

Emergency Obstetric Hysterectomy

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ABSTRACT:

Objective: To evaluate the frequency of emergency obstetric hysterectomy, and to find out its indications and accompanying maternal and perinatal morbidity and mortality.

Methodology: This cross sectional study was undertaken at Obstetrics and Gynaecology department of Unit-I, Jinnah Postgraduate Medical Centre, Karachi from 1st January 2015 to 31st December 2016. Those patients who had emergency obstetric hysterectomy at JPMC during this period were included in the study. Their parity, booking status, age, indication and, the type of surgery undertaken was recorded. Maternal and fetal morbidity and mortality were also determined. Data was analyzed using SPSS 20.

Results: A total of 14,157 deliveries were carried out during the study period. Out of them, 32 hysterectomies were undertaken due to obstetric indications (0.22%). The most common indication was ruptured uterus in 20 (62.5%). The most common complication was infection (40.6%). Five patients could not survive after the surgery (15.6%) and perinatal deaths were 19 (59.3%).

Conclusion: Obstetric hysterectomy needs to be done in emergency cases where life of the patient can not be saved otherwise. However, clear judgement, highly professional surgical technique and optimal time for the surgery can decrease mortality and morbidity in such cases.

Keywords: Obstetric Hysterectomy, Postpartum haemorrhage, Uterine rupture, Maternal & Perinatal Mortality & Morbidity

INTRODUCTION:

Emergency obstetric hysterectomy (EOH) is the removal of uterus at the time of caesarean section, immediately after vaginal delivery, or following a caesarean section or vaginal delivery in the period of puerperium due to intractable haemorrhage in order to save the life of the patient¹.

In the developed world, emergency obstetric hysterectomy is seldom required. Commonly this procedure is done for gynaecological indications such as endometrial carcinoma, but in developing countries, severe haemorrhage due to various causes is the most common indication after failure of conservative measures^{2,3}. Previously, it was mostly carried out due to ruptured uterus and uncontrollable hemorrhage⁴. Abnormally adherent placentae, and placenta praevia are the major reasons for carrying out obstetric

hysterectomy and are most probably associated with rise in the incidence of caesarean sections over the last two decades^{4,5}. Increased incidence of caesarean sections results in exaggerated number of scarred uteri, leading to a greater exposure of pregnant women to growing morbidity from placenta praevia, adherent placenta such as accreta, and even uterine rupture. All of this results in augmented incidence of emergency obstetric hysterectomy.

Emergency obstetric hysterectomy can be associated with intra-operative complications, such as severe blood loss and post-operative maternal mortality and morbidity⁶. Obstetric hysterectomies can rescue maternal lives, but need proper judgement and excellent surgical skills. With this background in mind, this study was planned to evaluate frequency, indications, and maternal and perinatal mortality and morbidity related with this procedure at a tertiary care hospital.

METHODOLOGY:

This cross sectional study was undertaken at the Obstetrics and Gynaecology department of JPMC from 1st January 2015 to 31st December 2016. All cases of obstetric hysterectomy during this two-year study period were enrolled. Parity, booking status, age and the reason for the obstetric hysterectomy was recorded. The type of surgery undertaken was also noted and they were followed up for maternal and fetal mortality and morbidity. The collected data was analyzed on SPSS 20. Qualitative variables were evaluated as frequencies and percentages. A 95% confidence interval for indications and complications was also determined to compare our results with other studies. Quantitative variables were calculated as mean \pm Standard Deviation (SD).

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RESULTS:

A total of 14,157 patient were delivered during the study period, comprising of 10,422 (73.6%) vaginal deliveries and 3,735(26.4%) caesarean sections. Of all these deliveries, 32 (0.22%) cases resulted in obstetric hysterectomy. Twelve cases were followed by vaginal delivery, whereas 20 cases resulted during the procedure, or following a caesarean section. This lead to a frequency of 1 in 442 of all deliveries. The data showed that it was 1 in 868 vaginal deliveries, but the frequency was increased among caesarean sections, accounting for 1 in 186. Only 12 (37.5%) of these patients were booked,

whereas rest 20 (62.5%) were un-booked. They were referred from other other local hospitals and clinics to JPMC (Table-1).

