics and Gynecology, MGM, MC Indore from January 2011 to December 2015.All the patients who underwent Emergency Peripartum Hysterectomy were identified from labour ward registers, operating room register. The case files of all the patients were reviewed regarding the maternal age, parity, previous history of caesarian delivery, mode of delivery, indications ,type and complications of EPH.

RESULTS

During the study period, a total number of 55306 deliveries were conducted at our institution out of which vaginal and caesarian deliveries were 40441 and 14865 respectively. Lifesaving procedure EPH was performed in 81 cases. Incidence of EPH was 0.146%.

Youngest woman to undergo hysterectomy was 19 yrs and oldest one was 37 yrs old. Majority of cases belonged to age groups of 26-30 yrs (42%) followed by 21-25 yrs group (31%) and 31-35 yrs group (20%). Age groups below 20 yrs and above 36 yrs were contributing very less, 5% and 2% respectively.

Table 1: Data of obstetric intervention at our institute during the study period.

Variables	Numbers
Vaginal deliveries	40441
Caesarian deliveries	14865
Total deliveries	55306
Obstetrics hysterectomy	81
Incidence of EPH	1.46 per1000 deliveries

Parity distribution shows that EPH was more common in multiparous women as 92% of cases were multiparous. P1,P2,P3,P4 and P=>5 women contributed 8%, 25%, 31%, 20% and 15% of EPH respectively.

Maximum number of cases were unbooked (85%) and referred (91%) to our institution from peripheral and rural areas.

Table 2: Age wise distribution of parity in patient with emergency hysterectomy.

Age	P1	P2	P3	P4	P>=5	Total	%
<=20	2	1	1			4	5%
21-25	4	10	6	5		25	31%
26-30	1	8	14	6	5	34	42%
31-35			5	4	7	16	20%
36-40		1		1		2	2%
Total	7(8%)	20(25%)	26(32%)	16(20%)	12(15%)	81	100%

Rupture uterus, tonic uterus, adherent placenta and placenta previa were the four chief indications of EPH. Rupture uterus was indication in 52 cases (64.2%).Out of 52 cases, 36 cases occurred in unscarred uterus while 16 cases occurred in scarred uterus. More than 97% cases were referred and unbooked. On analysis of risk factors associated with rupture uterus we found that multiparity was largest risk factor as every case was multiparous and even grandmultparity was observed in 46% of cases while obstructed labour, previous LSCS, VBAC trial were seen in 57.7%, 30.8% and 21.1% of cases. Prolonged unsupervised labour, cephalopelvic disproportion were common causes behind obstruction. Malpresentation like transverse lie with hand prolapse (6), compound presentation (1), breech (1) and hydrocephalus (2) were landed up in the obstructed labour.

Second leading cause of EPH was atonic uterus 9 cases (11.1%). Each case was underwent medical and conservative surgical management before decision of EPH.Out of 9 cases, atony was associated with previous LSCS in 2 cases , grandmulti in 3 cases , abruption and obstructed labour in one case each. Three patients who

were underwent LSCS (2 postpartum and 1 intrapartum) developed atony which led to EPH.

Adherent placenta was indication for EPH in 9 cases (11.1%). It was associated with history of one or more previous LSCS, multiparity and placenta previa in 7, 8 & 2 cases respectively. Out of 9 cases there were placenta accreta and placenta increta in 6 and 1 cases respectively.

Table 3: Indications of EPH in the study population.

Indication	Number	Percentage
Uterine rupture	52	64.2%
Morbidly adherent placenta	9	11.1%
Uterine atony	9	11.1%
Placenta previa	6	7.4%
Traumetic PPH	3	3.7%
Sepsis	1	1.2%
Uterine inversion	1	1.2%

Placenta previa was indication for EPH in 6 cases (7.4%). 4 cases were associated with previous one or more LSCS.

Traumatic PPH led to EPH in 3 cases. Two patients delivered by LSCS for obstructed labour and one delivered vaginaly. All patients referred from periphery to our institute for PPH in very critical condition.

Table 4: Risk factors for emergency peripartum hysterectomy.

