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ORIGINAL ARTICLE

EMERGENCY PERIPARTUM HYSTERECTOMY AT A TERTIARY CARE HOSPITAL IN KASHMIR VALLEY

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ABSTRACT: OBJECTIVE: To determine the incidence, indications, maternal and perinatal outcome of emergency peripartum hysterectomy. **METHOD:** A prospective observational study of all patients who underwent peripartum hysterectomy was conducted from June 2011 to November 2012 in the Department of Obstetrics and Gynecology, Lalla Ded Hospital, an associated hospital of Government Medical College, Srinagar, Kashmir. Data, specifically on the incidence of emergency peripartum hysterectomy, the total number of deliveries, the maternal parameters, the indications of peripartum hysterectomy and associated maternal morbidity and mortality were recorded on a proforma. **RESULTS:** There were 87 cases of peripartum hysterectomy (75 caesarean hysterectomies, 86.2% and 12 postpartum hysterectomies, 13.8%), making an incidence of 2.56/1000 deliveries. Most of the patients were para 3, 32 (36.8%), were mostly in age group of 35-39 years 38 (43.7%) and belonged to rural areas. Overall, the most common indication for emergency peripartum hysterectomy was morbidly adherent placenta with placenta previa 39(44.8%) followed by uterine rupture 24 (27.6%), uterine atony 13 (14.9%) and accidental haemorrhage 6 (6.9%). In 38 (43.7%) patients total abdominal hysterectomy was performed while 49 (56.3%) patients required subtotal hysterectomy. There were 9 (10.3%) maternal and 40 (46%) perinatal deaths; all were due to severity of conditions necessitating hysterectomy. **CONCLUSION:** Emergency peripartum hysterectomy is potentially a lifesaving procedure associated with significant maternal morbidity and mortality. Morbidly adherent placenta with placenta previa was the commonest indication for emergency peripartum hysterectomy. Previous scar, multiparity and abnormal placentation were the significant risk factors.
KEYWORDS: Peripartum hysterectomy, maternal morbidity and mortality, morbidily adherent placenta.

INTRODUCTION: Emergency peripartum hysterectomy by definition is a lifesaving procedure performed at the time of delivery, vaginal or abdominal, or in the immediate postpartum period in case of intractable obstetrical haemorrhage unresponsive to other measures.[1] Such hemorrhage may be due to abnormal placentation (e.g., placenta previa, accreta, increta or percreta), uterine atony, uterine rupture, accidental haemorrhage, leiomyomas, coagulopathy, sepsis or laceration of a uterine vessel, not treatable by conservative measures. Maternal mortality rate associated with emergency hysterectomy ranges from 0 to 30%, with the higher rates in regions with limited medical and hospital resources.[2] In past the most common indications of emergency peripartum hysterectomy was atony and uterine rupture.[3,4] Recent reports show that abnormal placental adherence/placenta previa is emerging as the major indication for emergency peripartum hysterectomy and is most likely related to increase in number of caesarean delivery observed over the past two decade.[5,6,7]

Our unit being a part of tertiary care hospital mostly receives complicated cases in emergency. This study was undertaken to review and critically evaluate the incidence, indications,

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maternal morbidity and mortality associated with obstetric hysterectomies. This study helps us to formulate the strategies to reduce the maternal morbidity and mortality related to obstetrical hysterectomies.

METHOD: The present prospective study was carried out in the department of Obstetrics and Gynaecology at Lalla-Ded Hospital, which is one of the main hospitals associated to Government Medical College, Srinagar, Kashmir and is the only maternity hospital at present catering the entire Kashmir Valley. Study period was from June 2011 to November 2012. All patients who delivered singleton infant or twins at hospital or outside the hospital, booked or un-booked who underwent hysterectomy in postpartum period were included in this study. Maternal characteristics such as age, parity, residence and any previous cesarean birth were recorded. Detailed history was taken, the indication for surgery, type of hysterectomy, intra and post-operative complications, any need for blood transfusion and pregnancy outcome were recorded on a proforma. The patient's relatives were counseled regarding need for hysterectomy and their high risk consent taken. Data thus collected was subjected to appropriate statistical analysis.

RESULTS: During the study period there were a total of 33950 deliveries. Among them 19919 (58.7%) were delivered by cesarean section and 14031 (41.3%) were delivered vaginally. Emergency peripartum hysterectomy was performed in 87 cases, making its incidence 2.56 per thousand deliveries. The number of patients undergoing emergency peripartum hysterectomy after cesarean deliveries was 75 (86.2%) and that after vaginal deliveries was 12 (13.8%).

The age of the patients ranged from 25 to 45 years. The proportion of patients requiring emergency peripartum hysterectomy increased from 9.2% in age group of 25-29 years to 43.7% in age group of 35-39 years and then showed a decline in age group 40-45 years as shown in Table-1. The parity of patients ranged from 1 to 9. Only two patients were primiparas while majority of patients 32 (36.8%) were para 3 as shown in Table-1. A total of 24.2% patients were from urban areas and 75.8% belonged to rural areas and 57 (65.5%) patients were unbooked and only 30 (34.5%) were booked as shown in Table-1.

