ORIGINAL ARTICLE

A TEN YEAR REVIEW OF EMERGENCY PERIPARTUM HYSTERECTOMY IN A TERTIARY CARE HOSPITAL

Bushra Khan, Baynazir Khan*, Ruqqia Sultana, Rubina Bashir, Farhat Deeba**

Department of Obstetrics and Gynaecology, *Neurosurgery, Ayub Teaching Hospital,
****Department of Obstetrics and Gynaecology, Women Medical College, Abbottabad, Pakistan**

Background: Emergency peripartum hysterectomy (EPH) is a life saving procedure considered in cases of severe haemorrhage unresponsive to medical and conservative surgical procedures. The aim of present study was to review the frequency, indications, maternal morbidity and mortality associated with emergency peripartum hysterectomy in a tertiary care hospital in a developing country. **Methods:** This was a cross sectional study in which data was retrospectively collected from January 2000 to December 2010. Main outcome measures were maternal morbidity and mortality associated with EPH. **Results:** The incidence of EPH was 10.52/1000 deliveries. The main causes of EPH were rupture uterus 76 (34.86%), atonic uterus 65 (29.81%), placenta accreta 19 (8.71%), placenta previa 17 (7.7%), and placental abruption 36 (16.5%). Mostly subtotal hysterectomy was the preferred method done in 196 (89.9%) of cases, while total abdominal hysterectomy was done only in 22 (10.09%) of cases. The over all complication rate was 81.2% which included both minor and major complications like hypovolemic shock 180 (82.5%), febrile morbidity 108 (49.5%), wound infection 40 (18.3%), bladder injury 6 (2.75%), and thrombophlebitis 22 (10.09%). The maternal mortality in present review was (10.5%). **Conclusion:** Frequency of EPH was found to be high in this study. Obstetricians must be skilled in it particularly in developing countries where the main indication of hysterectomy is rupture uterus.

Keywords: Emergency peri-partum hysterectomy, maternal morbidity, maternal mortality

INTRODUCTION

Obstetric hysterectomy is performed for a haemorrhage after delivery which is unresponsive to other treatments.[1] In modern obstetrics, the overall incidence is 0.05%[2], but there are considerable differences in incidence in different parts of the world depending on modern obstetric services. In the past the most common indication of EPH was uterine atony and uterine rupture[3,4]. Recent reports show that abnormal placental adherence and placenta previa are emerging as the major indications of EPH.[5,6]

Post partum haemorrhage (PPH), according to the WHO, causes 25% of maternal deaths.[7] In Pakistan haemorrhage is the most common cause of maternal mortality.[8,9] Emergency obstetric hysterectomy is usually undertaken for life threatening obstetric haemorrhage. In Pakistan rupture uterus has been reported to be the most common cause of PPH requiring obstetric hysterectomy[10,11] whereas in the developed countries abnormal placental adherence and placenta previa seem to be the more common indications[12]. Emergency obstetric hysterectomy is more common in developing countries like ours because of high incidence of un-booked and improperly supervised deliveries outside the hospitals. The delay in presentation in the hospital makes emergency obstetric hysterectomy to be associated with high foeto-maternal mortality and morbidity.[13]

The purpose of our study was to know the frequency, indications, and outcome of obstetric hysterectomies at a tertiary level hospital, which mainly caters to the rural population. Secondarily, we aimed to identify the complications associated with this emergency surgery.

MATERIAL AND METHODS

We retrospectively analyzed a total of 218 women who underwent emergency peripartum hysterectomy between January 2000 and December 2010 at Ayub Teaching Hospital, Department of Gynaecology, unit B, Abbottabad. The data was collected from the hospital records. All women who underwent hysterectomy in the immediate peripartum period (within 24 hours of delivery) were included in this study. Also women who had septic induced abortion or had perforation during evacuation either in hospital or by untrained midwives outside hospital, who underwent hysterectomy, were included in the study. Some obstetric hysterectomies were done because of a coexisting gynaecological problem like fibroid uterus and ovarian malignancy were also included.

The medical record sheets of all identified women were reviewed regarding parity, antenatal booking status, type of hysterectomy, its complications, maternal morbidity and mortality. Indications of obstetric hysterectomy were also identified. Consultants, senior registrars and senior medical officers performed all the hysterectomies.

Complications which occurred in some women who underwent hysterectomies were: septicaemia, febrile morbidity, wound infection, burst

abdomen, paralytic ileus, coagulopathy, bladder injury, ureteric injury, pneumonitis, thrombophlebitis, hypovolemic shock and renal failure. Few women required reopening either to secure haemostasis or to remove retained foreign body. Anaesthesia related complications like delayed recovery, Mendelson syndrome, and cardiac arrest were also identified. All women who required hysterectomy needed blood transfusion. There were minor blood transfusion reactions like urticaria, fever and flushing and major reactions like mismatch blood transfusion reaction leading to maternal death.

