

EMERGENCY PERIPARTUM HYSTERECTOMY: FREQUENCY, INDICATIONS AND MATERNAL OUTCOME

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Background: Emergency Peripartum Hysterectomy (EPH), although rare in modern obstetrics, remains a life saving procedure in cases of severe haemorrhage. The aim of present study was to review the frequency, indication, associated risk factors, maternal morbidity and mortality associated with emergency peripartum hysterectomy in a private sector teaching hospital. **Methods:** This was a retrospective review carried out from August 2003 to September 2008. Main outcome measures were frequency, indications, associated risk factors and maternal morbidity and mortality associated with Emergency Peripartum Hysterectomy. **Results:** The frequency of emergency peripartum hysterectomy over a study period was 0.42%. Mean age and parity of patients was 30.9±5.0 years and 4.52±1.8 respectively. The mean gestational age at the time of delivery was 36±3.4 weeks. Nine (42.9%) patients had previous history of caesarean delivery. Main indication for EPH were rupture uterus 7 (33.3%), uterine atony 6 (28.6%), morbid adherence of placenta 5 (23.8%) and severe bleeding from placental bed in 3 (14.3%) patients. All woman required blood transfusion, 11 (52%) require ICU admission, 81% were anaemic, 3 (14.3%) developed DIC, 4 (19%) pulmonary oedema, febrile illness 6 (28.6%) and wound disruption was seen in 3 (14.3%). The maternal mortality occurred in 4 (19%) cases. **Conclusion:** Frequency of emergency peripartum hysterectomy is high in our set up. High parity, rupture uterus, increase number of caesarean deliveries and abnormal placentation was identified as risk factors for EPH. High frequency of maternal morbidity and mortality was observed in the present study. **Keywords:** Emergency Peripartum Hysterectomy, maternal morbidity, maternal mortality

INTRODUCTION

Emergency Peripartum hysterectomy is one of the life saving procedure performed after vaginal delivery or caesarean birth or in the immediate postpartum period in cases of intractable haemorrhage due to uterine atony, rupture uterus and placental disorders and it is usually reserved for the situations where conservative measures fail to control the hemorrhage.¹ In past the most common indications of EPH was atony and uterine rupture.^{2,3} Recent reports shows that abnormal placental adherence/placenta previa is emerging as the major indication for EPH and is most likely related to increase in number of caesarean delivery observed over the past two decade.^{4,5}

Emergency Peripartum Hysterectomy is associated with severe blood loss, risk of transfusion, intraoperative complications and significant postoperative morbidity and mortality.⁶⁻⁸ The high incidence of morbidity and mortality is reported from developing countries.⁹

Several studies from different regions of Pakistan have reported different frequencies, indications and maternal outcome associated with Emergency Peripartum Hysterectomy.

The purpose of present study was to determine the frequency, indications, associated risk factors and maternal morbidity and mortality associated with emergency peripartum hysterectomy in a tertiary care private sector hospital in Hyderabad, Pakistan.

MATERIALS AND METHODS

This retrospective review was carried out in the Department of Obstetrics and Gynaecology, Isra University Hospital, Hyderabad, Sindh from August 2003 to September 2008.

All the patients who underwent Emergency Peripartum Hysterectomy were identified from the labour ward registers, operating room record books and intensive care unit registers. Emergency Peripartum Hysterectomy was defined as a hysterectomy performed for haemorrhage unresponsive to other treatment within 24 hours of delivery.

The medical record sheets of all identified patients were reviewed regarding the maternal age, parity, socioeconomic status, antenatal booking status, gestational age at time of delivery, previous history of caesarean delivery, history of antepartum haemorrhage, mode of delivery, indication for peripartum hysterectomy, peripartum complications and maternal morbidity and mortality. All data gathered was entered and analysed using SPSS 12.

RESULTS

Over the study period, 21 emergency peripartum hysterectomies were performed at Isra University Hospital. During the same period total 4,923 deliveries including 2,778 caesarean and 2,145 vaginal deliveries were conducted.

The frequency of peripartum hysterectomy therefore was 0.42%. It was 0.5% after caesarean deliveries and 0.32% after vaginal deliveries. The mean age of patients was 30.9±5.04 years, while the mean parity was 4.52±1.8 with a range from 2–8.