Risk factor	Number	Percentage
Multiparity	54	66.7%
Obstructed labour	30	37%
Previous LSCS	28	34.56%
Placental factors	15	18.5%
VBAC	11	13.5%

Sepsis was indication of EPH in one case. It was a postnatal LSCS referred case present with sepsis not responding to medical management & deteriorating.

Table 5: Morbidity and mortality in patient who had EPH.

Variables	Number	Percentage (%)
Wound sepsis	28	34.56%
Pyrexia	24	29.6%
Need for vasopressor	20	24.69%
Blood transfusion	81	100%
Perinatal death	50	61.7%
Maternal death	7	8.64%

One interesting case of inversion in which EPH was done for extreme flabby nature of uterus following correction with Huntington method and uterotonic medication.

On analysis of risk factors for EPH, we observed that multiparity, obstructed labour, previous LSCS, and placental factors (adherent & previa) were present in 74 (92%), 30 (37%), 28 (34.56%) and 15 (18.5%) cases respectively.

As we have already discussed that multiparity, obstructed labour & previous LSCS were common risk factors in cases of rupture uterus. History of previous LSCS was present as risk factor in 13 out of 15 cases of EPH done for placental causes.

Subtotal hysterectomy was performed in 58 cases (71%) while total hysterectomy was done only in 23 cases (28%). Total hysterectomy was performed for rupture uterus, placental causes, traumatic PPH in 11, 10 and 2 cases respectively.

On analysis we found that every woman required blood transfusion. Wound sepsis (34.56%) and pyrexia (29.6%) were commonest morbidities. 25% of cases required vasopressors as they present with shock.

Inspite of life saving procedure EPH, 7 (8.6%)women died. Indication for EPH in above cases were atonic PPH (3), placenta previa (2), traumatic PPH (1)and rupture uterus (1). Perinatal mortality rate was 62%.

DISCUSSION

The incidence of EPH in present study was 0.146%.This rate is higher to that reported from Columbia[15] (0.08%), US[16] (0.06%) while the rate is lower to that reported from Nigeria[17] (0.51%), China[18] (0.22%).

Two studies from India Chawla et al[19] and Rashmi MB et al[20] reported 0.08% rate of EPH. The higher rate of EPH in present study attributed by facts that our centre is the tertiary referral hospital receiving unbooked rural referral in very deteriorated and critical condition.

A high association of multiparity (92%) with EPH was observed in our study & similarly Chawla et al[19] reported 82%. Ohonsi et al[21] reported 60% EPH in P5 & above but only 15% in present study.

The most common indication of EPH in present study was ruptured uterus (64%), followed by morbidly adherent placenta (11%), atonic uterus (11%) and placenta previa (6%). Similar high rate of EPH for ruptured uterus were also reported by Archana et al[22] (75%), Ohonsi et al[21](73%). On the other hand, a study from UK[23] reported only 8% of EPH for the same indication. Owing to ignorance, illiteracy, unbooked status, poor socio-economic status, parturients with high risk pregnancies get only a formal and improper supervision antepartum spacially intrapartum at periphery and delayed referral results in poor outcome.

Atonic uterus was contributing 11.1% to EPH. Ohansi et al[21], Singh at el[24] and Nazam et al[25] reported the frequency of 6.7%, 15.6% and 16.6% for the same. Contrary to this, Chawla et al[19] reported atony (25%) as leading cause for EPH. Better management of third stage of labour (AMTSL) with strong effective uterotonic drugs available at periphery might be the cause for lesser incidence of atonic uterus and referrals for the same. Also because of recent advances in medical and conservative surgical measures (efficient uterotonic, compression of uterus, uterine catheters, step-wise devascularization of uterus) that will combat with PPH to save the uterus.

Morbidly adherent placenta and placenta previa were seen in only 11.1% and 7.4% in our series. Chawla et al[19] reported 21% and 8.9% respectively in their series. Ohonsi et al[21] observed 13.3% and 6.7% incidences of the same for EPH. This is in contrast to the study of UK[23] in which 38% of cases of EPH were for the indication of morbidly adherent placenta. The prominence of this indication for EPH has been reported globally attributed by increasing caesarian rates.

