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## Nine years review of emergency peripartum hysterectomy at tertiary care university teaching hospital

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### ABSTRACT

**Introduction:** This study documented the frequency, indications, and outcome of emergency obstetric hysterectomies in a tertiary care hospital in Nepal.

**Methods:** This was a nine years retrospective study of peripartum hysterectomy at Patan Hospital, Patan Academy of Health Sciences, Nepal, during 2006 to 2014. Patients' charts were retrieved from the medical record section for review. Study variables included previous obstetric history, details of the index pregnancy, indications for peripartum hysterectomy, outcome of the hysterectomy and infant morbidity.

**Results:** There were total of 73,130 deliveries. Emergency peripartum hysterectomies were performed in 28 (0.04%), of which 23 (82%) after cesarean and 5 (18%) after vaginal delivery. The primary indication for hysterectomy was uterine atony with postpartum hemorrhage (PPH), and placental causes with PPH and uterine rupture. Twelve (43%) patients had postoperative complications. There was one maternal and two neonatal mortalities, and one stillbirth.

**Conclusion:** The rate of emergency peripartum hysterectomy in our institute is low at 0.04%, indications were primarily due to uterine atony with postpartum hemorrhage.

**Keywords:** maternal morbidity, maternal mortality, peripartum hysterectomy, postpartum hemorrhage, uterine atony

## INTRODUCTIONS

Emergency peripartum hysterectomy (EPH) is a life saving procedures performed after vaginal or cesarean delivery or in immediate postpartum period with intractable hemorrhage. The EPH is reserved for the situations where conservative measures fail to control the bleeding.<sup>1</sup>

Post partum hemorrhage (PPH), according to WHO, causes 25% of maternal deaths.<sup>2</sup> In modern obstetrics, the overall incidence of PPH is 0.05%<sup>3</sup> but differs considerably in different parts of the world. The high incidence of maternal morbidity and mortality is reported from developing countries.<sup>4</sup>

This study documents the frequency, indications, and outcome of EPH in a tertiary care teaching hospital, Kathmandu, Nepal.

## METHODS

This retrospective review was carried out in the Department of Obstetrics and Gynecology, Patan Hospital, Patan Academy of Health Sciences, Lalitpur, Nepal, from January 2006 to December 2014. Hospital numbers of all patients who had undergone EPH were collected from the operation theater register. The medical files were traced and retrieved from the record section. Study variables included age, parity, socioeconomic status, antenatal care (ANC), gestational age at time of delivery, previous antepartum hemorrhage (APH), mode of delivery, indications for EPH, peripartum complications, maternal morbidity and mortality. The EPH was defined as hysterectomy performed within 24 hours of vaginal or cesarean delivery.

## RESULTS

There were a total of 73,130 deliveries at Patan Hospital, 46658 (63.80%) vaginal and 26472 (36.20%) cesarean. Average age of the women was 32 years ranging from 15 to 40 years. The range of parity was 1 to 5 in the study group; 90% were multiparas. The gestational age at time of

delivery was term in 82% and 18% were preterm. All preterms were above 34 weeks of gestation.

There were total 28 EPH, 0.04% of total deliveries i.e. one in 2612 deliveries. Among the EPH, 23 (82%) were after cesarean and five (18%) after vaginal deliveries. One EPH in every 1151 cesarean sections and one in 9332 vaginal deliveries. Two patients (7%) were primi gravidas. Among 28 EPH, history of previous cesarean section, and uterine atony with PPH were the indication for hysterectomy in 12 (43%). There was one maternal mortality after EPH (Table 1).

