

Emergency Peripartum Hysterectomy for Primary PPH- An Obstetrician's Challenge

Preetha George¹, Mini Isac², V M Jayasree Thankachi³

ABSTRACT

Introduction: Every year approximately 5,00,000 women die of maternal causes worldwide. Approximately 99 % of these of death occur in developing countries of which Asia forms 45%. PPH is responsible for around 25 % of maternal mortality worldwide (Who 2007) reaching as high as 60 % in some countries. Study was done to determine the indication, risk factors, complication and the incidence of Emergency peripartum hysterectomy

Material and Methods: Case sheet of 29 patients who had undergone EPH between 2005 September to 2015 August in the Department of Obstetrics and Gynaecology of MOSC Medical College Hospital Kolenchery were studied.

Results: There were 29 EPH among 28871 births with incidence at the rate of 1 per 1000 births.

Indications of EPH were morbid adherence of placenta (62 %), Placenta praevia (20.6%), uterine atony (13.7%) and fibroids (3.44%). A significant association between previous caesarean section (CS) and EPH was confirmed - Relative Risk 5. Association with Age and EPH - RR 2.4 was also obtained. There was one maternal death. Maternal morbidity was significant (46%), urinary tract injury and febrile morbidity were the common complications.

Conclusion: This data identified abnormal placentation as the primary cause for EPH. The data also illustrates that EPH increases significantly with increasing parity, age and previous caesarean section.

Keywords: Emergency, Peripartum hysterectomy, Abnormal placentation

INTRODUCTION

EPH implies removal of uterus at the time of delivery or in the immediate post partum period for haemorrhage which is not responding to the conservative treatments.¹ It's one of the most challenging procedure in modern obstetrics. Obstetrics is a bloody business – Dr. Jack Pritchard.² Despite advances in medical and surgical fields Postpartum Haemorrhage is still continuing to be the leading cause of maternal morbidity and mortality.³ Review by a group of experienced Obstetricians led to conclusion that the majority of the death (73%) reported from Obstetric Haemorrhage could have potentially been prevented by prompt attention to clinical signs of bleeding and associated hypovolemia.⁴

Earlier Uterine Atony and Rupture were the most common indications for EPH. Recent studies show that these indications have been replaced by abnormal placentation which include placenta praevia and morbidly adherent placenta.

Study was done to determine the indication and risk factors of patients undergoing Emergency Peripartum Hysterectomy with the objective to study the incidence and complications of patients undergoing Emergency Peripartum Hysterectomy

MATERIALS AND METHODS

This case series study was conducted in MOSC medical college Hospital Kolenchery, India after obtaining approval from the ethics committee. This study covered the period of 10 years from September 2005 to August 2015.

Inclusion criteria

All antenatal patients who had undergone hysterectomy after 20 completed weeks of gestation for uncontrolled uterine bleeding which is not responding to conservative measures at the time of delivery or within 24 hours after delivery from the period of 2005 to 2015

Exclusion criteria

All patients who had hysterectomy done for other causes in the postpartum period after 24 hours like secondary PPH, postpartum uterine infection.

All patients who had peripartum hysterectomy during the study period were identified from the labour room delivery register which included all births. Operating theatre and pathology records were also checked as to ensure that no cases were skipped. Information on demographic and clinical variables as age, obstetric score, gestational age, indication for hysterectomy, drugs given, procedures done before proceeding to hysterectomy, blood transfusion, operating time, complications, and hospitalization period were obtained by review of the maternal case notes. Information about total number of deliveries and the CS during the study period were obtained from labour room statistics.

STATISTICAL ANALYSIS

Statistical analysis was done using CDC Epi info (US Department of Health and Human Services for Disease Control and Prevention). Descriptive statistics were used to infer results.

RESULTS

During the 10 year study period there were a total of 28871 deliveries in our institution of which 18412 were vaginal deliveries and 10459 were CS deliveries. Twenty nine women underwent EPH during this period (demographic data is

¹Associate Professor, ²Professor, ³Professor and HOD, Department of Obstetrics and Gynaecology, MOSC Medical College, Kolenchery, Kerala, India

Corresponding author: Dr Preetha George, Associate Professor, Department of Obstetrics and Gynaecology, MOSC Medical College, Kolenchery, Kerala, India.