Uterine rupture and morbidly adherent placenta were significantly associated with EPH in the present study that collaborates well with other studies from developing countries[26] this is probably because uterine rupture and morbidly adherent placenta tend to be relatively less amenable to medical and conservative surgical treatments, and land up in radical surgeries like EPH.

On analysis of risk factors for EPH, multiparity and obstructed labour, previous LSCS and placental factors were common risk factors. Previous LSCS had prominent association with rupture uterus in 31% of cases, with morbidly adherent placenta in 78% of cases, with placenta previa in 66.7% of cases and with atony in 22% of cases while in study by Chawla et al[19] association were in 56%, 81% and 41.6% cases of rupture, adherent placenta and atony. So placental causes of EPH had strong association with history of previous LSCS. Therefore every attempt should be made to reduce caesarian rate by performing this procedure only for valid indication.

In the present study, most of cases had subtotal hysterectomy, as most cases were not fit for anesthesia & surgery and also didn't need total hysterectomy. This finding is similar to that reported in other studies.[19,21] Subtotal hysterectomy is safer, faster and easier to perform than total hysterectomy.

In Maternal morbidities, pyrexia and wound sepsis were the commonest in present study similar to study by Ohonsi et al[21].This is because leading indication of EPH was rupture uterus following prolonged obstructed labour; in association with, trauma, anemia; all these predispose to above morbidities. Need of vaso-pressors in 25% of cases presented with shock and similar observation made by study in China[18]. All patients needed blood transfusion as incidence of anemia is very high in our region; similar results are reported in study by Rashmi et al[20]. Maternal mortality in our series was 8.6% that is lower than that reported by Chawla et al[19] (18%) and Ohonsi et al[21] (13.3%).

High perinatal mortality rate (62%) found in this study similar to that reported by Ohonsi et al (73%) owing to rupture uterus as commonest cause of EPH in both studies. Chawla et al[19] observed 28.6% in their study because EPH was done for postpartum causes atony and placental factors mainly.

CONCLUSIONS

EPH in our study mainly contributed by rupture uterus and placental factors which was associated with obstructed labour, history of previous caesarian section. Improvement in female literacy level will improve socioeconomic status of women, increase number of women receiving ANC care and giving birth in hospital facilities. Upgrading the infrastructure and "Emergency Obstetric Care" training for doctors posted at periphery so they can carry out proper ANC care, vigilant intrapartum care medical-conservative surgical treatment and timely referral of high risk parturient to higher centers if needed. Definitely this will bring down labour complications like rupture uterus, atony leading to EPH. Caesarian rate should be curtailed by very judicious decision making for caesarian delivery as placental factors leading to EPH had history of caesarian in majority of cases.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Christopoulos P, Hassiakos D, Tsitoura A, Panoulis K, Papadias K, Vitoratos N. Obstetric hysterectomy.A review of cases over 16 years. J Obstet Gynecol. 2011;31(2):139-141.
2. Kwee A, Boto ML, Visser GH, Bruinse HW. Emergency peripartum hysterectomy: a prospective study in The Netherlands. Eur J Obstet Gynecol Reprod Biol. 2006;124(2):187-92.
3. Karayalcin K, Ozcan S, Ozyer S, Mollamahmutoglu L, Danisman N. Emergency peripartum hysterectomy. Arch Gynecol Obstet. 2010;283(4):723-7.
4. El Jallad MF, Zayed F, Al-Rimawi HS. Emergency peripartum hysterectomy in Northern Jordon: indications and obstetric outcome (an 8 year review) Arch Gynecol Obstet. 2004;270(4):271-3.
5. Yamani Zamzami TY. Indications of emergency peripartum hysterectomy: review of 17 cases. Arch Gynecol Obstet. 2003;268(3):131-5.