**Table 1. Risk factors, indications and complications of EPH (n=28)**

	N	%
<b>Risk factors</b>		
Previous cesarean section	12	43
Previous curettage	4	14
Placenta previa	8	26
Intrauterine fetal demise	2	7
Atony alone	5	18
Abruption placenta	3	11
Adherent placenta	2	7
Polyhydramnios	1	4
Induced labor	7	25
<b>Indications for EPH</b>		
Uterine atony with PPH	12	43
Placenta previa with PPH	5	18
Morbid placenta with PPH	4	14
Uterine rupture	4	14
Abruption placenta with PPH	3	11
<b>Interoperative complications</b>		
Uterine atony with PPH	12	43
Placenta previa with PPH	5	18
Morbid placenta with PPH	4	14
Uterine rupture	4	14
Abruption placenta with PPH	3	11
<b>Intraoperative complications</b>		
Hemorrhagic shock	3	11
Urinary bladder injury	2	7
<b>Post operative complications</b>		
Re-laparotomy	1	3.6
Pelvic hematoma with fever	1	3.6
Vault bleeding	1	3.6
Wound infection	1	3.6
Psychosis	1	3.6
Death	1	3.6
<b>No complication</b>	17	61

Among the total deliveries, 72205 (98.7%) patients had ANC and 925 (1.3%) did not have

ANC. Two (7% of total 28 EPH) was from the patient who did not have ANC (0.2% of 925 without ANC); 26 (93% of total 28 EPH) was from the booked ANC cases (0.04% of 72,205 with ANC).

Blood loss during the procedure was less than 800 ml in eight patients, 1000-2000 ml in 10, 3000-4000 ml in seven and >4000ml in three. Blood transfusion was given to all, two units in four cases, four in 11, five in five cases, six units in five cases and seven units in three cases.

Sixteen (57%) patients required ICU care for one to four days. One (4%) needed ICU care for six days.

Outcome of delivered babies were 25 (89.3%) alive, one still birth (ruptured uterus), and two neonatal deaths (10.7%).

## DISCUSSIONS

In our study, the rate of EPH was 0.04% (28 out of total 73130 deliveries), comparable to modern obstetrics practices with reported incidence of 0.05%.<sup>5</sup> The frequency of EPH in current study was lower than 0.07% reported in previous study done in this center.<sup>6</sup> The cause of lower incidence is uncertain, and could be due to improved overall health care facilities in recent years. In a study done in Karachi, the frequency of obstetric hysterectomy was 1 in 368 deliveries (0.27%),<sup>7</sup> in Khan's study<sup>8</sup> the incidence was 10.52 in 1000 deliveries which was very high.

According to WHO, PPH causes 25% of maternal deaths.<sup>9</sup> Report of the U.K. Confidential Enquiry into Maternal and Child Health noted that maternal deaths from hemorrhage have increased. The cause of this rise is uncertain, but it has been suggested that it may be related to changes in the pattern of childbearing, including an increasing number of cesarean deliveries.<sup>10</sup> In case of severe obstetrical hemorrhage, hysterectomy performed at or following delivery may be lifesaving and it can be carried out in

conjunction with cesarean delivery or following vaginal delivery. In this study all of the EPH was performed as salvage procedure for life threatening bleeding from the uterus after vaginal or cesarean delivery.

In this study previous cesarean section (49%) was the major risk factor identified for the emergency hysterectomy followed by previous curettage (14%) and placenta previa (26%). Nisar's study also showed previous cesarean as a risk factor in 42.9%.<sup>11</sup>

Uterine atony with postpartum hemorrhage (43%) was the most common indication for the procedure, followed by placenta previa with postpartum hemorrhage (18%), uterine rupture (14%), morbid placenta with postpartum hemorrhage and abruption placenta with postpartum hemorrhage (11%). In the past, the most common indication for EPH was uterine atony and uterine rupture.<sup>12</sup> But recent reports show abnormal placental adherence and placenta previa are emerging as the major indications of EPH.<sup>4</sup> In Pakistan ruptured uterus was reported to be the most common cause of PPH requiring hysterectomy<sup>13</sup> which is supported by Omole- Ohonsi's (73.3%),<sup>14</sup> Khan's (34.86%)<sup>8</sup> and Kojero's (47.1%)<sup>7</sup> studies. In this study almost half (43%) of the hysterectomies were due to atony of uterus followed by placental abnormalities and uterine rupture. Whereas in a study done before in the same center the first indication was uterine rupture (25%).<sup>6</sup>

Complications occurred in 39% of EPH. Hemorrhagic shock in three (11%, two due to atony and one due to morbid placenta) was the most common complication followed by urinary bladder injury in two (7%, both had history of previous cesarean). In Khan's study the hypovolemic shock occurred in 82.5% of cases.<sup>8</sup> Whereas in a study done in Nigeria the most common complication was wound sepsis (60%).<sup>14</sup>

