



Emergency Obstetric Hysterectomy Over a Period of Seven Years – A Clinical Review

KEYWORDS

Emergency obstetric hysterectomy, maternal morbidity, maternal mortality

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ABSTRACT *This study is to determine the incidence, indications and maternal complications of emergency obstetric hysterectomies performed in a tertiary hospital over a period of seven years from January 2003 to December 2009. Maternal age, parity, indication for hysterectomy, type of the surgery performed, amount of blood transfused and complications were evaluated.*

During the study period there were 1,42,130 deliveries, out of which 40,399 (28.4%) were by cesarean section. Of the total deliveries, there were 197 emergency obstetric hysterectomies, with an incidence of 1.38 per 1000 deliveries. The commonest indication for emergency obstetric hysterectomy was atonic post partum hemorrhage followed by rupture uterus and abnormal placentation. Among the emergency obstetric hysterectomies, there were 24 (12.2%) cases of maternal death. Hypovolemic shock, disseminated intravascular coagulation and urinary bladder injury were the other complications. Facility for blood transfusion with early and timely referral of high risk cases to a tertiary centre can avoid emergency obstetric hysterectomies to a certain extent, thereby reducing maternal morbidity and mortality. Active management of third stage of labor should be practiced in all centers including peripheral hospitals for a better maternal outcome.

INTRODUCTION

Emergency obstetric hysterectomy is a life saving procedure in complicated deliveries where maternal life is under threat. Common indications are postpartum bleeding, uterine rupture and major degrees of placenta praevia. Delay in decision making for hysterectomy can increase the maternal morbidity and mortality. Unfortunately this condition necessitates hysterectomy in fertile women of childbearing age.

Difficulties and complications associated with emergency obstetric hysterectomy may be due to the poor peri-operative condition of the patient or the surgical technique⁽¹⁾. In poor settings, like in developing countries, as the condition arises as emergency, the preparations are not ready or adequate, hence putting the patient in potential danger⁽²⁾. Rupture uterus is one of the most serious complications of childbirth with adverse consequences for both the mother and fetus.

MATERIAL AND METHOD

Retrospective analysis of all emergency obstetric hysterectomies was done during the seven year study period from January 2003 to December 2009 at Government Medical College, Calicut, Kerala, which is a tertiary care hospital. The study included hysterectomies done for any indications during pregnancy, labor, puerperium and complications following termination of pregnancy, such as uterine perforation and sepsis. Maternal age, parity, mode of delivery, indication for hysterectomy, amount of blood transfused, problems during surgery, type of operation performed, post operative complications and hospitalization period were noted. The term abnormal placentation in this study included both placenta praevia and adherent placenta.

OBSERVATIONS

Total number of deliveries during the seven year period were 1,42,130, of which 40,399 were by caesarean section. Emergency obstetric hysterectomy was required in 197 women with an incidence of 1.38 per 1000 deliveries (Table 1).

Table 2 shows the age and parity distribution in the study group. Primipara constituted 15.7% and the rest (84.3%) were multipara. Majority (83.7 %) of emergency obstetric hysterectomies in this study were in the age group \leq 30years. Of the total deliveries in our hospital, 86.5% were in the age group \leq 30years.

The commonest indication for emergency obstetric hysterectomy (111/197=56.3%) was post partum hemorrhage (PPH). Of these, 47.7 % (94/197) had atonic PPH and 8.6% (17/197) had mixed (atonic & traumatic) bleeding. Rupture uterus was the next (28.9%), followed by abnormal placentation (9.14%) as the indications (Table 3).

Out of the 111 cases of PPH, 36 (32.4%) cases were following cesarean section. Among the PPH cases, induction of labor was done in 38 (34.2%) and there was placental abruption in 16 (14.4%) patients. Other risk factors were severe preeclampsia (13 patients), fibroid complicating pregnancy (5 patients), amniotic fluid embolism (2 patients), and jaundice complicating pregnancy (2 patients). One patient had acute fatty liver of pregnancy and another was a referred case in shock following caesarean section where the upper flap of uterus was sutured to the posterior uterine wall.

