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ORIGINAL RESEARCH ARTICLE

PERIPARTUM HYSTERECTOMY AND ITS RISK FACTORS

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ABSTRACT

Background: Emergency Peripartum Hysterectomy (EPH) is an important lifesaving surgical procedure considered in cases of severe hemorrhage unresponsive to medical and conservative management. The objective is to review incidence, identification, intervention and impact of emergency peripartum hysterectomy.

Methods: The retrospective, cross-sectional study designed was to used. EPH data were collected from January 2014 to December 2018.Descriptive statistics was used to analyzed data and presented in tables and charts.

Results: Incidence of Emergency Peripartum Hysterectomies was 2.3% out of 252(2.6%) cases of obstetrical emergencies and 0.06% that is 1 in 1600 deliveries. Most common indications for EPH were uterine rupture (33.3%); placenta accreta (33.3%) followed by retained placenta (16.6%) and endometritis with pyometritis (16.6%). Estimated blood loss 1916 ml., timeliness from delivery to hysterectomy was 140 minutes; most common post-operative complication was surgical site infection (33.3%) and length of hospital stay 11.7 days. Maternal morbidity rate was 33.3%. There was no maternal mortality recorded.

Conclusions: The timely intervention improves the outcome in Peripartum Hysterectomy, which is frequently associated with abnormal placentation as a consequence of increasing caesarean deliveries rate.

INTRODUCTION

Emergency Peripartum Hysterectomy (EPH) is an emergency surgical procedure performed in order to prevent likely death of the mother due to severe life-threatening intractable obstetrical complications.[1] The incidence of EPH varies around the world, ranging from 0.64 to 5.09 per 1,000 deliveries.[2] The first successful caesarean hysterectomy which was done in Italy almost one and half century back encouraged obstetricians to perform Peripartum Hysterectomy as a life saving measure in life and death situations.

In a systematic review, EPH was associated with maternal morbidity 56% and mortality 2.6%.[3] Peripartum hysterectomy is performed to save the life of the mothers though lots of significant consequences raised like maternal morbidity, increased healthcare cost and mortality. However, the timely intervention with quality care only can improve the outcome.[4]

The purpose of this study was to observe the incidence rate between total no of obstetrical emergency and total no of delivery and to review indications, risk factors, and complications of EPH

performed in Chitwan Medical College Teaching hospital which is one of the tertiary cares center in Nepal.

METHODS

The cross-sectional, descriptive study was conducted at the department of Obstetrics and Gynecology, Chitwan Medical College Teaching Hospital (CMCTH). Chitwan Medical College is a tertiary care hospital with well-equipped, 20 beds in Surgical intensive care unit; 17 beds in Medical intensive care unit I and 17 beds in high dependency unit (HDU); Blood bank facility; 90 beds for Obstetrics & Gynecology care; two teams of eight obstetricians and gynecologists, that provide support for emergency obstetrics care. Annual delivery rates in this center range from 1500 to 2000 deliveries. After the institutional review committee of Chitwan Medical College (IRC-CMC) approval, data were collected retrospectively from January 2014 to December 2018. All the file and charts of peripartum hysterectomy were reviewed and scrutinized carefully.

Likewise, the total no. of deliveries, total no of obstetrics emergencies and complications, no. of caesarean section over study period were identified from the maternity register. Data was entered in Microsoft Excel spreadsheet and descriptive statistics used to analyzed the data.

RESULTS

The total number of deliveries within the study period was 9603 out of which 4,772 (49.7%) had vaginal births and 4831 (50.3%) underwent caesarean section (Figure 1). The rate of Peripartum Hysterectomy was 2.3% out of obstetrical emergencies and 0.06% that is 1 in 1600 deliveries. Among them postpartum hysterectomy underwent after vaginal birth 33.3% and caesarean hysterectomy was done in 66.7% of the cases. Mode of delivery vaginal (50.30%) and caesarean section (49.70%), (Figure1).