Fourteen (66.6%) patients were un-booked for antenatal care. The gestational age at time of delivery was term in 11 (52.4%) patients. The mean gestational age was 36±3.4, range was 28–42 weeks. Out of 21 patients, 9 (42.9%) patients had previous history of caesarean delivery; the mean number of caesarean deliveries was 2.55±0.88 (Table-1).

Table-1: Profile of the patients undergone emergency peripartum hysterectomy (n=21)

| Age in years | Number | Percentage |
|--|--------|------------|
| 21-25 | 6 | 28.6 |
| 26-30 | 6 | 28.6 |
| 31-35 | 6 | 28.6 |
| 36-40 | 3 | 14.3 |
| Parity | | |
| 2-3 | 9 | 42.9 |
| 4-6 | 5 | 23.8 |
| >6 | 7 | 33.3 |
| Gestational age at delivery in weeks | | |
| 28-36 | 8 | 38.1 |
| 37-41 | 11 | 52.4 |
| >41 | 2 | 9.5 |
| Antenatal care booking status | | |
| Booked | 7 | 33.3 |
| Un-booked | 14 | 66.6 |
| Socioeconomic status | | |
| Poor | 13 | 61.9 |
| Middle class | 08 | 38.1 |
| Previous mode of delivery | | |
| Vaginal delivery | 12 | 57.1 |
| Caesarean delivery | 9 | 42.9 |
| Number of previous caesarean deliveries | | |
| 1 | 1 | 4.8 |
| 2 | 3 | 14.3 |
| 3 | 4 | 19 |
| 4 | 1 | 4.8 |

Eleven (52.4) patients were delivered by caesarean delivery while 3 (14.2%) had normal vaginal delivery and 7 (33.3%) had laparotomy for rupture uterus. Previous uterine scar with placenta previa was the main indication of caesarean section in 6 (28.6%) patients followed by second or third trimester bleeding due to placenta previa in 4 (19%) patients. The most common indication for peripartum hysterectomy was rupture uterus 7 (33.3%), Uterine atony 6 (28.6%), morbid adherence of placenta 5 (23.8%) and intractable bleeding from placental bed 3 (14.3%). Five (23.8%) were total hysterectomies while 16 (76.9%) were subtotal (Table-2).

The maternal mortality in present review was 4(19%), all due to complications arising from severe haemorrhage. Frequency of intraoperative and postoperative complications is given in Table-3.

Table-2: Mode of delivery, Indications for caesarean delivery and peripartum hysterectomy (n=21)

| Mode of Delivery | Number | Percentage |
|---|--------|------------|
| Normal vaginal delivery | 3 | 14.3 |
| Caesarean delivery | 11 | 52.4 |
| Laparotomy | 7 | 33.3 |
| Indication for caesarean delivery | | |
| Previous caesarean section | 2 | 9.5 |
| Previous caesarean section with Placenta Previa | 6 | 28.6 |
| Placenta Previa with APH | 4 | 19 |
| Abruptio placenta | 1 | 4.8 |
| Malpresentation | 1 | 4.8 |
| Indication for Peripartum Hysterectomy | | |
| Rupture Uterus | 7 | 33.3 |
| Uterine atony | 6 | 28.6 |
| Morbid adherent placenta | 5 | 23.8 |
| Uncontrollable bleeding from Placental bed | 3 | 14.3 |
| Type of Hysterectomy | | |
| Total | 5 | 23.8 |
| Subtotal | 16 | 76.1 |

Table-3: Perioperative morbidity and mortality (n=21)

| Intraoperative Complications | Number | Percentage |
|-------------------------------------|--------|------------|
| Urinary Bladder Injury | 4 | 19 |
| Adenaxal bleeding | 3 | 14.3 |
| Broad Ligament Haematoma | 1 | 4.8 |
| Postoperative complications* | | |
| Maternal Death | 4 | 19 |
| Blood transfusion | 21 | 100 |
| Anaemia | 17 | 81 |
| ICU Admission | 11 | 52.4 |
| DIC | 3 | 14.3 |
| Renal Failure | 2 | 9.5 |
| Pulmonary oedema | 4 | 19 |
| Febrile Illness | 6 | 28.6 |
| Wound disruption | 3 | 14.3 |
| Vault Haematoma | 2 | 9.5 |
| No Complication | 5 | 23.8 |

(One patient develops more than one complication, therefore total exceeds 100%.)

