Emergency Peripartum Hysterectomy at a Tertiary Care Hospital: A Five Year Analysis

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ABSTRACT

Aims: To analyze the medical records of emergency peripartum hysterectomy in a teaching hospital

Methods: A hospital based descriptive cross-sectional study was carried out on emergency peripartum hysterectomy at National Medical College and Teaching Hospital, Birgunj, Nepal from July 2011 to July 2016. Data were collected from the medical record.

Results: There were 29 maternal survivors out of 33 cases of emergency peripartum hysterectomy, among which 21 cases were of subtotal and rest 11 had undergone total hysterectomy. The incidence of emergency peripartum hysterectomy was found out to be 0.2%. Most of the women who had undergone hysterectomy were of high parity (≥4) and advanced maternal age. Mean age of hysterectomy was 27 years. Major indications for hysterectomy were uterine rupture (n=13, 40%) followed by uterine atony (n=11, 33%), placental complications (n=8, 24%) and uterine inversion (n=1, 3%). Three-fourth of women who underwent hysterectomy for placental complications had history of previous caesarean section. Emergency peripartum hysterectomy following caesarean section was 19 (57.6%) and the rest 14 (42.4%) had delivered vaginally. Twenty-six women (79%) were referred-in cases.

Conclusions: Majority (88%) of peripartum hysterectomies were maternal near-miss and resulted in mortality of 12%. Uterine rupture and atony constituted almost three-fourth of cases and emergency procedure was in rising trend each year over five years of record.

Keywords: caesarean section, peripartum hysterectomy, postpartum haemorrhage

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INTRODUCTION

Hysterectomy performed at the time of caesarean section or following vaginal delivery up to the end of puerperium is called Emergency Peripartum Hysterectomy (EPH).[1,2] It is an acute emergency procedure to prevent maternal near missed.[3] The overall incidence of caesarean hysterectomy in modern obstetrics is expected to be 0.05% but there is a considerable difference in the incidence in low and high income countries.[2,4-7] A recent study conducted in India reported hysterectomy incidence to be as high as 6.9 per 1000 deliveries.[8]

After many failed attempts, Eduardo Porro executed the first successful hysterectomy in 1876 AD.[1,9,10] EPH in the last few decades has become a rare procedure but is still practiced in low resource countries.[2,10] The risk factors, indications as well as outcome of the procedure are gradually changing over time.[4,6,11] Postpartum hemorrhage (PPH) both traumatic and atonic were previously the most attributed indication of EPH but the placental morbidities are gradually taking over as the leading cause in economically advanced countries.[5,7,12-15] The former still holds its place as the most common cause for women undergoing hysterectomy in low resource setting countries like ours.[1,6,10,11,16] Safe obstetric practice and liberal use of caesarean section can be blamed for placental complications leading to obstetric hysterectomy.[15] Lack of awareness among the pregnant women and their immediate families, social taboo restricting hospital visit, poor socioeconomic status, lack of proper health facility, mismanagement by unskilled health personnel and late referral are only a few factors among many more that contribute to an increased incidence.[3,17] Obstetric hysterectomy is an unfortunate maternal morbidity.[6,18-20] With this global scenario, this study will explore the status of of such emergency obstetric procedure in local set up.

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METHODS

This is a medical record based study at National Medical College and Teaching Hospital (NMC-TH), Birgunj from July 2011 to July 2016. The dataset includes caesarean hysterectomy and hysterectomy within 48 hours of vaginal delivery. Women who had less than 28 weeks of pregnancy and hysterectomy not due to obstetric causes were excluded. Medical records from the record section, labor room and operation theatre were taken and verified.

Variables taken were age and parity, obstetric history, history of previous uterine surgery, indication for surgery, types of hysterectomy, year-wise cases of EPH, duration of hospital stay including intensive care unit (ICU) admission of mother, need for blood transfusion, complications like bladder and bowel injuries, disseminated intravascular coagulation (DIC), Sepsis and Re-laparotomy, Maternal ICU admission, maternal death, neonatal intensive care unit (NICU) admission, fetal and neonatal deaths. Data were entered in Microsoft Excel 2007 and were transferred to Statistical Package for Social Sciences (SPSS) version 16 for analysis. Simple descriptive statistics of mean and percentage were used to analyse the data, and are presented in tables and figures.

