Obstetric Hysterectomy: Frequency, Indications and Complications

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ABSTRACT

Objective — *To determine the frequency, indications and complications of obstetric hysterectomy at a tertiary care centre.*

Study design — *Descriptive case series.*

Place & Duration of study — *Department of Obstetrics & Gynacology Civil Hospital / Dow University of Health Sciences Karachi, from January 2016 to December 2016.*

Methodology — *All patients between 20 - 40 years of age, of any parity who underwent obstetric hysterectomy after 24 weeks of pregnancy till 42 days postpartum, were included in this study. Patients who had hysterectomy for non obstetric indications were excluded. Variables assessed included age, parity, booking status, risk factors, frequency, indications and complications related to hysterectomy. Data was analyzed by SPSS Version 17. Frequency and percentages of numeric variables were calculated. Mean and standard deviation was calculated for categorical variables.*

Results — *During this study period 4296 patients were delivered. Obstetric hysterectomy was performed in 40 (0.93%) patients. Mean age of the patients was 26 year + 3.2 year and mean gestational age 36 + 1.2 week. Majority of the women were non-booked (n=28 - 70%). Most frequent indication was PPH (n=19 - 47.5%). Other indications included uterine rupture (n=14 - 35%) and morbidly adherent placenta (n=6 - 15%). Multiple blood transfusions (>4) were required in 75%. ICU admission was needed in 27 (67.5%) patients. Maternal mortality was 25% (n=10) which occurred due to intractable haemorrhage.*

Conclusions — *Obstetric hysterectomy was associated with high maternal morbidity and mortality. Risk factors included multiparity and previous caesarean section.*

Key words — *Emergency obstetric hysterectomy (EOH), Morbidly adherent placenta (MAP), Postpartum haemorrhage (PPH).*

INTRODUCTION:

Emergency obstetric hysterectomy (EOH) is a major uncommon obstetric procedure performed to save maternal life in cases of intractable obstetric haemorrhage.[1] Obstetric hysterectomy is generally performed when conservative procedures fail to achieve haemostasis in patients with massive obstetric haemorrhage. In spite of availability of variety of conservative measures ranging from misoprostol to balloon tamponade and uterine compression sutures, haemorrhage continues to be the leading cause of maternal death accounting for 27.1% deaths as recent as 2014.[2] In modern obstetrics the incidence of EOH is 0.24 to 5.09 /1000 deliveries.[3-6] Frequency varies in different parts of the world depending upon the awareness and availability of antenatal care, provision of standard obstetric services and effectiveness of the family planning in different parts of the world.[7] The incidence is likely to be high in developing countries like ours due to lack of basic obstetric facilities, social behaviour of women and poverty.

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In the past the most common indications of EOH were ruptured uterus and haemorrhage.[8] Recently abnormally adherent placenta is reported as a major indication of obstetric hysterectomy which could be explained due to rising caesarean section rate throughout the world.[8] Previous caesarean section is an important risk factor as it may result in placenta praevia, morbidly adherent placenta and ruptured uterus thereby increasing the risk of obstetrical hysterectomy. Other risk factors include multiparty, poor antenatal care and unsupervised delivery leading to massive haemorrhage.

Obstetric hysterectomy is a major surgical procedure performed during caesarean section or following vaginal birth. It is likely to be associated with severe intraoperative blood loss and other operative complications. Significant postoperative morbidity and mortality is reported from developing countries like ours probably due to lack of modern obstetric facilities. Though EOH can save maternal life but it requires proper assessment and adequate surgical skills to avoid complications that may impair quality of life in future. In tertiary care hospitals severe maternal haemorrhage requiring obstetric hysterectomy is frequently encountered, therefore this study was designed to determine the frequency and indications of obstetric hysterectomy in our local population as well as to determine the associated complications at a tertiary care centre.

METHODOLOGY:

This was a case series conducted in the Department of Obstetrics & Gynaecology Civil Hospital / Dow University of Health Sciences Karachi, from January 2016 to December 2016. Obstetric hysterectomy was defined as hysterectomy performed for haemorrhage unresponsive to conservative medical and surgical treatment at the time of caesarean section or after delivery till 42 days postpartum. The study population included all the women between 20- 40 years of age, gestational age >24 weeks and of any parity who were admitted in emergency and underwent obstetric hysterectomy. Patients requiring obstetric hysterectomy in puerperium were also included. Patients more than 40 years of age, gestational age less than 24 weeks, those undergoing hysterectomy for indications other than obstetrics reasons or beyond 42 days postpartum, were excluded from this study.

The study variables included age, parity, antenatal risk factors, booking status, frequency and indication of hysterectomy. Maternal morbidity was defined as intraoperative complications that included injury to bladder, ureter or bowel, excessive blood loss, need of blood transfusion, anaesthesia related complications and ICU admission. Number of maternal deaths was also recorded. All information was collected on SPSS 17. Data were analyzed for descriptive statistics. Mean and standard deviation of continuous variable was calculated. Frequency and percentage of categorical variables was determined.

RESULTS:

During the study period 4296 patients were delivered and 40 of them required emergency obstetric hysterectomy giving a frequency of 1 in 107 patients (0.93%). This included 24 hysterectomies following vaginal delivery and 16 during caesarean section. Only one obstetric hysterectomy was performed more than 24 hours after delivery while in 39 patients it was done within 24 hours. Majority of patients (n=28 - 70%) were non booked and referred cases.