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shown in table-1) with an overall incidence of 1/1000 deliveries. The rate of EPH was 2.1/1000 CS deliveries and 0.38/1000 vaginal deliveries.

The study included 4 women who were above 35 years. There were only 4 primigravida and 25 were multigravida (85.71%). 7 patients had vaginal delivery and the rest 22 had caesarean section. 22 patients (75.86%) had previous caesarean section.

Most common indication for EPH was abnormal placentation 24 women (82.6%). Out of which 18(60 %) had morbidity adherent placenta. 13.7% had uterine atony and 3.44 % cases had fibroids as the cause for EPH.

General Anaesthesia was given in 24 of these patients. Therest were given spinal. All women received oxytocin infusion, methyl ergometrine and PGF2 α . Uterine and Ovarian Artery ligation was done in 10 (35%) of cases. Internal Iliac Artery ligation was done in 6(21.4%). Suturing of placental bed was done in 10 (35.71%). Balloon tamponade was done

in one patient. Total abdominal hysterectomy was done in 25 of these patients and 4 had subtotal hysterectomy. One patient had significant bleeding from adnexae necessitating unilateral salpingo-oophorectomy.

The mean surgical time was 3.4 hr \pm 0.9(range 2.5-5.15 hrs). 28patients (96%) received blood transfusion. The mean blood transfusion received was 5.28 \pm 3.16 units. All women needed intensive care unit admissions. The mean post operative stay was 8.9 \pm 3.5 (range 7-15 days). Average baby weight was 2.48 \pm 0.66 kg.

Significant proportion of women suffered intra-operative and post operative complication which are given in table-2. Women who had injury to urinary tract were identified and repaired intra-operatively with no sequelae. None of the women had ureteric injuries.

DISCUSSION

This study has analysed the incidence and outcome of EPH in teaching hospital in south India. Hysterectomy following caesarean section was described by PORRO and was used to prevent maternal mortality due to PPH.⁵

EPH is one of the most challenging procedures in modern obstetrics. This is due to pregnancy induced anatomical changes in the organs, the need for timely intervention, blood loss and the need for performing it in an emergency setting.⁶ The incidence of EPH is 1 per 1000 deliveries in our series compares favorably with other reported incidence. Waniet el⁶ reports an incidence of 1.07/1000 where as Knee et al⁷ 0.33 and Joanna et al⁸ 0.41/1000.

Caesarean section as such increases the risk factors of EPH. In our study the rate of EPH was 2.1 per 1000 for CS deliveries as against 0.38 per 1000 for vaginal deliveries. As shown in the table-3, the relative risk of EPH was 5.53 for CS deliveries as compared to vaginal deliveries.

Increasing number of caesarean section increases the incidence of abnormal placentation. In our series 75.8% were delivered by CS and 59 % among them had 2 previous CS and 40 % had one CS. In a study by Kwee A et al the incidence of placenta accreta, increta or percreta requiring hysterectomy was 1.9/1000 deliveries in women with one prior CS which increased 47 fold to 91/1000 in women with previous CS.⁷ Waniet al⁶ reports an incidence of 83.9% CS in patients with EPH. Y. Yesbah⁹ reports an incidence of 86.2% CS in patients undergoing EPH.

