

Emergency Obstetric Hysterectomy

Razia Korejo, Ayesha Nasir, Haleema Yasmin, Shereen Bhutta
Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre, Karachi.
Corresponding Author: Razia Korejo. Email: razia_korejo2000@yahoo.co.in

Abstract

Objective: To assess the frequency of obstetric hysterectomy, its indications and associated maternal and perinatal morbidity and mortality.

Methods: The retrospective observational analytical study was conducted at the Department of Obstetrics and Gynaecology, Unit-I, Jinnah Postgraduate Medical Centre, Karachi from January 2003 to December 2009. Records of all patients who had undergone hysterectomy at the study centre during the study period were explored for age, parity, booking status indication and the type of operation performed. Maternal and foetal morbidity and mortality were also recorded. SPSS 13.0 was used for statistical analysis.

Results: Against the total 44,612 deliveries during the period, 121 hysterectomies were performed for obstetric indications. The frequency of the procedure, as such, was 1 in 368 (0.27%) deliveries. The major indications were ruptured uterus in 57 (47.1%), and severe postpartum haemorrhage due to atony of uterus in 35 (28.9%). Other indications included severe haemorrhage due to placental abnormalities in 14 (11.6%); placenta previa in 3 (2.5%); abruptio placenta in 4 (3.3%); and severe infection following vaginal delivery in 3 (2.5%). Infection was the commonest complication seen in 14 (11.6%) patients. There were 11 (9.0%) maternal deaths and 65 (53.7%) perinatal deaths.

Conclusion: Emergency obstetric hysterectomy remains a necessary tool for consultant obstetricians. Acting at the optimal time with clear judgment, and professional surgical technique can reduce morbidity and mortality in such cases.

Keywords: Postpartum haemorrhage, Atony, Obstetric hysterectomy. (JPMA 62: 1322; 2012)

Introduction

Emergency obstetric hysterectomy is the removal of uterus at the time of caesarean section, following caesarean section, immediately after vaginal delivery or in the period of puerperium in order to save maternal life.¹

Obstetric hysterectomy in the developed world is mainly done for gynaecological indications such as sterilisation and leiomyoma in obstetrical practice, but in developing countries it is usually done when conservative measures fail to control the haemorrhage.^{2,3} In the past the most common indications were haemorrhage and ruptured uterus.⁴ Recent reports show that abnormal placental adherents — placenta previa — is emerging as the major indication for obstetric hysterectomy and is most likely related to increase in the number of caesarean delivery over the past two decades.^{4,5} As the number of caesarean sections is increasing, the number of scarred uteri is also increasing. This exposes the gravid women to increasing morbidity from uterine rupture, placenta previa and accrete, thus increasing the incidence of emergency obstetric hysterectomy. Emergency obstetric hysterectomy is associated with severe blood loss, intra-operative complications and significant post-operative maternal mortality and morbidity. The high incidence of maternal morbidity and mortality is reported from developing countries.⁶ Obstetric hysterectomy can save many maternal lives, but requires proper judgment and skill.

The purpose of the present study was to determine the frequency, indications, maternal and perinatal mortality and morbidity associated with emergency obstetrics hysterectomy at a tertiary care hospital.

Patients and Methods

The Department of Obstetrics and Gynaecology is the busiest department of Jinnah Postgraduate Medical Centre (JPMC), admitting over 12000 cases annually. Nearly 7000 deliveries are conducted each year, of which more than 80% are unbooked. All patients who had come in emergency had been referred from small clinics, hospitals, maternity homes and traditional birth attendants (TBAs) after some labour-related complications. Others were admitted with the diagnosis of ruptured uterus during labour or came due to postpartum haemorrhage (PPH).

All patients who had undergone obstetric hysterectomy during the seven-year study period from January 2003 to December 2009 were studied in detail regarding their age, parity, booking status and the indication for obstetric hysterectomy. The type of operation performed, maternal and foetal mortality and morbidity were also recorded.