6. Say L, Souza JP, Pattinson RC. WHO working group on maternal mortality and morbidity classifications. maternal near miss–towards a standard tool for monitoring quality of maternal health care. Best Pract Res Clin Obstet Gynaecol. 2009;23(3):287-96.
7. Shellhas CS, Gilbert S, Landon MB, Verner MW, Leveno KJ, Hauth JC, et al. Eunice kennedy shriver national institutes of health and human development maternal-fetal medicine units network. The frequency and complication rates of hysterectomy accompanying cesarean delivery. Obstet Gynecol. 2009;114(2 Pt 1):224-9.
8. Zwart JJ, Dijk PD, van Roosmalen J. Peripartum hysterectomy and arterial embolization for major obstetric hemorrhage: a 2-year nationwide cohort study in the Netherlands. Am J Obstet Gynecol. 2010;202:150.e1-7.
9. Rachaga S, Sivanesaratnam. Caesarean hysterectomy-a review of 21 cases in the University Hospital, Kuala Lumpur. Eur J Obstet Gynecol Reprod Biol. 1984;16:321-6.
10. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller AB, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. Lancet Glob Health. 2014;2(6):e323-33.
11. Zelop CM, Harlow BL, Frigoletto FD, Safon LE, Saltzman DH. Emergency peripartum hysterectomy. Am J Obstet Gynecol. 1993;168:1443-8.
12. Rao SB, Shah PK, Dholakia S, Shreyan N, Vanjara N. Emergency hysterectomy: The Hobson's choice in massive atonic postpartum hemorrhage. Bombay Hosp J. 2001;43(2).
13. Gupta U, Anjana. Changing trends in emergency hysterectomy in obstetric practice in a large teaching hospital. J Obstetr Gynecol India. 1992;42(2):169-73.
14. Tunçalp O, Hindin MJ, Souza JP, Chou D, Say L. The prevalence of maternal near miss: a systematic review. BJOG. 2012;119(6):653-61.
15. Owolabi MS, Blake RE, Mayor MT, Adegbulugbe HA. Incidence and determinants of peripartum hysterectomy in the metropolitan area of the District of Columbia. J Reprod Med. 2013;58(3-4):167-72.
16. Bodelon C, Bernabe-Ortiz A, Schiff MA, Reed SD. Factors associated with peripartum hysterectomy. Obstet Gynecol. 2009;114(1):115-23.
17. Nwobodo E, Nnadi D. Emergency obstetric hysterectomy in a tertiary hospital in sokoto, Nigeria. Ann Med Health Sci Res. 2012;2(1):37-40.
18. Pradhan M, Yong S. Emergency peripartum hysterectomy as postpartum hemorrhage treatment: incidence, risk factors, and complications. J Nepal Med Assoc. 2014;52(193):668-76.
19. Chawla J, Arora C, Paul M, Ajmani S. Emergency obstetric hysterectomy: a retrospective study from teaching Hospital in North India over Eight Years. Oman Med J. 2015;30(3):181-6.
20. Rashmi MB, Rajkumari. Emergency Peripartum Hysterectomy: A 3- Year Review. IJCMAASE. 2015;6(1):60-3.
21. Abiodun O, Hassan O. Emergency peripartum hysterectomy in a developing country. J Obstet Gynaecol Can. 2012;34(10):954-60.
22. Archana K, Sahay PB. A clinical review of emergency obstetric hysterectomy. J Obstet Gynaecol India. 2009;59:427-31.
23. Knight M, UKOSS. Peripartum Hysterectomy in the UK: management and outcomes of the associated hemorrhage. BJOG. 2007;114(11):1380-7.
24. Singh R, Nagrath A. Emergency obstetric hysterectomy-a retrospective study of 54 cases over a period of 5 years. J Obstet Gyneco India. 2005;55:428-30.
25. Nazam R, Bansal P, Sharma R, Agrawal D. Emergency obstetrics hysterectomy: a retrospective study at a Tertiary Care Hospital. J Clin Diagn Res. 2010;(4):2864-8.
26. Onwuudiegwu U, Okonofua F. Emergency obstetric hysterectomy in a semi-urban hospital. Niger Med J. 1993;2(2):54-7.

Cite this article as: Patil R, Dave A. Emergency peripartum hysterectomy: a retrospective study at a tertiary care hospital. Int J Reprod Contracept Obstet Gynecol 2016;5:1322-6.