Of the 57 cases of rupture uterus, 13 (22.8%) had obstructed labor of which one fetus had hydrocephalus. Another 13 (22.8%) patients had induction of labor. Other factors were dehiscence of previous scar in 11 (19%), surgical termination of pregnancy in the past in 7 (12%) and instrumental delivery in three. Nine patients (15.8%) had spontaneous rupture of uterus and of this four were grand multipara. One patient was referred following manual removal of placenta.

Out of the 18 (9.14%) cases of abnormal placentation, 50% had previous cesarean section. There were nine cases of placenta accreta in the study group. All the four cases of secondary PPH were following cesarean section. Three had

rent at the incision site and one had features of local infection. One of the patients with septic abortion had multiple uterine fibroids. There were two cases of torsion uterus and one case of acute inversion uterus which required hysterectomy.

Out of the hysterectomies performed, 58.9% was subtotal hysterectomy and the rest was total hysterectomy. Unilateral salpingo ovariectomy was done in 24(12.2%) cases and one required bilateral salpingo ovariectomy. 22 (11.2%) patients required internal iliac artery ligation to control haemorrhage.

Eight patients had urinary bladder injury which was repaired. Ureteric stenting was done in four cases of suspected ureteric injury and ureterocystostomy in one who had uterine rupture. Four patients had post hysterectomy intraperitoneal bleeding and required re-laparotomy. Two patients had bowel injury of which one was following termination of pregnancy.

All the patients in this study group received blood transfusion, of which 85.8% (169/197) were transfused with ≥3 units of blood. Hospital stay was on an average of ten days in uncomplicated hysterectomies.

There were 24 (12.2%) cases of maternal death in this study group. Of this, sixteen patients had uterine atony, among which ten had comorbidities and two had obstructed labor. Other causes of maternal death were uterine rupture (4 cases), abnormal placentation (3 cases) and one case of inversion uterus. 88.5% of the maternal deaths were referred cases.

DISCUSSION

The incidence of obstetric hysterectomy in this study was 0.138%. This was similar to the study by Mukherjee et al (0.15%)⁽³⁾ and Kore et al (0.18%)⁽⁴⁾. Gupta et al⁽⁵⁾ reported an incidence of 0.26% and Mrinalini et al, 0.35 %⁽⁶⁾ (Table 5)

Atonic PPH was the main indication for emergency obstetric hysterectomy in different studies (Mrinalini et al -33.3 %⁽⁶⁾, Kant Anitha et al -41.4%⁽⁷⁾). In the study by Amos et al⁽⁸⁾ and Yoong et al⁽⁹⁾, PPH due to uterine atony was the main indication for emergency obstetric hysterectomy. In our study also, atonic PPH was the main indication for emergency obstetric hysterectomy (47.7%). So prevention of uterine atony is a key factor in reducing the number of emergency obstetric hysterectomy. The risk factors for emergency obstetric hysterectomy are multiparity, cesarean delivery in previous or present pregnancy and abnormal placentation⁽¹⁰⁾.

Our hospital is a referral centre where large numbers of patients are referred from peripheral hospitals. In this study, 67% were referred cases. Active management of third stage of labor should be practiced in all hospitals including peripheral centres. Adequate amount of blood and blood products should be made available in anticipation for all high risk obstetric cases. All cases using oxytocics for induction or acceleration need careful supervision throughout labor. Surgical intervention if indicated should be done before the patient is too sick to withstand the procedure. Early and timely referral of cases before the condition deteriorates is very important in reducing maternal morbidity and mortality. There should be no delay in transferring patients to a higher centre, especially those who are at high risk.

The second indication for emergency obstetric hysterectomy was rupture uterus (28.9%) in our study. Kant Anitha et al⁽⁷⁾ had an incidence of 36.5% in their study. Praneshwari Devi et al⁽¹¹⁾ reported the incidence of 23% & Mrinalini et al⁽⁶⁾-26.6%. Main causes for rupture were obstructed labor, previous scar on the uterus, induction of labor and multiparity. Induction of labor was an important risk factor for both PPH and uterine rupture in this study. Hence induction of labor should be done only in absolutely indicated cases.