In 38 (43.7%) patients total hysterectomy was performed while 49 (56.3%) patients required subtotal hysterectomy. Fifty seven (65.5%) patients had previous one or two cesarean deliveries. The average hospital stay in these patients was 10-15 days.

The most common indication for emergency peripartum hysterectomy was placenta previa/morbidly adherent placenta found in 39(44.8%), followed by uterine rupture 24(27.6%), uterine atony 13 (14.9%), accidental hemorrhage 6(6.9%), extension of uterine incision 4(4.6%) and one patient had multiple uterine fibroids as shown in Table-2.

Frequency of intraoperative and postoperative complications is given in Table-3. Hemorrhage and shock were the most common intraoperative complications. Lesions to the urinary bladder and the ureter occurred in seven and one patients respectively. Three patients had cardiac arrest on the operation table following massive postpartum haemorrhage. Two of them could not be resuscitated and died on the operation table. Anemia was the most common complication found in the postoperative period. Majority of patients received blood transfusions ranging from 3-10 units. There were nine (10.3%) maternal deaths. Two (2.3%) patients died on the operation table due to massive postpartum haemorrhage; four (2.5%) died soon after the operation from irreversible haemorrhagic

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shock due to ruptured uterus; 3(1.65%) died because of disseminated intravascular coagulation (DIC). There were 40 (46%) perinatal deaths: 32 (37.8%) were stillborn — 18 due to ruptured uterus and six due to abruptio placentae and eight due to other causes; eight (9.2%) died in early neonatal period mainly due to intra-uterine hypoxia and sepsis. Perinatal morbidity was mainly due to sepsis, anemia and jaundice as depicted in Table-4.

DISCUSSION: Emergency peripartum hysterectomy is an obstetric emergency which is performed as a life-saving procedure for life threatening haemorrhage which cannot be controlled by the conventional methods. There is a difference in the incidence of emergency peripartum hysterectomy in various parts of the world which 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 emergency peripartum hysterectomy may be the increase number of unbooked cases for antenatal care and increase number of referred cases with detrimental health conditions.

The incidence of emergency peripartum hysterectomy in our study is 2.56/1000 deliveries which is similar to other studies like 2.6/1000 deliveries reported by Kant and Wadhwani et al (2005), Sahu et al (2004) reported an incidence of 2.006/1000 deliveries in their study and Marwah P et al (2008) recorded 3.1/1000 deliveries as the incidence of emergency peripartum hysterectomy.[8,9,10] Some studies show low incidence as compared with our study like 1.2/1000 deliveries in King Edward VIII Hospital in Durban, South Africa and 0.4/1000 deliveries in the study done by by Afaf RA and Salah MA (2000) while other studies showed higher incidence than our study like 5.6/1000 in the study done by Siddiq N et al (2007) and 4.3/1000 deliveries in two separate studeis done by Singh and Nagrath (2005) and Kwame-Aryee et al (2007).[11,12,13,14,15]

As in other studies, however, risk factors for peripartum hysterectomy were the same, including current cesarean birth, previous cesarean birth, abnormal placentation and multiparity.[16] In our study the number of patients undergoing peripartum hysterectomy after cesarean deliveries was 75 (86.2%) and that after vaginal deliveries was 12 (13.8%) and most of these patients had history of previous one, two or three cesarean births. The increased number of caesarean deliveries further increases the risk for future abdominal deliveries, uterine rupture and abnormal placental implantation.

Placenta previa accreta or placenta previa with morbidly adherent placenta was the commonest indication for emergency peripartum hysterectomy in our study 39 (44.8%). The increasing caesarean section rate predisposes to placenta praevia and morbidly adherent placenta, which are now the leading indications for emergency peripartum hysterectomy. Placenta praevia predisposes to primary postpartum haemorrhage, because of inefficient contraction and retraction of the lower uterine segment, following delivery of the baby and the placenta, while in addition, placenta praevia accreta may predispose to partial separation of the placenta, and with partial separation of the placenta, emergency peripartum hysterectomy is usually required to control haemorrhage.

Ruptured uterus was the second commonest indication for emergency peripartum hysterectomy in our study 24 (27.6%). Ruptured uterus is considered as one of the dreaded complications of pregnancy and a cause of obstetric hemorrhage associated with significant maternal and perinatal morbidity and mortality. Majority of cases with ruptured uterus were late referrals from rural areas and rural hospitals.