All the patients were part of low socio-economic class. Their age were between 26 to 45 years, mean age being 31.6 ± 6.58 years. The parity was from 3–11 (mean 5.7 ± 2.18). The surgery carried out on all the patients was total abdominal hysterectomy with preservation of either one or both ovaries. All the procedures were carried out by consultant obstetricians or by experienced senior registrars. Blood was transfused to all the patients, with a minimum of 3 and maximum of 21 units.

Table-1: Frequency of Hysterectomy among 14157 deliveries

Mode of Deliveries	No. of Deliveries	% of Total Deliveries (n=14,157)	Hysterectomy (n=32)	% of Hysterectomy (n=32)	% of Hysterectomy among mode of deliveries
Vaginal deliveries	10422	73.6 (72.9 - 74.3)	12	37.5 (22.1 - 55.0)	0.11 (n=104,22) (0.06 - 0.19)
Caesarean Section	3735	26.4 (25.7 - 27.1)	20	62.5 (44.9 - 77.8)	0.53 (n=3,735) (0.33 - 0.81)
Total	14157	100.00	32	100.0	0.22 (n=14,157) (0.15 - 0.31)

Figures in parentheses are 95 % Confidence Intervals

Ruptures uterus was the indication of hysterectomy in 20 patients. Of these 12 patients did not have history of previous lower segment caesarean sections (LSCS, thus unscarred uterus), but all of these were grand multipara; 6 had obstructed labour due to disproportion; 2 had malpresentation; 4 had history of excessive dose of injectable oxytocin given as bolus at home by trained birth attendant; while 8 suffered from rupture of former caesarean section scar (Table-2). Only one patient

presented with severe, uncontrollable uterine haemorrhage due to atony of uterus, not responding to conservative management. Constant haemorrhage from placental site due to major degree of placenta praevia was the reason in 2 patients requiring hysterectomy, while 9 patients underwent hysterectomy due to morbidly adherent placentae. But these patients presented with a uterine scar from former 2, 3 or 4 previous LSCS.

Table-2: Indications for obstetric hysterectomy (n=32)

Indication	No. of Patients	Percentage	95% CI
Ruptured uterus, due to	20	62.5%	44.9-77.8
1. Oxytocin injection	04	12.5%	4.1-27.4
2. Obstructed Labour	06	18.7%	7.9-34.9
3. Malpresentation	02	6.2%	1.0-19.1
4. Previous LSCS	08	25%	12.3-42.0
Postpartum haemorrhage due to uterine atony	01	3.1%	0.1-14.4
Placental Abnormalities	09	28.2%	14.6-45.3
1. Placenta accreta	03	9.3%	2.4-23.4
2. Placenta increta	04	12.5%	4.1-27.4
3. Placenta percreta	02	6.2%	1.0-19.1
Placenta praevia Type IV	02	6.2%	1.0-19.1

C.I: Confidence Interval

Intra-operative and post-operative complications occurred in 16 patients. Infection was the commonest complication (Table-3). There were 5 maternal deaths. 3 patients died due to intractable bleeding on the operating table, 1 death occurred immediately after the surgery from irreversible haemorrhagic shock after

uterine rupture, and 1 died due to Disseminated Intravascular Coagulation (DIC). There were 19 (59.3%) perinatal deaths; 18 were stillborn due to ruptured uterus. Only 1 was early neonatal death due to intra-uterine hypoxia. 13 (40.6%) babies were alive and well.