Abnormal placentation is the leading cause of emergency hysterectomy when there is a high cesarean section rate. Therefore, cesarean section should be done only for valid clinical indications⁽¹²⁾. In patients with complete adherent placenta, hysterectomy is preferred without attempting to remove the placenta, which will cause torrential bleeding. Patients who had previous uterine surgery, multiple cesarean sections or placenta praevia should be counseled regarding the possibility of emergency hysterectomy⁽¹³⁾.

Subtotal hysterectomy is simple, safer and associated with lesser blood loss. Total hysterectomy was needed when the bleeding was from the lower segment such as placenta praevia or tear extending to the lower segment.

The incidence of maternal death in this study was 12.2% which was similar to the study by Kanwar et al (12.2%)⁽¹⁴⁾ and higher compared to Kumary Archana et al (5.4%)⁽¹⁵⁾. Kant Anitha et al⁽⁷⁾ had reported a maternal mortality of 9.7%. Delay in transport and referral was a main reason for increased maternal mortality in this study.

It should be possible in future to reduce the incidence of emergency obstetric hysterectomy by more conservative medical and surgical procedures. Nearly half of the cases of emergency obstetric hysterectomy could have been prevented if adequate uterine contractility was achieved after delivery.

Table 1- Incidence of obstetric hysterectomy

Study group	Number
Vaginal deliveries	101731
Cesarean section	40399
Total deliveries	142130
Obstetric hysterectomy	197
Incidence of obstetric hysterectomy	1.38/1000

Table 2-Age and parity in the study group (n = 197)

Age years	Parity					Total	Percentage
	1	2	3	4	≥5		
≤20	11	4	0	0	0	15	7.6
21-25	6	34	14	3	5	62	31.5
26-30	10	41	20	14	3	88	44.6
31-35	3	7	6	3	4	23	11.7
36-40	1	2	1	2	3	9	4.6
Total	31	88	41	22	15	197	
Percentage	15.7	44.7	20.8	11.2	7.6		100

Table 3- Indications for Obstetric hysterectomy (n = 197)

Indications	Number	Percentage
Primary PPH	111	56.34
a) Atonic PPH	94	47.7
b) Mixed (atonic & traumatic)	17	8.6
Rupture uterus	57	28.93
Abnormal placentation	18	9.14
Secondary PPH	4	2.03
Septic abortion	3	1.52
Torsion uterus	2	1.02
Secondary abdominal pregnancy	1	0.51
Inversion uterus with septicemia	1	0.51

Table 4- Peri operative problems (n = 197)

Problem	Number	Percentage
Bladder injury	8	4.06
Ureteric stenting	4	2.03
Bowel injury	2	1.01
Ventilator support	35	17.7
Internal iliac ligation	22	11.2
Coagulation failure	39	19.7
Maternal death	24	12.2
Hypovolemic Shock	74	37.6
Relaparotomy	4	2.03
Renal failure	2	1.01
Hepatic failure	2	1.01
Cardiac arrest	1	0.51
Pulmonary embolism	1	0.51

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Table 5 – Reported incidence and indications of Emergency obstetric hysterectomy

Author	Incidence%	Atonic PPH%	Rupture uterus%	Adherent placenta%
Mukherjee et al ⁽⁷⁾	0.15	14.9	38.3	8.40
Kore et al ⁽⁹⁾	0.18	32.3	38.2	5.88
Gupta et al ⁽⁵⁾	0.26	9.7	69.7	6.30
Mrinalini et al ⁽⁶⁾	0.35	33.3	26.6	10.0
Kant Anita et al ⁽⁷⁾	0.26	41.4	36.5	12.9
Praneshwari devi et al ⁽¹¹⁾	0.07	19.2	23	26.9
Kanwar et al ⁽¹⁴⁾	0.32	31.7	36.5	14.6
Kumari Archana et al ⁽¹⁵⁾	0.73	8.03	75	5.35
Amos et al ⁽⁸⁾	0.19	48.2	10.7	26.8
Present study	0.138	47.7	28.9	9.14

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