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Emergency Peripartum Hysterectomy in a Tertiary Care Centre and Medical College of Jharkhand, India: A Retrospective Study

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Abstract- *Introduction:* Emergency Peripartum Hysterectomy (EPH) is a lifesaving surgical procedure that is associated with maternal mortality and morbidity, especially in developing countries. Worldwide, the rate of peripartum hysterectomy varies widely. Developing countries like India have higher incidence of EPH because more deliveries take place outside health facilities and are unsupervised or poorly supervised. The aim of this study was to find the incidence, indications, risk factors and clinical implications of EPH in a tertiary care referral centre of Jharkhand.

Material & Methods: This was a retrospective study to identify and analyse the cases of EPH at Rajendra Institute of Medical Sciences, Ranchi, Jharkhand between May 2018 to april 2019.

Observation & Result: During this study period, there were 9006 deliveries with 72 cases of EPH identified giving an incidence of 7:1000. Out of 72, only 50 cases were included in our study as: 36 patients (72%) belonged to 21 -30 years of age group and 14 (28%) were more than 30 years of age.

Keywords: *emergency peripartum hysterectomy, atonic pph, rupture uterus, placenta praevia, placenta accreta, rajendra institute of medical sciences, maternal mortality, maternal morbidity, fetal mortality.*

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Emergency Peripartum Hysterectomy in a Tertiary Care Centre and Medical College of Jharkhand, India: A Retrospective Study

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Conclusion: EPH is an obstetric emergency that has potentially devastating consequences .The rate of EPH is high, and the associated maternal –fetal outcome is poor at our institution. The worldwide increase in caesarian section rates may lead to a rise in the number of EPH required in future because of placenta praevia and morbidly adherent placenta and rupture uterus. Thus, there is a need for institutions to monitor their caesarian section rates.

Keywords: emergency peripartum hysterectomy, atonic pph, rupture uterus, placenta praevia, placenta accreta, rajendra institute of medical sciences, maternal mortality, maternal morbidity, fetal mortality.

I. Introduction

EPH is a lifesaving surgical procedure that is associated with maternal mortality and morbidity, especially in developing countries.[1] Emergency hysterectomy is the surgical removal of the uterus following an unexpected and sudden event. When it is carried out in a woman with a pregnant uterus less than 24 hrs after delivery, it is termed as emergency peripartum hysterectomy.[2,3] This life saving obstetric procedure has been in use for more than 100 years, since Edward Porro in 1876 published the first case report of a successful procedure in which both mother and baby survived.[2]

EPH is most commonly performed to arrest or prevent hemorrhage from intractable uterine atony, abnormal placentation or trauma to genital tract following instrumental delivery. Other indications are uterine rupture, placenta praevia and placenta accreta. Conservative measures to arrest bleeding are initially tried before considering EPH. The measures include uterotonic drugs, hemostatic compression sutures, stepwise uterine, ovarian and bilateral internal iliac artery ligation. Conservative methods should be applied when the patient is hemodynamically stable to avoid morbidity associated with hysterectomy. The major complications of hysterectomy include increased blood loss, bladder injury, coagulopathy, wound infection and death. Thus,

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peripartum hysterectomy is a near miss maternal event, and this intervention is performed in life threatening obstetric situations to prevent death.

Worldwide, the rate of peripartum hysterectomy varies widely .In high income countries less than 1:1000 deliveries is complicated by EPH [4] whereas in Nigeria and Pakistan, the incidence is 4 and 11:1000 deliveries, respectively.[5,6] The rate of EPH is increasing over time. [7] In USA, it increased by 12 % between 1998 and 2003[8] and by 15% between 1995 and 2007.[9]

Developing countries like India have higher incidence of EPH because more deliveries take place outside health facilities and are unsupervised or poorly supervised .There is high prevalence of risk factors such as multiple pregnancies, grand multi parity, unbooked cases and prolonged labour (which are associated with uterine atony). In getting appropriate care during labour has been attributed to poor development of essential obstetric care facilities. Most rural public hospitals and health centre do not function 24 hours per day and road networks and transportation systems to the cities are poor, especially in Jharkhand. Recent advances in the medical and conservative management of postpartum hemorrhage have reduced the rate of and the indications of EPH.[10]

The aim of this study was to find the incidence, indications, risk factors and clinical implications of EPH in a tertiary care referral centre of Jharkhand.

II. Material and Methods

This was a retrospective study to identify and analyse the cases of EPH at Rajendra Institute of Medical Sciences between May 2018 to april 2019. Case records were collected from medical records department and maternal characteristics, indications of hysterectomies, complications and types of surgeries were reviewed.