RESULTS

Out of 16,445 patients delivered in the NMC-TH during the study period of five years, 33 women had to undergo EPH due to some obstetric complications. The incidence rate was calculated to be 0.2%. The mean maternal age was 27 years (Range: 19-37) and the majority of cases had parity four or more. The youngest patient who had to undergo EPH was a referred case of neglected shoulder presentation with irreparable posterior uterine rupture with colporrhexis. [Table-1]

Table-1: Maternal characteristics of emergency peripartum hysterectomy (N=33)

Maternal characteristics		N (%)
Age group in years	<20	1 (3.0)
	20-25	10 (30.3)
	26-30	14 (42.4)
	31-35	6 (18.2)
	>35	2 (6.1)
Parity	1	3 (9.1)
	2	4 (12.1)
	3	11 (33.3)
	≥4	15 (45.5)

There was a gradual rise in EPH from 2011/012 to 2015/016 except in the year 2013/014. [Figure-1]

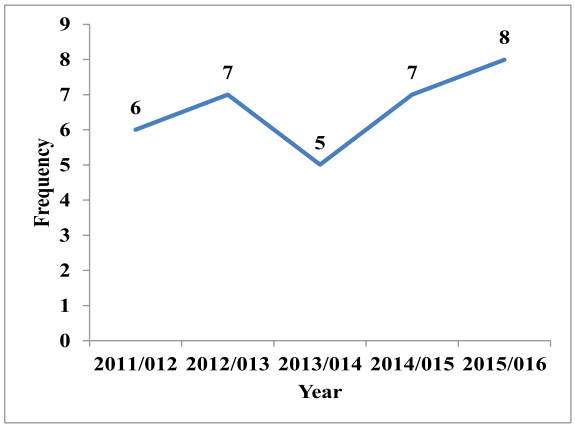

Figure-1: Trend of peripartum hysterectomy over five years (N=33)

By antenatal visits one-fourth (n=8, 24%) didn't have any visit; and one, two, three and four or more visits were to 11 (33%), 7 (21%), 3 (9%) and 4 (12%) cases respectively. The causes for EPH in our study was uterine rupture in 13 (40%) cases followed by uterine atonicity in 11 (33%) cases, placental complications in 8 (24%) cases and uterine inversion in 1 (3%) case. Three quarter of women (6 of 8) who underwent EPH for placental complications had history of previous caesarean section. One case with uterine inversion had to undergo EPH due to uterine atonicity despite of medical management. Obstetric haemorrhage following uterine rupture leading to PPH manifested as the commonest etiology for EPH in our context. Total of 21 (64%) women underwent subtotal hysterectomy and 12 (36%) had to undergo total hysterectomy.

Among 33 cases, 19 (57.6%) cases had EPH following caesarean section and 14 (42.4%) cases delivered vaginally prior to the procedure. All patients invariably needed blood transfusion; and 26 (79%) women were referred-in cases. Maternal mortality occurred in 4 (12.1%) cases and the neonatal mortality in 15 (45.5%) cases. [Table-2]

Table-2: Complications following peripartum hysterectomy

Morbidity	N (%)
Blood Transfusion	33 (100)
Maternal ICU Admission	24 (72.7)
Neonatal Death	15 (45.5)
Neonatal ICU Admission	6 (18.2)
Maternal Death	4 (12.1)
Sepsis	3 (9.1)
Re-laparotomy	2 (6.1)
DIC	1 (3.0)
Urological injury (Bladder)	1 (3.0)

DISCUSSION

Emergency peripartum hysterectomy is a rare procedure that can save near missed mothers if carried out quickly within a very short window of opportunity. The maternal outcome is poor with regards to morbidity after the procedure but it plays a very important role in salvaging the patient's life.[18-20]

Various studies have indicated a wide difference in incidences between low and high resource countries.[2-6,9] Advances in medical science has resulted in drop of incidence of EPH worldwide.[21,22] Contrary to this, newer studies have implicated a rise in EPH attributed to rising trend of caesarean section leading to increased placental complications.[8,23] Research conducted in South Asia have reported a higher incidence compared to that of African region.[9] A sixteen years long retrospective study conducted at one of the busiest institution in Kathmandu calculated the incidence to be 0.05%.[24] Comparative incidence in developed countries is very low.[23] Dissimilarity in the frequency of cases may be due to the lack of awareness among pregnant women and their immediate families, social taboo restricting hospital visits, poor socio-economic status, lack of proper health facilities, mismanagement by unskilled health personnel and late referral amongst others.[9,17,23]

Poor economic status and orthodox social norms both are preferential of early marriage and high parity. Young women after repeated childbirth become prone to obstetric complications.[1,2] Hence women who are in their twenties have high parity and become at risk patients for EPH.[2,6,8,25,26] This correlates with results from various other authors.[7,11,25-27] The finding however was contrary to that of a study conducted at Nigeria where majority of the cases operated were of low parity. This adverse outcome greatly influences women and her family as the scope of future reproduction is astrayed and the surgery itself is associated with a lot of morbidities which increases the chances of marital dispute as well as mental illness like depression.[9]