Table-3: Maternal Morbidity

Complications	Number of patients	Percentage
Sepsis	13	40.6%
Acute renal failure	02	6.2%
Bladder injury	01	3.1%
Total	16	50.0%

DISCUSSION:

Obstetric hysterectomy is regarded as one of the most difficult judgement in modern obstetric. It is a life saving surgical procedure in life threatening conditions, so it was easier to decide about performing this procedure in the grand multipara in this study, as compared to low-parity women, where this difficult choice was undertaken to save a life. Since this is a tertiary care centre, most of the incoming cases are already complicated, but despite this fact, the frequency of the procedure was 0.22%, which was in accordance with the frequency reported from Bahawalpur, Pakistan, and low when compared with cases from Peshawar and Hyderabad⁷⁻⁹. The frequency of EOH at the JPMC in this study was almost the same as reported in previous studies in 1995 (0.3%), and 2012 (0.27%)^{10,11}. Most common age group presented between 20-30-year, and were multipara. Same observations were made by Ahmad and Barclay^{12,13}. Ruptured uterus was the most common indication in the present study, followed by pathological attachment of placenta and intractable haemorrhage from the placental bed. Analogous results were observed in various researches from Pakistan^{7,8,12}, the reasons were also similar, while the predominant causes determined in other developing countries were pathological adhesion of placenta and atony of uterus^{14,15}.

A profound alteration in the indication of obstetric hysterectomy has been seen over a period of time from one area to other. In this study, obstructed labour due to disproportion, grand multiparity, malpresentation and excessive, and injudicious use of oxytocin led to the spontaneous extensive rupture of unscarred uterus, and distorted the gross structure of uterus to such a degree that conservative surgery became impossible. This is most likely due to the social factors our society is facing such as poverty, illiteracy, ignorance of health care facilities like lack of antenatal care and poor availability

of healthcare services.

The hazardous combination of prior caesarean sections, placenta praevia and morbid attachment of placenta was also seen in this study. Other studies have also reported this dangerous combination^{16,17,18,19}. It has been found in the literature that the frequency of obstetric hysterectomy due to atony of uterus had decreased from 42% to 29.2%, whereas the number of cases have increased from 25.6% to 41.7% due to pathological placentation^{20,21,22}. This might be due to the exaggerated rate of caesarean deliveries and decreased cases of postpartum haemorrhage due to uterine atony because of better treatment with prostaglandins during past two decades. Similar results were seen in another study reporting 0.5% to 3.9% rise in the incidence of abnormal adhesion of placenta¹⁹.

Total abdominal hysterectomy with conservation of one or both ovaries was carried out in most patients in this study. It was in contrast with studies undertaken in various cities of Pakistan reporting subtotal hysterectomy as the most frequent procedure^{8,9,12}. This study is in accordance with prior studies exhibiting association between high maternal morbidity and mortality with emergency obstetric hysterectomy^{7,8,10,11}. Maternal morbidity in this study was 50%; and most of the complications seen were sepsis, urinary tract damage, and DIC which were in accordance with previous studies^{10,11,13,21,22}. Even maternal mortality (5 cases, 15.6%) was in line with previous studies from Pakistan,^{7,8,9,10} but extremely high in comparison to the developed countries^{18,23,24,25}. The most common reasons for maternal deaths were mishandling by poorly trained birth attendants and doctors at homes or inadequately equipped clinics, late presentation and non-availability of proper transport or ambulances for such patients. The patients were already in shock or DIC by the time they were brought to the hospital, highlighting the severity

of the problem for which surgery was performed, instead of the procedure itself. Survival rate of 85% was because of highly skilled technique, efficient anaesthetist, and adequate blood transfusion.

There was 59.3% perinatal mortality in this study, most frequent reason being uterine rupture. This was less as compared to a study done by Redman et al in Libya and another in Saudi Arabia showing 73% fetal mortality in their study due to ruptured uterus^{26,27}.

CONCLUSION:

Emergency obstetric hysterectomy although obsolete in developed countries, remains an essential tool for consultant obstetricians in our part of the world where patients present with severe complications. They are required to operate at the optimum time with sharp judgement, using skilled surgical technique to save maternal as well fetal life and to reduce mortality and morbidity.

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