DISCUSSION

The frequency of emergency Peripartum hysterectomy (EPH) in the present study is 0.42%, it is similar to the frequency reported from Bahawalpur Pakistan but very low in comparison to the reported frequency from Peshawar Pakistan.^{10,11} The reported rate of EPH in the literature from developing countries is very low (0.4/1000–0.2/1000 deliveries).^{12,13}

Zelop *et al* review the literature regarding overall incidence and found the range to be 1 in 303 to 1 in 5000 deliveries, making a rate of 3.3–0.2 /1000 deliveries respectively.⁵

The difference in the incidence of EPH may be explained by the different level of sophistication in obstetrics health care and patient load. Another factor attributed to increase in the frequency of EPH may be the increase number of un-booked cases for antenatal care and increase number of referred cases with detrimental health conditions.

Majority of patients who underwent caesarean hysterectomy were in age group 26–40 years and were Multipara. Similar trend was observed by Ahmad and Baclay.^{14,15}

Other risk factors for EPH like previous caesarean birth, current caesarean delivery and abnormal placental implantation and invasion were similar to the literature.¹⁶

The most frequent indication for EPH in present study was rupture uterus 33.3% followed by uterine atony of 28.6%, morbid adherence of placenta 23.8% and uncontrollable bleeding from placental bed 14.3%, almost similar results were reported by different studies from Pakistan.^{10,11,17} while the most frequent reasons reported from developing countries were morbid adherence of placenta and uterine atony.^{18,19}

There is significant change in the indication of EPH over a time and from one region to another. The majority of rupture uterus in present study was caused by injudicious use of oxytocin and trial of labour with previous scar by unskilled birth attendants. This fact highlights the problems which were present in our society like illiteracy, poverty, lack of antenatal care and poor access to maternal health care services.

It is reported in the literature²⁰, that the incidence of EPH due to uterine atony has declined from 42 to 29.2% and incidence due to abnormal placentation increased from 25.6 to 41.7%, this may be due to increase rate of placental insertion and invasion anomalies may be associated with increased number of caesarean deliveries and better treatment of uterine atony with PG preparations during the last two decades.

Another study reported that the incidence of Morbid Adherent Placenta (MAP) has been increased from 0.5 to 3.9%³ and the well-known risk factors for MAP are placenta previa and previous caesarean birth. The EPH has been recommended as life saving procedure for MAP.²¹

Subtotal hysterectomy was the commonly performed surgery in our study as was in other studies²² which may be due to the instability of maternal condition requiring a simpler and speedy procedure with lesser degree of haemorrhage.

The Present study confirms the previous observations that EPH is associated with high perioperative maternal morbidity and mortality.^{10,11}

The maternal mortality in our study was 19% which is almost similar to the reported studies from Pakistan^{10,11} but very high in comparison to developed countries.^{20,23} High mortality may be due to delay in arrival to hospital as in most of the developing countries health care system is poorly developed, most of the patients were un-booked, reached the hospital from some referral centres.

Another reason may be the delay in taking decision for EPH as hysterectomy is not a widely accepted operation and obstetrician only resort to hysterectomy when it becomes inevitable and all the conservative measures fail to stop bleeding. These delays result in adverse outcomes.

Peripartum hysterectomy is associated with extensive blood loss and need for higher number of transfusions.^{3,5} All the patients in present study require blood transfusion as in other study.¹²

Majority of complications observed were haemorrhage, urinary tract injuries and DIC as reported in other studies.^{16,17,24,25}

CONCLUSION

Emergency Peripartum Hysterectomy is associated with significant maternal morbidity and mortality. Rupture uterus due to injudicious use of oxytocin remains the main reason for EPH in present study.

The high risk group of women, therefore, should be delivered by skilled birth attendants and the risk of EPH due to morbid adherence of placenta can be reduced by reducing the number of unnecessary caesarean sections.

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