Some of the known risk factors of EPH are CS, Previous CS, high parity and advanced maternal age. Many studies had shown that CS as such increase the risk factors of EPH. In agreement with these our study showed that rate of EPH was 2.1 per 1000 deliveries against .38 per 1000 for vaginal

Characteristics-	Mean \pm SD n = 29
Maternal Age	29.9+ 3.8
Parity	2.5+8
Previous LSCS	22
1 Prior CS	9
2 Prior CS	13
Prior uterine curettage	7
Myomectomy	1
Delivery	
Gestational age	35.6/(range27-38wks)
Vaginal Delivery	7
CS delivery	22

Table-1: Demographic and clinical data of 29 women who had EPH

Complications	No of women
Coagulopathy	3 (10.3 %)
Sepsis	3 (10.3 %)
Wound Infections	4 (13.7%)
Febrile Morbidity	5 (17.2%)
Respiratory Complications (Pleural Effusion, Pneumonia, Pneumothorax, ARDS)	4 (13.7%)
Blood Transfusion	28 (96%)
Stress Cardiomyopathy	1 (3.4%)
Depression	3 (10.3%)
ARF	2 (6.8%)
ICU Admissions	29 (100%)
Mortality	1 (3.4%)

Table-2: Complications associated with EPH

Risk factor for CS	No	Total	Rate of EPH	Relative Risk	95 % Confidence interval
Yes	22	10459	2.1	5.53	2.3643 To 12.947
No	7	18412	.38		

Table-3: Relative Risk of EPH with Caesarean Deliveries

Risk factor Age	No of EPH	Total	Relative Risk	95 % Confidence interval
>35	4	1775	2.4	0.85-7.01
<35	25	27096		

Table-4: Relative Risk of EPH with Age

deliveries.

Incidence of EPH is less where incidence of previous CS is less. Incidence of EPH in our series is higher than other series the reason could be attributable to higher incidence of caesarean rates.

The study concludes that relative Risk of EPH in elderly patients (Age>35) is 2.4 when compared to patients with age less than 35 (table-4). Studies by Dan O et al¹⁰ and Serena Wu et al¹¹ also reports that EPH is increased in elderly women

The Commonest cause of EPH in our series was abnormal placentation 82% followed by uterine atony (13%) and fibroids (3.4%). In accordance with recent observation our study found abnormal placentation as the commonest cause of EPH. Uterine atony and rupture are less common due to advances in pharmacological and surgical modalities for the treatment of uterine atony and better antenatal and intrapartum care. In 1984 Clark et al¹² reported that 43.4% of the emergency hysterectomies were done because of uterine atony while 30.9% were due to placenta praevia with accreta. A study from the same institution in 1993 by Stanco LM stated that primary indication was placenta accreta 45% followed by uterine atony which is 20 %.¹³

EPH is associated with high incidence of maternal morbidity and mortality. Our mortality was 3.4% and morbidity 46 %. The most common complications was urinary bladder injury with in accordance with Awan et al¹⁴ (17%) and Joanna et al⁸ (17.2%), Kwee⁷ (15%). Urological injuries are related to scarring and secondary adhesions of the vesico uterine space following previous CS. The febrile morbidity in our series was 17.2% which ranges from 6.7% to 50 % in other series. There was one maternal death in our study with in 2005 and no deaths after that. However rates of 4% with 4.5% were cited by Kwee⁷ (Nether lands) and Zorlu¹⁵ (Scandinavia) whereas much higher rates of 20 % and 23.8% were reported by Y. Yesbah¹⁶ Hamsho and Alaslakka¹⁷ (Qatar). Wound infection in our series was 13.7%, blood transfusion 87%, whereas Carolyn et al reports a 50% of wound infection and 87% for Blood transfusion.¹⁸

CONCLUSION

UN recognizes the unique significance of maternal mortality as a part of millennium declaration issued by UN General Assembly in Sep 2000. High incidence of maternal mortality is persisting in many developing countries. Obstetricians should be prepared for the possibility of EPH for massive hemorrhage in patients undergoing CS with the high risk factors. The limited experience of performing emergency hysterectomy among the younger obstetricians and the decreasing rare of abdominal hysterectomy intensifies the problem. So more effort should be undertaken to recognize the patients with increased risk for EPH. Antenatal USG, power Doppler and MRI should be done in these high risk patients. All potentially life saving devices and appropriate team should be assembled prior to delivery to decrease the maternal and neonatal morbidity associated with peripartum hysterectomy.

ABBREVIATIONS

EPH - Emergency peripartum Hysterectomy; CS - Caesarean

Section; RR – Relative Risk

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