III. Observation and Result

During this study period, there were 9006 deliveries with 72 cases of EPH identified giving an incidence of 7:1000. Out of 72, only 50 cases were included in our study. The clinical characteristics of women with EPH are shown in table 1.

Table 1 shows demographic and clinical characteristics of women with EPH. 36 patients (72 %) belonged to 21 -30 years of age group and 14 (28%) were more than 30 years of age. 12 patients (24%) were grand multipara and 38 patients (76%) were between Para1 –Para 4. Most of the women (66 %) belonged to low socioeconomic status. 39 cases (78%) were unbooked. In 38 patients (76%), the gestational age was between 37 to 40 weeks.

Table 1: Demographic and Clinical Characteristics of Women with EPH

Characteristics	Category	No. of Cases	Percentage
• Age (years) -			
	15-20	00	00%
	21-30	36	72%
	31-40	14	28%
• Parity-			
	0	0	00%
	1-4	38	76%
	≥5	12	24%
• Socioeconomic status -			
	Upper	17	34%
	Lower	33	66%
• Booking status -			
	Booked	11	22%
	Unbooked	39	78%
• Gestational age -			
	28-36	12	24%
	37-40	38	76%

Table 2 shows mode of delivery and baby birth weight. Mode of delivery was vaginal only in 3 cases (6%). 27 women (54%) were delivered by caeserian section, out of which only 13 women were primary caesarian whereas history of repeat caeserian section was done in 14 (28%) cases. In 12 % cases, baby weight was > than 3.5 kg but most of the case (64%) had average baby weight at birth between ≥ 2.5 to ≤ 3.5 kg.

Table 3 shows distribution of cases on the basis of indications of LSCS. Primary caeserian section was done in 13 cases and there was history of previous cs in 14 cases. Repeat 2nd caeserian section was in 6 cases. In those cases where primary cs was done, placenta praevia was only in 4 (8%) cases but the incidence of placenta praevia was very high in repeat cs cases. It was 16% in patients with previous 1 caeserian and 12% with previous 2 caeserian section .The cases of placenta accreta was seen in cases of repeat caeserian cases only and the incidence was 6 % in cases with previous 2 cs. 19 cases (38%) presented with rupture uterus .In this study, instrumental delivery was nill. laparotomy was done in 20 cases (40%).

The main indication of EPH were rupture uterus (38%), placenta praevia (30%), placenta accreta (32%) and atonic PPH (36%). All the patients of rupture uterus were unbooked and brought from periphery in unstable condition and absent fetal heart.

In 38 patients (76%), subtotal hysterectomy was done and in 24 % total hysterectomy was done.

Table 3: Distribution of Cases on the Basis of Indications of Primary Lscs and Association with Placenta Praevia-Accreta

	No. of Cases	Percentage
• Primary CS	13	
Placenta praevia	4	8%
Abruptio placentae	1	2%
Fetal distress	1	2%
Malpresentation	3	6%
Obstructed labour	4	8%
• Previous 1 CS	8	
Placenta praevia	8	16%
Placenta accreta	2	4%
• Previuos 2 CS	6	
Placenta praevia	6	12%
Placenta accreta	3	6%
Total	27	54%

Table 4 shows the complications of EPH .Most common complication was wound sepsis. It was present in 24 patients (48%), followed by febrile morbidity in 14 (28 %). Wound dehiscence occurred in 3 cases. 1 case had ureteric injury which was managed successfully. Bladder injury occurred in 7 cases (14%). All those cases in which bladder and ureteric injury occurred, were post cesarian cases. Paralytiv ileus occurred in 2 cases (45). 1 patient had endotoxic shock .Minor complications like urinary tract infection occurred in 13 cases (26%).

Blood transfusion more than 4 units were required in 11 cases.

Table 4: Showing Complications Associated with EPH

Complications	No. of Cases	Percentage
Wound sepsis	24	48%
Febrile morbidity	14	28%
UTI	13	26%
Bladder injury	7	14%
Wound dehiscence	3	6%
Paralytic ileus	2	4%
Endotoxic shock	1	2%
Ureteric injury	1	2%
Relaparotomy	0	0%
Pelvic infection	0	0%
Relaparotomy	0	0%

Table 5 shows maternal and fetal outcome. There were 3 cases of maternal death. 2 cases were due to irreversible hemorrhagic shock and 1 was because of acute renal failure .There was 58 % fetal mortality overall and most of these cases were of rupture uterus.

