

Emergency Obstetric Hysterectomy: A Retrospective Study from Obstetrics and Gynecology Hospital – Duhok over Three Years 2017 to 2019

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Abstract

Background & Objectives: This study aimed to identify the indications and types of emergency obstetric hysterectomy that were applied in obstetrics and Gynecological Duhok Hospital.

Methods: In this retrospective cross-sectional study, the medical records of the patients who underwent emergency obstetric hysterectomy were reviewed for medical indications and outcomes between the 1st of January 2017 and 31st December 2019.

Results: The mean age of the patients was 33.81 ± 5.48 ranged from 18 to 42 years old. Most of the patients delivered by cesarean section (89.6%) and the remaining by normal vaginal delivery (10.4%). Some of the patients had a total abdominal hysterectomy ((54.2%) and others had a subtotal hysterectomy (45.8%). The indications of hysterectomy were morbidly adherent placenta (56.3%), atonic postpartum hemorrhage (12.5%), uterine rupture (12.5%), abruption placentae (8.3%), placenta previa (8.3%). The most common maternal complications were bladder injury (18.8%) followed by intensive care unit admission (8.3%) and mortality (8.3%) and the majority of patients had more than one complication (39.6%) and 25.0% had no complication. The most common fetal complication was mortality (25.0%) followed by neonatal intensive care unit admission (16.7%) and 58.3% had no complication.

Conclusion: This study found that morbidly adherent placenta was the most common indication for emergency obstetric hysterectomy. Bladder injury and neonatal intensive care unit admission were the most common maternal and fetal complications, respectively. This study showed that the incidence of previous cesareans section was high in women who underwent a hysterectomy.

Key words: Emergency obstetric hysterectomy, Maternal, Fetal, Hysterectomy.

Introduction

Emergency obstetric hysterectomy (EOH) is defined as a uterus extirpation either at the cesarean section-time or after vaginal delivery (NVD) or within the puerperium period. It is usually practiced when the pregnancies face life-threatening obstetric hemorrhage.¹ It is important to study these events because they have a high risk of fetomaternal morbidity and mortality. Incidence of emergency postpartum

hysterectomy and cesarean hysterectomy is different from 1 in 1420 deliveries in Australia to 1 in 348 deliveries in Nigeria. Hysterectomy must be practiced only when all consecutive medical measures fail to obtain hemostasis after a life-threatening postpartum hemorrhage. This operation is contributed to substantial maternal mortality and morbidity.² Obstetric hemorrhage is the main causative

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factor of maternal mortality and morbidity in developing countries, EOH is not a common operation.³ Uterine atony and uterine rupture were the most common indications of obstetric hysterectomy in the past.⁵⁻⁶ Abnormal placental adherence and or Previa are emerging as the main indications for peripartum hysterectomy possibly due to rising the incidence of cesarean section (CS) over the past two decades.⁴⁻⁶ Previous CS and placenta Previa are considered to be two main risk

Materials and methods

In this retrospective cross-sectional study, the medical records of the patients who underwent EOH were reviewed for medical indications and outcomes to study the emergency obstetric hysterectomy cases between the 1st of January 2017 and 31st December 2019. All pregnant women with gestational age 24 weeks and more presented to the hospital with vaginal delivery (VD) or who needed elective or emergency cesarean section were included in the study. Women who needed EOH due to gynecological causes or who were not pregnant were excluded from the study. The following information was collected from the medical records of the patients; age, gestational age, received packed cell units, platelet units, and fresh frozen plasma (FFP), number of previous abortions, the modes of delivery and types of hysterectomy done, and its indications and outcomes were recorded in a pre-

Results

The mean age of the patients was 33.81 ± 5.48 ranged from 18 to 42 years old. The mean gestational age was 34.98 ± 4.13 between 24 and 40 weeks. Most of the patients were delivered by cesarean section (89.6%) and remaining by vaginal delivery (10.4%). Some of the patients had TAH (54.2%) and others had STH (45.8%). The indications of the EOH were morbidly adherent placenta

factors for the development of abnormal placental adherence. Taking the rising incidence of the CS and a considerable decrease in the uterine rupture and atony owing to modern antenatal and intrapartum care, the placenta accrete has replaced uterine rupture and atony as the most common indications for emergency peripartum hysterectomy.¹⁰⁻¹¹ This study aimed to identify the indications and types of EOH which were applied in obstetrics and Gynecological Duhok Hospital.

designed questionnaire. The general and medical characteristics of the patients were presented in mean \pm (SD), median (interquartile range), and number (percentage). The prevalence of maternal and fetal complications was determined in number and percentage. The comparison of medical information and complications between types of EOH was examined in independent t-test and Fishers' chi-squared test. The significant level of difference was determined in a p-value of less than 0.05. The statistical calculations were performed by statistical package for social sciences version 25 (IBM SPSS Statistics for Windows, Version 25.0). The ethical approval of this study was obtained from the Kurdistan Higher council of Medical Specialties (KHCMS). The confidentiality of the personal information of the patients was protected in this study.