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Uterine atony is the third leading cause of emergency peripartum hysterectomy in our study accounting for 13 (14.9%) cases, however, it is the main cause of postpartum haemorrhage.[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]

The trends in the indications of emergency peripartum hysterectomy `observed in other studies were as follows: Sameera Ehtisham (2011) in her study found that the most common indication for emergency peripartum hysterectomy was morbidly adherent placenta with placenta previa (57%) followed by uterine rupture (21.4%), sepsis (14.3%) and uterine atony (7%).[16] Afafa RA and Salah MA (2000) also reported placenta previa to be the most frequent indication of emergency peripartum hysterectomy.[12] Stanco et al (1993) and Zelop et al (1993) in two separate studies found that the common cause of emergency peripartum hysterectomy was placenta accrete followed by uterine atony.[5,6] Strudee DW and Ruston D (1983) reported placenta previa in 48.7%, ruptured uterus in 17.14% and uterine atony in 14.29% of patients undergoing emergency peripartum hysterectomy.[20] Chestnut et al (1985) found the most common indication for emergency peripartum hysterectomy was ruptured uterus followed by uterine atony and placenta accreta. Ahmad SN in 2001-2002 carried out a similar study in the same hospital as ours and found the incidence of emergency peripartum hysterectomy to be 2.6 per thousand deliveries, indications in the descending order of the frequency were ruptured uterus (30%) followed by placenta previa (25%) then uterine atony (21%).[21]

The change in the incidence of emergency peripartum hysterectomy in the same hospital over a period of 10 years can be explained by increase in the frequency of cesarean birth (58.7%) as compared with vaginal delivery (41.3%) in our study as against 18.2% of cesarean deliveries in the study of Ahmad SN. The incidence of placenta accreta in cases of placenta previa has risen from 2:1000 in 1952 to 101:1000 in 1985.[22] The marked rise in caesarean section rate in the past decade may be a contributing factor to the apparent steady rise in the incidence of placenta accreta. In the presence of placenta praevia, the risk of placenta accreta is directly related to the number of prior scars: no previous scar 5%, one previous scar 20%, two previous scars 38-49%, three previous scars 67%.[7, 22, 23] All obstetricians should be aware of the strong association between placenta praevia in a scarred uterus and placenta accrete.[7]

Majority of patients who underwent caesarean hysterectomy were in age group 30-40 years and were multipara. Similar trends were observed in other studies.[21,24]

Post-operative complications as anemia, fever, paralytic ileus, urinary tract infection, wound sepsis, acute renal failure, DIC were common and comparable with other studies.[10, 14, 21] Peripartum hysterectomy is associated with extensive blood loss and need for higher number of transfusions.[4, 6] Most of the patients in present study required blood transfusion.

There were 9 (10%) maternal deaths in our study. In adequate transportation, mishandling by untrained attendants and doctors outside the hospital and late presentation were the main causative factors. These deaths were due to severity of the problem for which hysterectomy was indicated rather than the procedure itself. Similar observations were made in other studies Marwaha P et al (10%), Sahasrabhojanee et al (10%), Siddiq N et al (9.7%), Kant and Wadhwani (9.7%).[8,10,13,25] While other studies reported lower maternal mortality, Singh and Nagrath (1.96%), Sahu et al (5.55%).[9,14] Kwame-Aryee et al reported 12.9% maternal mortality, higher than ours.[15]

There were 46% perinatal deaths in our study. In other studies it occurred in the range of 42.8% to 78% cases.[26,27,28] Most of the deaths were due to uterine rupture in un-booked patients who presented late in poor condition.

CONCLUSION: Peripartum hysterectomy is potentially a lifesaving procedure done in emergency situations. Placenta previa accreta was the commonest indication for emergency peripartum hysterectomy. 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 emergency peripartum hysterectomy.

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Age in years	Number of cases	Percentage
25-29	8	9.2
30-34	30	34.5
35-39	38	43.7
40 and above	11	12.6
Parity		
Primipara	2	2.3
Para 2	17	19.5
Para 3	32	36.8
Para 4	15	17.2
Grandmultipara	21	24.1
Residence		
Urban	21	24.2
Rural	66	75.8
Booking status		
Booked	30	34.5
Unbooked	57	65.5

Table 1: Profile of the patients undergone peripartum hysterectomy

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Indication	Number of cases	Percentage
Placenta previa accreta	39	44.8
Uterine rupture	24	27.6
Uterine atony	13	14.9
Abruptio placenta	6	6.9
Extension of uterine incision	4	4.6
Uterine Fibroids	1	1.1

Table 2: Indications of Emergency Peripartum Hysterectomy

Intraoperative complications	Number of cases	Percentage
Hemorrhage	48	55.1
Shock	40	45.9
Urinary bladder injury	7	8
Cardiac arrest	3	3.4
Ureteric injury	1	1.1
Postoperative complications		
Maternal mortality	9	10.3
Anemia	60	68.9
Febrile morbidity	50	57.5
Paralytic ileus	37	42.5
Urinary tract infection	23	26.4
Wound infection/dehiscence	15	17.2
Chest infection	13	14.9
ICU admission	11	12.6
Disseminated intravascular coagulation	7	8
Acute renal failure	2	2.3

Table 3: Complications of Emergency Peripartum Hysterectomy

*Many patients had more than one complication

	Number of cases	Percentage
Perinatal death	40	46
• Still birth	32	37.8
• ENND	8	9.2
Perinatal morbidity		
• Sepsis	16	18.4
• Birth asphyxia	10	11.5
• Jaundice	7	8

Table 4: Perinatal Outcome

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