Data was collected on a pro forma and entered into computer using SPSS version 10 for analysis. Permission of the institutional ethical committee was obtained before recording data on pro forma with the assurance of its confidentiality.

RESULTS

A total of 20,708 women delivered in 10 year study period in Ayub Teaching Hospital, Pakistan. Out of these 8,120 had Caesarean section while 12,500 delivered vaginally and 88 had rupture uterus and were delivered by laparotomy. Emergency peripartum hysterectomies were performed in 218 women. The incidence of Emergency peripartum hysterectomy was 10.52/1,000 deliveries. Most of the women were un-booked (74.31%) while women who were booked and had to under go hysterectomy were 56 (25.86%). It was seen that multiparity also contributes to EPH (Table-1). The main indications of EPH were rupture uterus, uterine atony and placental abnormalities (Table-2).

Rupture uterus was seen in 88 women and 76 (34.86%) of these had EPH while 12 had repair of rupture uterus. Atonic uterus and placenta accreta contributed 65 (29.81%) cases and 19 (8.71%) cases respectively to EPH. It was noticed that some women who under went Peripartum hysterectomy had two or more indications for EPH like placenta previa along with placenta accreta or abruptio placentae leading to atonic uterus. Other indications were placenta previa 17 (7.7%) cases and Abrutio placentae 36 (16.5) cases. There were 22 (10%) women with previous caesarean section who underwent EPH. Out of these 22 women one had EPH due to extension of tear during caesarean section laterally involving uterine vessels, 8 had associated placenta accreta, 5 had placenta accreta with placenta previa, while 8 had some other indication for EPH. There were 2 (0.9%) patients who had extension of cervical tears into uterus during instrumental delivery who ended up with EPH. Chorioamnionitis as an indication of EPH was seen in 8 (3.6%) women out of these 8 women, 5 had massive PPH for which EPH was done while 3 had foul smelling gangrenous uterus and there was high risk of women going in to septicaemia so EPH was done. There were 6 (2.75%) women who had perforation during termination of pregnancy for which EPH was done. Out of these 5 women had perforation done outside hospital by untrained personnel while one had perforation done by a junior trainee. In all these cases either uterus was septic and gangrenous or had a co existing previous gynaecological problem with complete family. There were 4 (1.8%) women with fibroid uterus who had EPH. One had a huge fibroid in the lower segment, two had PPH due to fibroid and 1 had previous menorrhagia with complete family. There was one grand multi-gravida women who had 28 weeks molar pregnancy and fundal height of 38 weeks who underwent EPH due to heavy per vaginal bleeding during suction curettage. Ovarian malignancy with coexisting term pregnancy was seen in one patient who under went EPH.

Total abdominal hysterectomy was performed in 22 (10.09%) women and sub total in 196 (89.9%). Majority of subtotal hysterectomies were done for ruptured uterus and atonic uterus. While total abdominal hysterectomies were done mostly in placenta accreta, placenta preavia and for co existence gynaecological problems.

The complications in women under going EPH were assessed and are tabulated in Table-3.

Table-1: Parity of women

	No.	%
Primipara	49	22.4
G2–G4	58	26.60
G5 and above	111	50.91

Table-2: Indications for EPH

	No.	%
Rupture uterus	76	34.86
Atonic uterus	65	29.81
Placenta accrete	19	8.71
Placenta previa	17	7.7
Extension of Tears during Instrumental delivery	2	0.9
Extension of Tears during Caesarean section	1	0.4
Abruptio placentae	36	16.5
Chorioamnionitis	8	3.6
Fibroid uterus	4	1.8
Hydatiform mole	1	0.4
Ovarian malignancy	1	0.4
Perforation of uterus during termination of pregnancy	6	2.75

Table-3: Complications of EPH

Complications	No.	%
None	41	18.8
Septicaemia	12	5.5
Febrile morbidity	108	49.5
Wound infection	40	18.3
Burst abdomen	4	1.8
Paralytic ileus	20	9.17
Coagulopathy	32	14.67
Bladder injury	6	2.75
Ureteric injury	1	0.45
Thrombophlebitis	22	10.09
Hypovolemic shock	180	82.5
Retained foreign body	1	0.45
Renal failure	7	3.2
Pnemonitis	14	6.42
Blood transfusion reactions	14	6.42

DISCUSSION

Emergency peripartum hysterectomy still remains the necessary tool for obstetricians. Knowledge of this operation and skill at its performance safe lives in catastrophic rupture of the uterus or intractable PPH.

Incidence of EPH in present study was 10.52/1,000 deliveries. It was 2.72 after normal vaginal delivery and 13.3 after caesarean section. The incidence of EPH after laparotomy followed by delivering of baby from abdominal cavity after ruptured uterus was highest and it was 863/1,000 deliveries. This incidence is highest than many other studies[14–17] because over institution is important referral centre of the area. Most women are un-booked and are received in a moribund condition after being maltreated by unskilled personals outside hospital.