Demographic characteristics are described in table-I. Mean age of the study subjects was 26 year and youngest patient was 22 year old. Mean gestational age at the time of surgery was about 36 weeks and mean parity was 4. The most frequent indication of obstetric hysterectomy was PPH due to uterine atony (47.5%) followed by ruptured uterus (35%), morbidly adherent placenta (15%) and sepsis (2.5%). This is given in table II. At time of admission 10(25%) patients presented with shock and in 6 (15%) patients BP was un-recordable. Mean haemoglobin level was 6.9 gm% at the time of admission. In study population 16 (40%) patients had previous one or more caesarean sections. In these patients, seven presented with rupture of uterine scar, six were diagnosed as morbidly adherent placenta and three patients encountered massive PPH. All patients required multiple transfusions during surgery, 75% patients required more than 4 units of blood during operation. Only whole blood was required in 37.5% patients while 62.5% required multiple blood products. ICU admission was required in 62.5% patients. Maternal mortality was 25% due to massive haemorrhage (table-III).

DISCUSSION:

Obstetric hysterectomy is an emergency procedure performed to save maternal life in cases of life threatening massive haemorrhage unresponsive to conservative measures.[9] This decision is relatively easy in a multiparous and older women but becomes very difficult in younger age females. Haemorrhage is the most common cause requiring hysterectomy.[10,11] In a study by Chawla et al the incidence of obstetric hysterectomy was 0.08% similar to other studies reported from Columbia

Table I: Patients' Demography

	Minimum	Maximum	Mean
Age of patients	22 year	40 year	26 year
Gestational Age	24 weeks	41 weeks	36 weeks
Parity	1	7	4

Table II: Indications of Hysterectomy

Indication	Frequency (n)	Percentage (%)
Postpartum Haemorrhage	19	47.5%
Uterine Rupture	14	35%
Morbidly Adherent Placenta	06	15%
Sepsis	01	2.5%

Table III: Maternal Outcome

Variables	Observations	Number (n)	Percentage (%)
Vitals on Admission	Stable Unstable Shock	24 10 06	60% 25% 15%
Intraoperative Blood Requirement	1-3 units 4-6 units >6 units	10 16 14	25% 40% 35%
Blood Products Used in Surgery	Only packed cells Multiple products (Packed cells, FFPs &	15 25	37.5% 62.5%
ICU admission	Required	27	67.5%
Complications	Ureteric injury Bladder injury DIC Sepsis	01 02 04 01	2.5%% 5% 10% 2.5%
Mortality	Maternal death	10	25%

(.08%) and US (.06%).[12-14] Singh et al from India reported higher incidence of obstetric hysterectomy (0.54%).[15] A local study by Korejo et al reported 0.275 frequency of EOH.[16]

In our study the frequency of EOH was 0.92% which is higher than other studies. This could be due to higher rate of referrals to our tertiary care centre. The most common indication of EOH in this study was uterine atony (45%) followed by uterine rupture (35%). This reflects the situation in most of the developing countries where uterine atony is a major indication for EOH. Studies from tertiary care centres in India and Turkey also reported uterine atony to be the most common indication for EOH.[12,17] In a study by Chawla et al uterine rupture was indication for obstetric hysterectomy in 17.3% patients similar to that in a study from Turkey. However, Korejo et al reported uterine rupture as most frequent indication of EOH accounting for 47.1% cases.[16] In our study uterine rupture was second most common indication after uterine atony. Previous uterine scar was found in 50% cases of uterine rupture. In non-scared uterus the causes of rupture included obstructed labour, fetopelvic disproportion, grand-multiparty and especially injudicious use of oxytocin in multipara by untrained birth attendants.

Over the last one decade rising trend of morbidly adherent placenta has been noted worldwide i.e from 25-40%, which could be due to increasing rate of caesarean deliveries during the last two decades.

Adherent placenta was the commonest indication of EOH from Turkey contributing to 40% cases.[17] A study from JPMC Karachi reported 11.6% cases of adherent placenta which is almost similar to our results. An important observation in our study was an association of previous caesarean section and EOH. Previous caesarean section accounted for uterine rupture in seven patients and adherent placenta in six, while three patients with previous caesarean section had PPH and required EOH. Previous caesarean section thus is an important significant risk factor for obstetrical hysterectomy, thus by reducing the caesarean delivery the rate of EOH may be decreased.

Being a major emergency operative procedure EOH is associated with significant maternal morbidity and mortality.[18,19] In a study from China more than half of the patients required admission to intensive care unit.[20] In our study 67% patients were admitted to ICU. Other complications in our study included ureteric and bladder injury, DIC and sepsis which are similar to other studies.[21,22] There were ten maternal deaths which is comparable with other local studies.[18,23] This is high from maternal deaths reported from India (5.7%) and Knight et al from UK (0.6%).[24,25] This could be attributed to the mishandling by untrained birth attendants, inadequate transportation, late referrals and excessive blood loss prior to reaching hospital. There is a definite need to improve primary health care facilities and training of basic health care staff so as to identify high risk patients and timely referral to tertiary care centres when required. Educating women and their families is equally important to avail immediate obstetric care at suitable place rather than having long trials by unskilled birth attendants at home. Timely referral is likely to reduce significant complications and associated maternal morbidity and mortality.

CONCLUSIONS:

Obstetric hysterectomy was required in some cases to save maternal life. Morbidly adherent placenta was an important cause and its association with previous caesarean delivery remained a significant finding.

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