ORIGINAL ARTICLE

Causes of Emergency Obstetric Hysterectomy in A Tertiary Care Center

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ABSTRACT

Background: Cesarean hysterectomy is an emergency life-saving procedure performed for massive post-partum hemorrhage when other measures to control bleeding fail.
Aim: To determine the frequency, causes and complications associated with emergency obstetric hysterectomy (EOH).
Method: It was a retrospective cross sectional study of EOH performed inGynae unit 111 of services hospital Lahore from 1st Oct 2013 to 30th sept 2016. Data was entered and analyzed in SPSS. Frequency and percentages were calculated for causes, maternal and fetal outcome of EOH. Chi-square test was used to assess statistical significance with $p < .05$ as statistical significant.
Results: 0.39% of patients had to undergo EOH during the study period. Placenta previa with accreta was the commonest reason in 53.3% of cases, Uterine atonyin 26.7%, placenta previa without accreta in 11%, and in 8.9% cause was rupture uterus. All the patients had blood loss more than 1.5 liters. There were 9 bladder injuries, 3 haematomas ,6 wound infections, 2 patients had DIC one of which died, 9 patients were admitted to ICU. The mean hospital stay was 7 days. Most of babies (64.4%) had good APGAR score and there were 10 perinatal deaths.
Conclusion: EOH is life-saving in uncontrollable hemorrhage. The commonest indicationhas changed from uterine atony to placenta accreta due to rising cesarean section rate. Identifying high risk patients and managing promptly can save lives of mothers.
Keywords: Emergency obstetric hysterectomy, PPH, maternal mortality, atony.

INTRODUCTION

Emergency obstetric hysterectomy is a life-saving surgical procedure which is performed in the presence of life threatening hemorrhage when other measures to control bleeding have not been successful[1,2]. Inspite of advances in the management of postpartum hemorrhage, it is one of the major causes of maternal mortality and morbidity both after cesarean section and vaginal delivery[3].

Emergency obstetric hysterectomy has been performed due to multiple reasons but the commonest indication has been uterine atony followed by uterine rupture, massive abruption and morbidly adherent placenta. In developed countries due to better antenatal care, small family size, use of utero-tonics and increasing cesarean section rate the trends have changed toabnormally adherent placenta to be the main indication of EOH[4,5,6].

Peri-partum hysterectomy was first described by Edward Parro in 1876 as a life-saving procedure for PPH after cesarean section.[7,8]Since then it has been performed in cases of PPH unresponsive to other measures. Even with advances in anesthesia, surgical technique and blood transfusion, it is associated with a high rate of maternal and fetal morbidity and mortality due to unplanned nature of procedure and majority being un-booked patients. The purpose of the present study was to determine the frequency, risk factors, indications and maternal and fetal outcome of EOH in our set up.

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MATERIAL AND METHODS

It was a retrospective, observational study of the record of all the patients who underwent EOH at Gynae unit III of Services hospital Lahore from1st Oct 2013 to 30th Sept 2016. Data was entered and analyzed in SPSS. Frequency and percentages were calculated for causes, maternal and fetal outcome of EOH. Demographic features were also noted. Cross tabulation was done for cause of hysterectomy and complications with booking status and mode of delivery. Chi-square test was used to assess statistical significance with $p<.05$ as statistical significant.

RESULTS

Total number of deliveries conducted in 3 years was 11526, out of which 45 had to undergo EOH making it 0.39% of deliveries. 20 patients were booked at services hospital and rest came in emergency as un-booked patients, among these 7 women were

referred with PPH after delivery or cesarean section at some other place. Mean age of patients was 32 years. Mean duration of pregnancy was 36 weeks and mean parity of patients was 3.35. 36 patients had EOH after LSCS and 9 after vaginal delivery. Out of 36 patients 24(66.7%) had caesarean section due to placenta accreta. All the patients with placenta accreta had previous caesarean deliveries.

