ORIGINAL ARTICLE

Emergency Peripartum Hysterectomy

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Abstract

Objective: To determine the incidence, indications and maternal outcome in patients with emergency peripartum hysterectomy (EPH).

Study Design: A prospective observational study.

Setting and Duration Of Study: Department of Obstetrics and Gynecology, Liaquat National Hospital , Karachi, Pakistan, from 1st April, 2010 to 31st March, 2011.

Methodology: All patients who underwent peripartum hysterectomy over a period of one year were included. Data, specifically on the incidence of emergency peripartum hysterectomy in total number of deliveries, the maternal parameters, the indications of peripartum hysterectomy and associated maternal morbidity and mortality were recorded on a proforma. All analysis and computation including database were done by SPSS 10.

Results: There were 14 cases of peripartum hysterectomy (12 caesarean hysterectomies, 85.7% & 2 postpartum hysterectomies, 14.3%), for a rate of 9.5/1000 deliveries. The mean age was 31+3 years (range 22-39 years) and parity was 3.3 (2-9). Overall, the most common indication for emergency peripartum hysterectomy was morbidity adherent placenta with placenta previa (57%) followed by uterine rupture (21.4%), sepsis (14.3%) and uterine atony (7%). Total abdominal hysterectomy was performed in 78.6% and sub-total hysterectomy in 21.4%. Relaparotomy was performed in 3 cases (21.4%). All women, 14 (100%) required blood transfusions, 8 (57%) require ICU admissions, 4 (28.6%) developed DIC, 4 (28.6%) pulmonary oedema, 1 (7%) paralytic ileus, 1 (7%) bowel obstruction, febrile illnes 3 (21.4%), 4 (28%) had bladder injuries and 2 (14%) had adnexal injury requiring oopherectomy. One (7.1%) Maternal death occured and 100% perinatal mortality in ruptured uterus cases.

Conclusion: Emergency peripartum hysterectomy is potentially a life saving procedure associated with significant maternal morbidity and mortality. Morbidly adherent placenta with placenta previa was the commonest indication for EPH. Previous scar, multiparity and abnormal placentation were the significant risk factors.

Keywords: Obstetrical hysterectomy, Peripartum hysterectomy, Maternal morbidity

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Introduction:

Emergency peripartum hysterectomy (EOH) by definition is a life saving procedure performed at the time of delivery or in the immediate postpartum period in case of intractable obstetrical haemorrhage unresponsive to other measures[1]. Maternal mortality rates associated with emergency hysterectomy range from 0 to 30%, with the higher rates in regions with limited medical and hospital resources.[2]

In Pakistan, an estimated 30,000 maternal deaths occur annually that is one woman dies every 20 minutes. Majority of maternal deaths occur in the postpartum period (69%) and the most common indication is severe uterine hemorrhage[3,4] that contributes to 25% of direct maternal deaths[5,6]. Such hemorrhage may be due to abnormal placentation (eg, placenta previa, accreta, increta or percreta), uterine atony, uterine rupture, leiomyomas, coagulopathy, sep-

sis or laceration of a uterine vessel not treatable by conservative measures.

Peripartum hysterectomy may also be scheduled for patients with stages IA2 and IB1 cervical carcinoma, which can be managed by radical hysterectomy following a planned cesarean delivery. The main complications related to emergency peripartum hysterectomy include blood transfusions, need for reexploration because of persistent bleeding, febrile morbidity, major surgical complications and maternal death.

Moreover,it is considered one of the most devastating complications in obstetrics resulting in high costs to the health care system and adverse outcomes for women desiring to maintain their fertility. The aim of the study is to determine the incidence, indications, type of hysterectomy and associated morbidity and mortality with emergency peripartum hysterectomy.

Methodology:
This prospective study was undertaken in the department of Obstetrics and Gynaecology at Liaquat National Hospital, Karachi, Pakistan from 1st April 2010 to 31st March 2011. All emergency peripartum hysterectomies done for primary or secondary PPH were included in the study.

A proforma containing the patients biodata i.e. the maternal age, parity , booked or unbooked, details of risk factor in index pregnancy, gestational age, mode of delivery, indications of emergency peripartum hysterectomy, type of hysterectomy, maternal morbidity i.e. intraoperative and postpartum complications and associated maternal mortality were recorded. Intraoperative complications were defined as the injury to major vessels, badder , bowel or adnexa. Post-operative complications were defined as the adverse events that occurred after or as a result of the procedure. All cases were operated by senior consultant after taking an informed written consent, under general anesthesia and all patients received prophylactic antibiotics and blood transfusions. Cases proceed to hysterectomy when conservative measures have failed that includes bimanual uterine massage or compression, the use of intravenous oxytocics and intramural prostaglandins , curettage of the placental bed , application of a uterine pack and suturing of placental bed.

Peripartum hysterectomies for cancer or deliveries before 24 weeks of gestation were excluded from the study. Patients followed in the immediate postoperative period and six weeks after to diagnose and treat any complication.

Results:
A total of 1470 obstetric cases were seen during the study period. Among these, EPH were carried out in 14 cases giving a frequency of 9.5/1000 cases.

All hysterectomies were done for primary PPH except 2 cases which were done for secondary PPH. Only 3 cases (21.4%) were booked, while the remaining 11 cases (78.6%) were unbooked. Unbooked cases were from different private maternity homes and level –I & level-II hospitals.

The mean age of patients undergoing EPH was 31+ 3 years and majority of the cases (n=11) were carried out in multipara and only 3 in grandmultipara. Previous scar, 71.4% (n=10) and abnormal placentation, 50% (n=7) were the major risk factors.