ANC is an important way for monitoring pregnancy and screening cases that are at risk of developing obstetric complications.[7] A study conducted in central Nepal detected that more than half of women were unaware of the benefits of ANC visits.[27] No antenatal visits means paucity of information to identify at risk women and these are the women who usually land up with unsalvageable complications requiring EPH. Studies have determined that more than 80% of patients who had undergone hysterectomy were unbooked.[6,10,16] This figure is disturbingly high despite the free health services provided at many health facilities distributed throughout the nation. Orthodox societal norms inhibiting women from seeking health care as well as unavailability of such services at accessible sites can explain the low rates of ANC visits.[27] World Health Organization (WHO) had previously recommended at least four visits during pregnancy but has recently updated its recommendation and increased the minimum number of visits/contact to eight, with scheduled intervals. Identification of preoperative risks during these patient-doctor contacts facilitates service providers to be prepared for unanticipated adversities.[28]

Causes behind hysterectomy are ever evolving but disparity remains between developed and developing countries.[4,6] Ruptured uterus accounted as the commonest reason behind hysterectomy in our context. This finding was similar to other studies which concluded ruptured uterus as the primary indication for surgery.[3,6,9,11,16,29] Placental morbidity was indicated in only eight cases. This finding conversely differs from studies conducted elsewhere in low income countries which detected placental morbidities as primary cause.[8,24] Developed countries however usually encounter with placental abnormalities.[12-14] A total of 19 (57.6%) cases had the procedure following caesarean section compared to 14 (42.4%) who had vaginal delivery prior to EPH.

Previous caesarean section is gradually proving itself as an important risk factor for EPH due to associated increase in placental complications.[2,4,5,7,9]

Almost all patients who had hysterectomy for traumatic PPH (Ruptured uterus) were referred-in cases after initial trials of attempted deliveries in unscientific ways either at home or rural health facilities. An important identifiable risk factor for traumatic PPH was malpractice at village level by self-proclaimed midwives who are essentially untrained personnel assisting deliveries. They often use oxytocics injudiciously or would apply fundal pressure in an uncontrolled way as a means to push the baby out. Easy availability of uterotonics and its unjustifiable use without knowing the proper dosage or probable complications can be easily attributed as one of the causes for EPH. These patients are mostly received in a moribund state after trial of delivery till end stage where the objective of management shifts from saving fertility to saving life.[2]

Surgeon's skill and patient's hemodynamic stability influences the type of surgery.[4] Total hysterectomy is the operation of choice as it has its advantage of deleting the future probability of stump carcinoma.[1] Despite this, sub-total hysterectomy commonly misnomer as caesarean hysterectomy is more commonly practiced as it is associated with short operating time, less blood loss, less chances of injury to surrounding structures (like bladder, ureter, bowel and vessels) and avoids the risk of short vagina and sexual dissatisfaction.[2-4,9] The type of surgery in recent practice is a topic of discussion. Total hysterectomy is usually chosen whenever the lower segment and/or the cervix is involved.[1]

Safe obstetric practice and risk of medical litigation has also added to the increased number of caesarean sections performed electively.[2] Though it has its advantages, the placental complications associated with labour and delivery has also increased due to increased caesarean deliveries. This poses a direct impact on the increased incidence and evolving cause of EPH in developed countries.[2,5]

Referral in medical practice serves both as a boon as well as curse. Late referral not only hampers the patients but also makes it difficult to manage the case without complications. Maternal as well as neonatal mortality is a very important facet of EPH.[3,5] A significant variation was observed in the mortality rate between referred and booked cases.[29] All patients in our cases of EPH required blood transfusion. This finding correlates with other studies where most cases of EPH had blood transfusion.[3,5,6] The economic burden the patient and her family faces in due course of treatment cannot be neglected.[6] Legal aspect of medicine cannot be ignored in today's practice.[30]

CONCLUSIONS

Emergency peripartum hysterectomy is a major surgery done under unamenable circumstances to save the mother compromising her child bearing potential. Caesarean hysterectomy, though generally rare, is relatively more frequent in unbooked and neglected cases. Previously encountered common indication of EPH i.e. obstetric haemorrhage (uterine rupture, uterine atonicity and uterine inversion) is gradually being replaced by placental complications but the former still holds its place in third world countries like Nepal. The procedure can come with a lot of morbidities.

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