Table 5: Showing Maternal and Fetal Outcome

Outcome	No. of Cases	Percentage
Maternal death	3	6%
Perinatal death	29	58%

IV. Discussion

The incidence of EPH varies in literature from 0.2 to 2.7 per 1000 deliveries.[11] In our study, the incidence was 7 per 1000 deliveries. This is slightly higher which may be because in developing countries like ours, there is high prevalence of risk factors for EPH such as multiple pregnancy, grand multiparity, cephalopelvic disproportion, prolonged labour, previous caesarian, placenta praevia In addition, most pregnant women are unbooked and undergo labour and delivery outside the health facilities without the assistance of a skilled healthcare provider. This is a result of low level of literacy, marriage at an early age, socioeconomic deprivation of women, desire for a large family and low prevalence of contraceptive users.

The incidence of EPH occurring with history of previous cesarian section had increased significantly over the last few decades .In the present study, 31 patients (62 %) had previous 1 or 2 cesarian section. This is consistent with the findings in the recent literature, with a range of 18.8 to 60.5%.[12]

The association between the incidence of EPH with a history of previous cesarian section is mainly because of morbidly adherent placenta .In the present study, placenta accreta was an important indication for EPH and accounted for 5 (10%) of our cases of EPH. There has been a remarkable increase in the incidence of placenta accreta over the past 50 years and it has been the most common indication for EPH in recent studies where it has accounted for 38 - 50% of all cases of EPH.[13] This has been attributed to the increasing caesarian rate and the concomitant rise in the prevalence of placenta praevia and placenta accreta worldwide. [14]

Uterine atony was another frequent indication for EPH in our study accounting for 18 (36%) of all cases. The incidence of atonic pph has declined relatively over the decades due to increased success of treatment with uterotonic agents, embolisation and better surgical procedures. However, this largely preventable indication for EPH continues to predominate in developing countries due to lack of proper facilities and delayed patient referral from distant areas.[15]

Rupture of uterus accounted for 38% of all cases of EPH in the present study. There has been a significant decrease in the incidence of uterine rupture as the indication of EPH in the developed world where it accounts for only 4% of cases of EPH, [16] but it continues to be a predominant indication in developing countries like India due to grand multiparity, lack of antenatal care and unsupervised labour at home.[17] Studies from developing countries have shown that 74% of cases referred to tertiary centres were because of mismanagement by the unskilled birth attendant .[18]

Uterine rupture and placenta praevia accreta were risk factors that were significantly associated with EPH in this study, a finding in agreement with other studies from developing countries. [19] This is probably because uterine rupture and placenta praevia accreta tend to be relatively less amenable to medical and conservative surgical management and mostly necessitates radical surgical interventions such as hysterectomy. Placenta praevia accreta may predispose to partial separation of placenta in which EPH is usually required to control hemorrhage.[20]

The choice between total and subtotal hysterectomy has long been debated. Due to potential risk of developing malignancy in the cervical stump, total hysterectomy is the preferred surgical method .The future rise of cervical stump carcinoma is low (0.1% to 0.15 %) [21] and can be prevented by regular cytological screening.[22] However, there are several advantages of subtotal hysterectomy like lesser blood loss, reduced operating time and reduced intra and post operative complications.[23] Other studies have shown that both types of hysterectomies are comparable with regards to blood loss and complication rates.[24] The final decision to perform subtotal or total hysterectomy should be influenced by patient 's condition.

In this study, 38 (76%) patients had subtotal hysterectomy, probably because most of the patients were not fit for surgery and anaesthesia. The cervix and paracolpos are not usually the source of hemorrhage and so subtotal hysterectomy is adequate to achieve haemostasis.[25]

In our study, maternal mortality was 6 %. This high mortality rate could be due to delay in carrying out the lifesaving hysterectomies. A sequence of conservative measures to control uterine hemorrhage are attempted before resorting to hysterectomy. Delay is associated with further bleeding, anemia and DIC. Timing is critical to an optimal outcome.

The high perinatal mortality rate (58%) found within study was probably because in most of the cases EPH was done for rupture uterus or placenta praevia .After uterine rupture, immediate laparotomy is necessary to salvage the fetus and this is not feasible in patients who deliver outside the hospital.

V. Conclusion

EPH is an obstetric emergency that has potentially devastating consequences. The rate of EPH is high, and the associated maternal –fetal outcome is poor at our institution .The worldwide increase in cesarian section rates may lead to a rise in the number of EPH required in future because of placenta praevia and morbidly adherent placenta and rupture uterus. Thus, there is a need for institutions to monitor their cesarian section rates. Beside that, improvement in female literacy level, prevalence of contraception, effective and efficient antenatal care, provision of institutional delivery with adequate facilities, and efficient blood transfusion services are also needed to reduce the rate of EPH and to improve the outcome.

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