Table 1: Demographic Features

Variables	n	%age
Age (years)		
20-25	6	13.3
26-30	14	31.1
31-35	18	40
36-41	7	15.5
Parity		
1-3	27	60
4-6	17	37.8
7 and above	1	2.2
Booked	20	44.4
Un-booked	25	55.6
Place of delivery		
Services	38	84.4
Referred	7	15.6
Mode of delivery		
LSCS	36	80
SVD	9	20
Hospital stay (days)		
1-6	17	37.7
7-13	28	62.2

Table 2: Indication of Cesarean (N-36)

Indication	Frequency	% age
Placenta previa	5	13.9
Placenta accreta	24	66.7
Obstructed labor	4	11.1
Previous section	1	2.8
APH	2	5.5

11.1% of cesareans were done due to obstructed labor, 13.8% due to placenta previa alone, 2.8% due to previous section and 5.5% due to placental abruption. Among 45 EOH, the commonest indication in 53.3% of cases was placenta accreta while uterine atony was thereason in 26.7% of cases, placenta previa in 11%, and in 8.9 uterine rupture was responsible for EOH. There were some maternal complications.100% of women had blood loss more than 1.5 liters and required transfusion, 9(20%) had bladder injury, 3(6.7%) had haematoma extending to broad ligament, 6(13.3%) had sepsis later on, 2(4.4%) patients had DIC one of which died in ICU, 9(20%) patients were admitted to ICU. Mean hospital stay was 7 days. Regarding neonatal outcome most of babies (64.4%) had good APGAR score and there were 10 perinatal deaths among which one was preterm set of twins and two died because of abruption. All the babies of women with rupture uterus died.

Table 3: Causes of obstetric hysterectomy

Causes of hysterectomy	Frequency	% age
Atony	12	26.7
Placenta previa	5	11.1
Placenta accrete	24	53.3
Rupture/trauma	4	8.9
Total	45	100.0

Table 4: Causes of hysterectomy *Booking Status of subject (cross-tabulation)

Cause of Hysterectomy	Booking Status	n	%age of cause EOH
Atony (n=12)	Booked	2	16.7%
	Un-booked	10	83.3%
Placenta previa (n=5)	Booked	3	60.0%
	Un-booked	2	40.0%
Placenta accreta (n=24)	Booked	14	58.3%
	Un-booked	10	41.7%
Rupture/trauma (n=4)	Booked	1	25.0%
	Un-booked	3	75.0%

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.728[a]	3	.081

Table 5**:** Maternal & Fetal Complications * Booking Status (cross-tabulation)

Complications	Booking Status	n	Complication
Maternal			
Bladder injury (n=9)	Booked	3	33.3%
	Un-booked	6	66.7%
Hematoma (n=3)	Booked	0	0
	Un-booked	3	100.0%
Blood loss (n=45)	Booked	20	44.4%
	Un-booked	25	55.6%
Infection (n=6)	Booked	1	16.7%
	Un-booked	5	83.3%
DIC (n=2)	Booked	0	0
	Un-booked	2	100.0%
Admission to ICU (n=9)	Booked	3	33.3%
	Un-booked	6	66.7%
Mortality (n=1)	Booked	0	0
	Un-booked	1	100%
Fetal complications			
Asphyxia (n=11)	Booked	1	9.1%
	Un-booked	10	90.9%
Admission to NNICU (n=10)	Booked	2	20%%
	Un-booked	8	80%
Mortality (n=10)	Booked	2	20%
	Un-booked	8	80%

Percentages and totals are based on respondents.
a. Dichotomy group tabulated at value 1.

Table 6: Maternal and Fetal Complications *MOD (crosstabulation)

Complications	Mode of delivery	
	LSCSN-36	SVDN-9
Maternal Complications		
Bladder injury	7(19.4%)	2(22.2%)
Hematoma	1(2.7%)	2(22.2%)
Blood loss	36(100%)	9(100%)
Infection	5(13.8%)	1(11.1%)
DIC	2(5.5%)	0(0%)
Admission to ICU	5(13.8%)	4(44.4%)
Mortality	1(2.7%)	0(0%)
Fetal complications		
Asphyxia	7(19.4%)	4(44.4%)
Admission to NNICU	4(11.1%)	6(66.6%)
Mortality	6(16.6)	4(44.4%)

DISCUSSION

Reduction of maternal mortality has always been a major concern of obstetricians and one of the major contributors is post-partum hemorrhage. When other measures to control bleeding are not effective emergency obstetric hysterectomy is performed to save maternal life.