(56.3%), atonic postpartum hemorrhage (12.5%), uterine rupture (12.5%), abruptio placentae (8.3%), placenta Previa (8.3%), and others (2.1%). The patients received 5.50 units of the packed cells on average. The median of the receiving platelet unit was 0.0 between 0 and 10 units. The median of receiving FFP and the number of abortions were 4.0 and 0.0, respectively, Table (1).

Table (1): General characteristics, type, and indications of hysterectomy.

Characteristics (n=48)	Statistics	
	Mean	St. Deviation
Age (18-42 years)	33.81	5.48
Gestational age (24-40 weeks)	34.98	4.13
Receiving packed cell units (2-12 units)	5.50	2.76
	Median	Interquartile Range
Receiving Platelet units (0-10 units)	0.0	3.0
Receiving FFP (0-20)	4.0	3.0
Number of miscarriage (0-6)	0.0	1.0
	No.	%
Delivery		
Vaginal delivery	5	10.4
Cesarean section	43	89.6
Type of Hysterectomy		
Total Abdominal Hysterectomy (TAH)	26	54.2
Subtotal hysterectomy (STH)	22	45.8
Indication		
Atonic postpartum hemorrhage	6	12.5
Morbidly adherent placenta	27	56.3
Uterine rupture	6	12.5
Abruptio placentae	4	8.3
Placenta Previa	4	8.3
Other	1	2.1

The most common maternal complications were bladder injury (18.8%) followed by ICU admission (8.3%) and mortality (8.3%). The majority of patients had more than one

complication and 25.0% had no complication. The most common fetal complication was mortality (25.0%) followed by NICU admission (16.7%) and 58.3% had no complication. Table (2).

Table (2): Maternal and fetal complications of women underwent hysterectomy.

Complications (n=48)	Statistics	
	No.	%
Maternal complications		
No complication	12	25.0
Coagulopathy	1	2.1
Wound sepsis	2	4.2
Need for vasopressors	1	2.1
ICU admission	4	8.3
Mortality	4	8.3
Bladder injury	9	18.8
Multi-Complication (>one complication)	15	31.3
Fetal Complication		
No complication	28	58.3
NICU admission	8	16.7
Mortality	12	25.0
	Mean	St. Deviation
Number of previous C/S (0-5)	2.17	1.68

The study did not find a significant statistical difference in the medical characteristics of patients who underwent a total and subtotal hysterectomy. Also,

there was no significant statistical difference in the delivery modes (p=0.649), indications (p=0.618), maternal

complication (p=0.968), and fetal complications (p=0.567), Table (3).

Table (3): Comparisons of medical characteristics, maternal and fetal outcomes between patients with hysterectomy types.

Patients' characteristics (n=48)	Type of Hysterectomy				p-value
	TAH		STH		
	Mean	SD ±	Mean	SD ±	
Age	34.2	4.4	33.4	6.6	0.619 ^a 0.156 ^a 0.917 ^a 0.383 ^a 0.108 ^a 0.914 ^a 0.264 ^a
Gestational age -week	35.8	3.8	34.0	4.3	
Packed cell units	5.5	2.9	5.5	2.6	
Platelets units Receive	1.2	1.9	1.8	2.6	
FFP Receive (fresh frozen plasma)	3.5	2.9	5.6	5.4	
No. of miscarriage	0.7	1.5	0.8	1.2	
No. of previous scar (C/S)	2.4	1.5	1.9	1.9	
	No.	%	No.	%	p-value
Delivery					0.649 ^b
vaginal delivery	2	7.7	3	13.6	
Cesarean section	24	92.3	19	86.4	
Indication					0.618 ^b
Atonic postpartumhemorrhage	3	11.5	3	13.6	
Morbidly adherent placenta	17	65.4	10	45.5	
Uterine rupture	3	11.5	3	13.6	
Abruptio placentae	1	3.8	3	13.6	
Placenta Previa	2	7.7	2	9.1	
Other	0	0.0	1	4.5	
Maternal Complication					0.967 ^b
No complication	7	26.9	5	22.7	
Coagulopathy	0	0.0	1	4.5	
Wound sepsis	1	3.8	1	4.5	
Need for vasopressors	0	0.0	1	4.5	
ICU admission	2	7.7	2	9.1	
Mortality	3	11.5	1	4.5	
Bladder injury	5	19.2	4	18.2	
Multi-Complication (>one complication)	8	30.8	7	31.8	
Fetal Complication					0.567 ^b
No complication	17	65.4	11	50.0	
NICU admission	4	15.4	4	18.2	
Mortality	5	19.2	7	31.8	