Morbidly adherent placenta with placenta previa was the most common indication of EPH 57.1% (n=8) followed by uterine rupture in 21.4% (n=3). Sepsis though a rare cause in developed countries was responsible for 14.3% and Uterine atony not responding to uterotonics accounts for 7.1% (n=1). (Table 1)

Total abdominal hysterectomy was performed in 11 patients (78.6%) while subtotal hysterectomy was done in 3 (21.4%) cases. All patients received blood transfusions ranging from 3-10 units and prophylactic antibiotics.

Lesions to the urinary bladder occurred in 2 cases intra-operatively while in 2 cases of EPH which were performed mainly due to uterine rupture, bladder was found to be ruptured

Table 1: *Causes of hemorrhage in women undergoing emergency obstetric hysterectomy*

Causes	Frequency	Percentage
Uterine Atony	1	7.1%
Uterine rupture	3	21.4%
Placenta previa / Morbidly adherent placenta	8	57.1%
Sepsis	2	14.3%
Extended cervical tears	0	___
Uterine fibroids	0	___

along with the uterus. Serosal injury to the small bowel occurred in 2 cases (14.3%). All injuries recognized and repaired immediately. Bilateral or Unilateral salpingo-oophorectomy was performed in two patients (14.3%) for persistent adnexal bleeding.

Out of 14 patients, 8 patients (57.1%) required ICU care in the postoperative period. Disseminated intravascular coagulopathy (28.6%) requiring blood, platelets or fresh frozen plasma transfusions and pulmonary edema (28.6%) were the major morbidities (Table 2). Three patients underwent re-exploration laparotomy, one for persistent hemorrhage and shock, and the others two for removal of abdominal packs placed at the time of primary surgical procedure. One (7.1%) maternal death occurred due to morbidly adherent placenta with intractable bleeding, disseminated intravascular coagulopathy and pulmonary edema.

Discussion:

The frequency of EOH in the index study is 0.95% which is quite high from the the reported rates of EOH in the literature from developing countries i.e. 0.2-0.4%.[7,8] but is quite low from the reported studies of Peshawar, Pakistan.[9,10]. The difference in the incidence of EOH may be explained by the increase number of un-booked cases for antenatal care and increased number of referred cases with detrimental health condition.

Table 2: *Postoperative complications of peripartum hysterectomy*

Complications	Frequency	Percentage
Blood transfusion	14	100%
ICU admissions	8	57.1%
Febrile illness	3	21.4%
Sepsis	2	14.3%
Wound dehiscence	0	0
Coagulopathy	4	28.6%
Pulmonary edema	4	28.6%
Paralytic ileus/ Bowel obstruction	1/1	7% each
Acute renal failure	0	0
Re-laprotomy	3	21.4%
Prolonged hospital stay >7days	12	85.7%

As in other studies, however, risk factors for peripartum hysterectomy were the same, including current cesarean birth, previous cesarean birth, abnormal placentation and multiparity.[11]

Morbidly adherent placenta was the commonest indication for EOH in our study which is similar to the studies reported from developing countries[12,13] as explained by the increased number of caesarean deliveries which further increases the risk for future abdominal deliveries, uterine rupture and abnormal placental implantation.

Ruptured uterus is the second most common indication for EOH (21.4%) in our study and is considered as one of the dreaded complications of pregnancy and a cause of obstetric hemorrhage associated with significant maternal & fetal morbidity & mortality. Among the three cases of uterine rupture, right side of the uterus was involved in one case with broad ligament hematomas and massive hemoperitoneum and in other two cases, rupture was on left side of the uterus extending upto the vaginal portion of the cervix. Bladder was also found to be ruptured in two cases along with the uterus and the perinatal mortality was 100%.

In Pakistan, ruptured uterus has been reported to be the most common cause of PPH requiring emergency obstetric hysterectomy.[14] Similar findings was observed in Yucel O et al study[15]. Occurrence of uterine rupture is significantly associated with grand multiparity, scarred uterus, lack of antenatal care, unsupervised labor at home, injudicious use of oxytocin, and low socioeconomic status of the women. These factors are largely preventable.

Sepsis though not a common reason for emer-

gency hysterectomy but still accounts for 14.3% cases of EOH in our study, much higher than the study of Nasima siddiq[16]. Cesarean scar infection and necrosis particularly with clostridial infections and myometrial abscess formation, in which antibiotic treatment fails to control the sepsis are some of the indications for EOH due to sepsis.

Uterine atony accounts only 7% for EOH in our study, however, it is the main cause of postpartum hemorrhage[17,18]. The declined incidence of emergency peripartum hysterectomy for uterine atony is explained by the active management of third stage of labour and newly developed conservative pharmacological and surgical treatment strategies.[19]

Total abdominal hysterectomy was performed much more frequently (78.6%) than subtotal hysterectomy (21.4%) but several studies suggested that subtotal hysterectomy is associated with shorter operating time, less visceral damage and decrease blood loss and shorter hospital stay but leave the cervical stump for future malignancy and need for regular cytology.[20]

All patients received transfusions of blood and blood products and majority of them require ICU care. Coagulopathy and pulmonary edema were the most common maternal morbidities similar to the findings in other studies.[21,22,23] Maternal mortality was occurred in one case accounts 7.1% which is much lower than the study of Nisar N et al [24] but much higher as compared to the developed countries.

Conclusion:

Peripartum hysterectomy is potentially a life saving procedure done in emergency situations. Morbidly adherent placenta with placenta previa was the commonest indication for EOH. Morbidly adherent placenta, previous scar and multiparity were the significant risk factors. Proper antenatal care, early referrals and delivery of high risk group of women by skilled birth attendants and liberal blood transfusions and reducing the number of unnecessary caesarean sections are the keys to reduce the morbidity and mortality associated with EOH.

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