The incidence of EOH is different in different countries and at different places in same country depending upon obstetric practices, socioeconomic status of population, obstetric facilities available, awareness and utilization of these facilities. Overall it is seen to be 0.24-8.8 per 1000 deliveries and some multicenter trials have shown it to be 0.5% of cesarean deliveries[9,10]. In Lahore it is said to be 0.30%, 0.42% in Faisalabad, Hyderabad 0.56%.[11] In a study at Ahmedabad India the incidence was 0.35%[12]. The incidence of EOH in our 3 year study is 0.39% which is close to the incidence reported in above studies. There are multiple factors causing EOH among which uterine atony has been the commonest reason. But in past few years there is decline in the incidence of obstetrical hysterectomy due to uterine atony from 42% to 29.2%, and there is increase that due to abnormal placentation from 25.6% to 41.7%[13]. This has been partly due to use of utero-tonics and active management of 3rd stage of labor but mainly because of increasing number of caesarean sections over the past few years resulting in placenta previa with morbid adhesion emerging as the commonest reason.[14,15,16] The most frequent indication for peri-partum hysterectomy was morbidly adherent placenta (46%) while uterine atony was seen in 23% of women in a ten year study at Agha Khan University.[17]In our study also the commonest reason in 53.3% was placenta accreta while uterine atony was responsible for EOH in 26.7% and placenta previa without accreta and rupture uterus in 11% and 8.9% of patients respectively. Among the patients with placenta accreta58.3% were booked patients of hospital while rest were un-booked while in case of atony 83.3% were un-booked and came to our facility in emergency (Table 4).

In a study conducted at Oman, uterine atony was the most common cause(25%) followed by adherent placenta in 21% of cases which still shows the rising contribution of adherent placenta in developing countries also[18].

Emergency obstetric hysterectomy is usually an unplanned procedure and most of patients are not well prepared so it is associated with maternal and fetal complications. The commonest complication is blood loss[12,19,20,21]. In my study all the patients had blood loss > 1.5 liters and required blood transfusion. Other complications reported in a study by Nisar are, 52% required ICU admission, 14.3% developed DIC, febrile illness in 28.6% and 14.3% had wound infection. There were 19% maternal deaths[19].

In another study 57% required ICU care, 28.6% developed DIC, 28% had bladder injuries and there were 7.1% maternal deaths. [20]In our study 20% patients needed ICU admission. Bladder injury occurred in 20% which were repaired at the time of surgery. One patient developed bladder fistula later on which was repaired successfully, 6.7% had heamatomas, DIC in 4.4% and 13.3% had infection. There was one bla2.2%) which was a patient who had abruption, delivered at a private clinic and came in shock with DIC. It was seen in my study that all the complications were more common in un-booked patients.(Table-5).In a study by Sarwat the complications were more in un-booked patients which is the same as in our study[21]. Un-booked patients are not well prepared, risk factors are not anticipated and diagnosed, so complications rate is higher in them. 57.14% babies had no complications in a study by Shabnam Naz which is close to 64.4% of babies born with good APGAR score in our study[22]. There were 10 perinatal deaths, 4 due to rupture uterus, one set of premature twins and 2 died because of abruption and 2 due to asphyxia in mothers who came with APH. 80% of mortalities were in un-booked patients. Out of 36 patients who had cesarean section, 19.4% had bladder injury, these were the patients with previous cesarean where bladder was adherent to lower segment or rupture uterus where rupture involved lower segment extending to bladder. 13.8% had sepsis, 5.5% had DIC, 13.3% were admitted to ICU and there was one maternal death of a patient who was referred after cesarean section at a private hospital in a state of shock and DIC. Out of 9 patients who delivered vaginally, 22.2% had bladder injury, these women had forceps delivery with tears

extending to bladder, 11.1% developed infection. 44.4% were admitted to ICU after vaginal delivery, these were the patients who were referred after delivery in moribund state from periphery. Fetal complications were more in patients who delivered vaginally (Table 6).

CONCLUSION

Emergency obstetric hysterectomy saves maternal lives of uncontrollable hemorrhage. Due to rising cesarean section rate the commonest indication is changing from uterine atony to morbidly adherent placenta. Good ante-natal care, identifying high risk patients and involvement of a senior obstetrician can go a long way to reduce maternal mortality and morbidity.

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