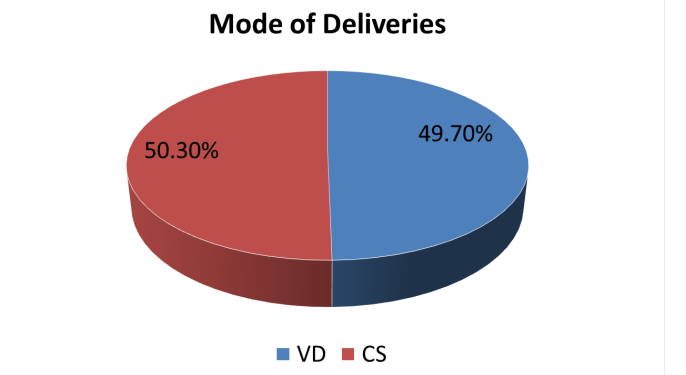
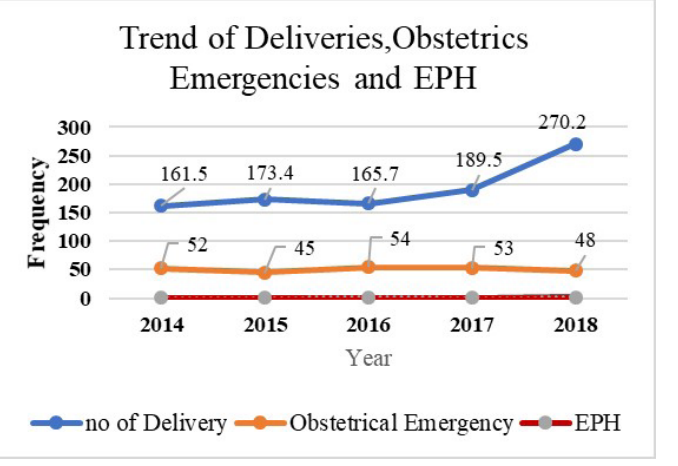


Figure 1: Mode of Delivery

Over the period of 5 years, there were 252(2.6%) obstetric emergency cases out of total delivery. Among which 138(54.7%) cases were postpartum hemorrhage, 89(35.3%) cases of retained placenta, 19(7.5%) cases of obstructed labor, 4(1.5%) cases of uterine rupture and 2(0.7%) case of extended cervical tear. Among them 6 cases underwent Emergency Peripartum Hysterectomy. All those EPH were being subtotal hysterectomies. Among which 4(66.6%) and 2(33.33%) cases underwent caesarean hysterectomy and postpartum hysterectomy respectively. The trend of deliveries from the year 2014 to 2018 was increased. But the obstetrics emergency cases were noted static in same duration. Most of the EPH was done in the year 2016 (16.6%),2017(33.3%) and 2018 (50%). The peripartum hysterectomy rate is increasing in trend with respective to delivery rate. The rate of obstetrical emergency not increasing throughout the year 2014 to 2018 (20.6% to 19.04%) respectively. The rate High cluster of EPH was noted later year (Figure 2).



(Note: please ignore decibel for the counting of total no of deliveries, decimal was used to show the figure in the graph)

Figure 2: Trend of Deliveries, Obstetrics Emergencies and EPH

Table 1: Demographic characteristics of mother who underwent peripartum hysterectomy

Demographic Characteristics	Frequency (%)
Age (years)	
20-25	1 (16.6)
26-30	4 (66.6)
30-35	1 (16.6)
Parity	
P1	2(33.33)
P2	3(50)
P3	1(16.6)
Previous cesarean delivery	
None	4(66.6)
One	1(16.6)
Two	1(16.6)
Previous uterine cavity instrumentation	
No	5(83.3)
Yes	1(16.6)
Twin gestation	
No	6 (100)
Yes	0
Maturity at delivery	
Preterm (<37 weeks)	2(33.33)
Term (37 to 42 weeks)	4(66.6)
Post-term (42 weeks)	0
Induction of labor	**2(33.33)**
Mode of delivery	
Vaginal delivery	2(33.33)
Cesarean delivery	4(66.6)

The table 1 shows the demographic characteristic of EPH cases. The mean age of the women was 26.5±6.5 years. There was 1 primi gravida, 3 second gravida, 1 third gravida and 1 fourth gravid. There was 85% multigravida mother. The mean gestational age at the time of delivery was 36±8.3weeks of gestation.

The common risk factors were also identified in the study. Among the risk factors, 2(33.3%), cases were previous cesarean delivery with placenta previa. Two (33.3%) were induction of labour. One (16.7%) case was secondary PPH with puerperal sepsis with H1N1 influenza viral infection and 1 case with history of previous curettage was identified.

The indications of EPH so far also were identified (Table 2). The indications for peripartum hysterectomy were placenta previa with placenta accreta in 2 cases (33.3%) and uterine rupture in 2 cases (33.3%). The other indications were retained placenta in 1 case (16.7%) and endometritis with pyometritis with H1N1 influenza in 1 case (16.7%) was noted.