Discussion

This study found two types of EOH in this region. The mean age of the patients was ± 33.81 years. The community-bases studies conducted in low and middle-income countries have reported a lower prevalence of hysterectomy compared to high-income countries.⁷ Lui reported the prevalence of EOH of 3.3% in women aged 25-69 with an average mean of 44 ± years.⁸ In India, the population-based cross-sectional surveys conducted in different age groups of rural areas showed that prevalence is

between 1.7% and 7.8%.⁹⁻¹¹ Further data of qualitative and clinical-based researches have shown that several factors have a role in unnecessary EOH in low-income countries. The factors are lack of appropriate gynecological care, menstrual taboos, perceptions toward the post-reproductive uterus, provider or patient-induced moral hazard, and unsuitable using health insurance.¹² An epidemiological analysis of peripartum EOH across nine European countries

reported 1302 peripartum hysterectomies in 2498013 births with a prevalence of 5.2 per 10000 births ranged from 2.6 in Denmark to 10.7 in Italy. The main indications were uterine atony (35.3%) and abnormally invasive placenta (34.8%). They reported that relative risk for EOH following the cesarean section was 9.1% compared to vaginal delivery. The risk for EOH for birth following previous cesarean section was 10.6% compared to the deliveries without a previous cesarean section. In addition, a strong association was found between national cesarean section rate and prevalence of peripartum EOH.¹² The present study found that morbidly adherent placenta was the most prevalent indication of hysterectomy. A study was conducted at the general hospital in Duhok between 2003 and 2004 to find out the incidence of rupture of the uterus. They reported that the incidence of the ruptured uterus is 0.2% (42 out of 20574 deliveries). The main responsible factors were obstructed labor and previous cesarean scar. The maternal mortality and perinatal mortality rates were 5.0% and 62.0% in these women¹³. The improvement in antenatal care and labor guidelines is required in this region. In this study, 12 and 4 out of 48 babies and mothers died, respectively. The bladder injury and NICU admission were the most common maternal and fetal complications of hysterectomy, respectively. A retrospective study conducted in India for 8 years revealed that the incidence of EOH is 30 per 100000 for normal deliveries and 270 per 100000 for cesarean section. The common indications of the EOH were atonic postpartum hemorrhage (25.0%), placenta accretes (21.0%), and uterine rupture (17.5%). The most common complications were febrile morbidity (19.2%) and disseminated intravascular coagulation (13.5%). The maternal and

perinatal mortality were 17.7% and 37.5%, respectively.¹⁴ The NICU admission in this study was 16.7% (8 out of 48 babies). Chawla reported that NICU admission was 17.9%. They reported other fetomaternal complications; fever, coagulopathy, wound sepsis, re-laparotomy, need for vasopressors, ICU admission, and mortality. The indications in our study could reflect the status of developing countries. Morbidly adherent placenta was the most common indication for the EOH in this study. However, some studies have shown that atony is the most common indication; such as India¹⁵; UK¹⁶, and Turkey¹⁷. The morbidly adherent placenta was the second most common indication for EOH in Turkey¹⁷, UK¹⁶ accounts for between 40% and 38.0% of the cases, respectively. The morbidly adherent placenta was responsible for 56.3% of the cases. A prospective study conducted in Baghdad reviewed the indications, risk factors, and maternal morbidity and mortality related to emergency obstetric hysterectomy. They reported that 200 cases of 17150 deliveries developed postpartum hemorrhage. In addition, 31 cases ended by EOH, and 169 cases were consecutively managed medically or surgically with an incidence of 1.8 per 1000 deliveries. They reported that EOH was 0.11% and 0.27% following normal deliveries and cesarean sections, respectively.¹⁸ They had a similar age to our study; 25-42 years. In comparison with this study, morbidly adherent placenta was considered to be the most common indication for EOH (51.61%). Ruptured uterus (22.60%), atony of uterus (12.90%), and broad ligament hematoma (9.67%) were located in the next indications. In addition, they reported that all cases required blood transfusion and admission to the intensive care unit. The maternal mortality was 6.45% of 31 cases.¹⁸

Conclusion

This study found that morbidly adherent placenta was the most common indication for emergency obstetric hysterectomy. The balder injury and NICU admission were the most common maternal and fetal

complications, respectively. This study showed that the incidence of previous cesareans section was high in women who underwent a hysterectomy.

Conflicts of interest

The author reports no conflicts of interest.

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