Guzel conduct a study on peri-partum hysterectomy in Turkey[18] and the incidence in there study was 5.38/1,000 deliveries. Our study is comparable to a study conducted in India by Najam[19] where the incidence of EPH was 10.05/1,000 deliveries. In developed countries, the reported incidence of EPH is below 0.1% of the normal deliveries performed, while in developing countries the incidence rates are high as 1–5/1,000 deliveries performed.[18,20] We observed and incidence of 10.52/1,000 deliveries in our study, which was higher than the incidence reported in a study[21] done in the same area in 2004. This shows that there is an increasing trend towards EPH owing to ignorance and illiteracy, coupled with poor socio-economical conditions, women with high risk pregnancy get only a formal treatment out side hospital. Secondly there is a tremendous rise in private practitioners with minimal skill in the area as a result mishandling and delayed referral has resulted in increased EPH. A study conducted by Noor[22] in Lady Reading Hospital Peshawar had the highest incidence (29.9/1,000 deliveries) of EPH.

Majority (74.31%) of the women were un-booked while only 25.68% women were booked. In our study 50.91% women who underwent obstetrical hysterectomy were multi-gravida (average gravidity 5 and above). This shows that high parity is a risk factor for obstetrical hysterectomy.

The main indications for EPH were ruptured uterus (34.86%) and uterine atony (29.81%). Sahu *et al*[23] and Mukerjee *et el*[24] in their series reported an incidence of 38% for ruptured uterus, while Noor[22] in their study reported 54.5%. A study conducted in India by Najam[19] reported incidence of ruptured uterus as 45.8%. Our study is comparable to another study conducted in Pakistan by Nusrat[20] in which incidence of ruptured uterus and uterine atony were 33.3% and 28.6% respectively.

In our study placenta previa and placenta accreta contributed 7.7% and 8.71% respectively to EPH. There were 10% women with previous caesarean section who had EPH. Out of these patients 36.3% had associated placenta accreta while 22.7% had placenta accreta along with placenta previa. This shows that previous caesarean section is a risk factor for abnormal placentation.[25,26]

In a study conducted by Begum[21] the incidence of abnormal placentation was 14.28% while in our study it is 16.17%. There is a rise in abnormal placentation due to increasing caesarean section rate. There were 16.5% cases with abruption placentae leading to couveliare uterus and ultimately uterine atony not responding to general measure, which needed hysterectomy to save women's live. Noor[22] reported 37.50% cases requiring EPH for abruptio placentae while Begum[21] reported 14.28% cases requiring EPH for abruptio placentae which is comparable to our study.

Another indication for obstetrical hysterectomy in this series was extension of tears and lacerations during delivery. This included 2 cases after instrumental vaginal delivery and one case after caesarean section. Noor[22] had a very high incidence 7.9% of extension of tears leading to EPH. In developed countries there is no such indication of EPH because in our setup women who sustain these tears are admitted with obstructed labour and so are at risk of such complications.

Chorio-amniotits accounted for 3.6%, while perforation of uterus outside hospital during termination of unwanted pregnancy accounted for 2.75% of cases. These two indications are not highlighted in most of the studies conducted so for but they account for about 6.35% of EPH in this part of the world. This is because people in this area are not health oriented and termination of pregnancy is considered illegal by law, so women undergo termination of pregnancies due to poverty and large family size by untrained traditional birth attendants. Only those cases of chorioamnionitis and perforated uterus needed EPH where the uterus was gangrenous and was a source of septicaemia.

Subtotal hysterectomy was the preferred method in most cases. It is a safe and a quick procedure when the condition of the women needs immediate arrest of haemorrhage to save her life.

The maternal mortality amongst our women was 10.5% comparable to 9.3% reported by Ambiye and Venkatraman[27] and 8% reported by Afaf[28]. Mantri *et al*[29] reported 14% mortality, Noor[9] reported 17% mortality and Allahabadia and Vaidya[30] reported 32%. Sturdee and Rushton[14] reported no mortality in their series of 47 cases.

EPH was associated with postoperative complication in 81.2% cases, which shows that it is a major procedure associated with many minor

complications and a few major life threatening complications. This study emphasised that other surgical techniques to conserve uterus like uterine artery legation, tubo-ovarian artery legation, application of B-Lynch suture, internal iliac artery legation need to be considered where appropriate before proceeding to this major surgery.

CONCLUSION

Incidence of obstetric hysterectomy was found to be high in this study. Family planning services, access to antenatal care and hospital delivery can reduce this incidence. Policy makers need to take necessary action against unskilled private practitioners to reduce the incidence of rupture uterus which is the leading cause of peripartum hysterectomies. In severe obstetric haemorrhage it is dangerous to wait too long before embarking on definitive therapy.

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Address for Correspondence:

Dr. Bushra Khan, Department of Obstetrics & Gynaecology, Ayub Medical College, Abbottabad. **Cell:** +92-332-8917837

Email: alrazimedicalstore@yahoo.com