There was one mortality (3.6%) in a case of induced labor at term. Cesarean was done for APH. Intraoperatively there was a large uterine rupture with fetal demise. The rupture was

irreparable therefore hysterectomy was done with difficulty. Postoperative she was shifted to intensive care unit but died on day two. Hemorrhagic shock (11%) was the most common complication seen during the perioperative period, (Table 1). This is less than other reported series. In a Pakistani study the maternal mortality was 10.5% and in a Nigerian study 13.3%.<sup>14</sup>

Perinatal mortality was 10.7% in this study compared to 15.5% in the previous study at our center.<sup>6</sup> Both are less than reports from other developing countries. In a Nigerian study perinatal mortality was 73.3% and 53.7% in a Pakistani study.<sup>7</sup>

The incidence of EPH and outcome differs in different parts of the world depending on availability modern obstetric services. Improving antenatal service may reduce maternal and perinatal morbidity and mortality. However, this hypothesis needs to be verified by larger study.

## CONCLUSIONS

The emergency peripartum hysterectomy in our institute was low at 0.04% and EPH related maternal mortality at 3.6%. Uterine atony with bleeding was the prime cause for hysterectomy.

## REFERENCES

1. Plauche WC, Grunch FG, Bourgeois MO. Hysterectomy at the time of cesarean section: analysis of 108 case. *Obstet Gynecol.* 1981;58:459-64.
2. AbouZahr C. Antepartum and postpartum hemorrhage. In Murray CJ, Lopez AD, editors. *Health Dimensions of Sex and Reproduction.* Boston: Harvard University Press; c1998. p. 172-81.
3. Rogers MS, Chng AMZ. Postpartum hemorrhage and other problems of third stage. In: James DK, Steer PJ, Weiner CP, Gonik B, editors. *High Risk Pregnancy-Management Options.* 3rd ed. Philadelphia: WB Saunders; 2006. p. 1559-78.
4. Zelop CM, Harlow BL, Ferigoletto FD Jr, Safon LE, Saltzman DH. Emergency peripartum hysterectomy. *Am J ObstetGynaecol.* 1993;168:1443-8.
5. Rogers MS, Chang AMZ. Post partum hemorrhage and other problems of third stage. In: James DK, Steer PJ, Weiner CP, Gonik B, editors. *High Risk Pregnancy-Management Options.* 3rd ed. Philadelphia: W B Saunders; 2006. p. 1559-7.
6. Singh A, Hada M, Yangzom K, GC A. Emergency peripartum hysterectomy. *Nepal J Obstet Gynecol.* 2006;1(2):33-6.
7. Korejo R, Nasir A, Yasmin H, Bhutta S. Emergency obstetric hysterectomy. *J Pak Med Assoc.* 2012 Dec;62(12).
8. Khan B, Khan B, Sultana R, Bashir R, Deeba F. A ten year review of emergency peripartum hysterectomy in a tertiary care hospital. *J Ayub Med Coll Abbottabad.* 2012;24(1):14-7.
9. Murray CJ, Lopez AD, editors. *Health Dimensions of Sex and Reproduction.* In: *Global Burden of Disease and Injury Series.* Vol. 3. Boston: Harvard University Press; c1998. p. 172-4.
10. Hall M. Hemorrhage. In: *Why mothers die 2000-2002.* London (UK): Royal College of Obstetricians and Gynaecologists; c2004. p. 86-93.
11. Nisar N, Sohoo NA. Emergency peripartum hysterectomy: frequency, indication and maternal outcome. *J Ayub Med CollAbbottabad.* 2009;21(1):48-51.
12. Chestnut DH, Eden RD, Gall SA, Parker RT. Peripartum hysterectomy: A review of cesarean and postpartum hysterectomy. *Obstet Gynecol.* 1985;65:365-70.
13. Mahmood S, Ayaz A, Obstetrical hysterectomy. *J Surg Pak.* 2005;10:20-3.
14. Omole-Ohonsi A, Olayinka HT. Emergency peripartum hysterectomy in a developing country. *J ObstetGynecol Can.* 2012;34(10):954-60.