Table 2: Indications of peripartum hysterectomy

Indications	n	%
Placenta previa with placenta accreta	2	33.3%
Uterine rupture	2	33.3%
Retained placenta	1	16.7%
Enodometritis with pyometritis	1	16.7%
Total	**6**	**100%**

The timeliness of EPH was calculated among the cases of caesarean hysterectomy (4 cases) only. The multidisciplinary approach was instituted throughout the surgical procedure as well as post operative management. The mean time was noted 140 minutes, ranging from 2.3 hours to 4 hours. All the EPH cases were admitted in intensive care unit. There were no other intra-operative complications except blood loss during the procedure. The estimated blood loss in average was 1916 ml ranging from 1500 ml to 3000 ml. Blood transfusion was done in all cases. Whole Blood and other blood products transfusion rate was ranging from 1000 ml to 2500 ml with an average of 1416 ml.

Postoperative morbidity noted in 2 (33.3%) cases. Both had surgical site wound infection and had prolonged hospital stay compared to other 4 cases. The intensive care unit stay period was 72 hours (3 days). Postoperative hospitalization period in total was 8 to 16 days with the average of 11.7 days.

DISCUSSION

In this study, the rate of Peripartum Hysterectomy was 2.3% out of obstetrical emergencies and 0.06% that is 1 in 1600 deliveries. Over the period of 5 years, there were 252(2.6%) obstetric emergency rate out of total delivery. The peripartum hysterectomy rate

is increasing in trend respective to delivery rate but similar rate (2.3%) respective to obstetrics emergency case rate that is 2.6%. The rate of obstetrical emergency not increasing throughout the year 2014 to 2018 (20.6% to 19.04%) respectively. The rate of caesarean delivery is increasing in our institutions. The no of caesarean delivery affects the peripartum hysterectomy rate. So previous caesarean delivery should also be considered as immerging obstetrical emergency which should be manage timely and tactfully.

Intractable PPH not responsive to other maneuvers and surgical techniques was the indication for all peripartum hysterectomy. Alka et al. 5 reported the incidence of 0.07 % that is 1 in 1364 deliveries during the study period of 1997 to 2005 in Patan Hospital, Nepal whereas Basnet et al. 6 reported an incidence of 1.48 per 1000 deliveries during study period of 2 years in BPKIHS, Dharan. In review article by Zelop et al. 1, the overall incidence was found to be 1 per 645 deliveries. In Norway only 11 cases of postpartum hysterectomy were performed over a span of 25 years, giving an incidence of 0.2 per 1000 deliveries.7

The age group where the hysterectomy was required showed variation from 20 years to 32 years in this study. Majority of cases that required emergency hysterectomy in this study were multigravida with only 1 case being primigravida similar to Rossi AC et al.3 and Ezechi et al.8 The incidence of hysterectomy associated with vaginal delivery was lower than with cesarean delivery, consistent with other studies.5,6 Previous cesarean section with placenta previa and IOL were seen to be the major risk factors in this study. This finding signify that the increased caesarean section rate intensify the abnormal placentation rate.

Uterine rupture and placenta previa with placenta accreta were found to be the main indications of peripartum hysterectomy in our study similar finding mentioned by Sharma B et al.9 in contrast to Chester J et al.10 where uterine atony was mentioned to be the main indication.

Intraoperative complications rate was reported range from 10% to 36%, and postoperative complication rates as high as 65%, in other studies whereas in this study it was much less with no intraoperative complication like organ injury, reoperation but postoperative complication like surgical site wound infection was noted in 33.3% of cases which is more than reported by Khan B et al.11. No maternal mortality was noted in our study in contrast to the maternal mortality 17.7% finding reported by Roopnarinesingh R et al.12

It is a single centre retrospective study. For the period of last 2 years almost 5 cases underwent EPH. we could not determine the reason for the clustering of cases in 2017 and 2018. It remains to be seen whether this is indicative of a further rising trend of EPH in the future or merely due to chance.

CONCLUSION

Adherent placenta and rupture uterus have been identified as the most common indication for peripartum hysterectomy; identification of high-risk cases, proper antepartum and intrapartum care, timely intervention can to some extent prevent it. Abnormal placentation is on increasing trend due to increase in the rate of cesarean section. It is also speculated that the principal indication for EPH is likely to change towards abnormal placentation as our caesarean section rate is rising in trend. The timely intervention improves the outcome in Peripartum hysterectomy which is frequently associated with abnormal placentation as a consequence of increasing caesarean deliveries rate.

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Competing interest: None

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