The data was analysed on SPSS 13.0. Qualitative

variables were presented as frequencies and percentages. A 95% confidence interval for indications and complications was also estimated to compare our results with other studies. Quantitative variables were presented as mean \pm Standard Deviation (SD).

Results

During the study period 44,612 patients were delivered at the department of which 35,585 (79.76%) were vaginal deliveries and 9,027 (20.23%) were caesarean sections. A total of 121(0.27%) obstetrics hysterectomies were performed during the period of these 121 cases, 41 (33.9%) followed vaginal delivery; 77 (63.6%) during the course of, or following a caesarean section; 3 (2.5%) in the postpartum period. The frequency of obstetric hysterectomy was 1 in 368 (0.27%) of all deliveries. Among the vaginal deliveries, it was 0.11%, or 1 in 868 deliveries, and among the caesarean section, it was 0.85%, or 1 in 117.

Among 121 obstetrics hysterectomies, 23 (19%) patients were booked at JPMC and 98 (81.0%) were unbooked and had been referred from other clinics. All patients belonged to the low socio-economic class. Their age ranged between 19 to 43 years, with a mean age of 31.6 \pm 6.58 years; parity ranged between 1 - 11 with a mean of 5.7 \pm 2.18; 33 (48.5%) patients were grand multipara.

All operations were total abdominal hysterectomies with conservation of either one or both ovaries, and were performed by consultant obstetricians or by experienced senior registrars. All patients had blood transfusion. A minimum of 2 units and maximum of 24 units were given as indicated.

Of the patients, 57 (47.1%) underwent hysterectomy

Table-1: Obstetric Hysterectomy.

Indication	No. of patients	Percentage
Ruptured uterus	57	47.10%
Oxytocin injection	21	(38.3 – 56.0) 95%CI*
Obstructed labour	13	
Malpresentation	8	
Previous LSCS	15	
Postpartum haemorrhage due to atony uterus	40	33.10% (25.1 – 41.8) 95% CI
Placental abnormalities	21	17.30%
◆ Morbid adherent of placenta	14	(11.4 – 24.8) 95% CI
*Placenta accrete	5	
*Placenta increta	5	
*Placenta percreta	4	
◆ Type-IV placenta previa	3	
◆ Abruptio placenta	4	
Severe infection	3	2.50% (0.6 – 6.6) 95% CI

*CI: Confidence Interval. LSCS: Lower Segment Caesarian Section.

Table-2: Complications.

Complications	Number of patients
Sepsis	14
Acute renal failure	2
Bladder injury	2
Vesicovaginal fistulae	2
Total	21(16.5%) (10.7 – 23.9) 95% CI*

*CI: Confidence Interval.

for ruptured uterus; 13 (10.7%) had obstructed labour due to disproportion; 8 (6.6%) had malpresentations; 21 (17.3%) had history of oxytocin injection given as bolus by TBA at home. All patients with rupture of unscarred uterus were grand multiparas, while 15 (12.4%) had rupture of the previous caesarean section scar (Table-1).

Forty (33.1%) women had hysterectomy due to uterine atony causing persistent uterine bleeding that failed to respond to conservative treatment. In 8 (6.6%) patients even the uterine packing failed to control the bleeding. Persistent bleeding from placental site was the aetiology in 3 (2.5%) patients with major degree of placenta previa necessitating hysterectomy; 14 (11.5%) women underwent hysterectomy due to placenta accrete.

All these patients had a uterine scar from previous 2, 3 or 4 lower segment caesarean sections. In 4 (3.3%) patients, abruptio placentae (couvelaire uterus) associated with hypofibrinogenaemia required large quantities of blood and blood products before and during the surgery. Three (2.5%) patients had hysterectomy in the puerperium due to severe infection following home delivery of a macerated baby.

Intra-operation and post-operation complications occurred in 20 (16.5%) (Table-2). Infection was the commonest complication. Two (1.65%) patients who developed vesico-vaginal fistula had obstructed labour.

There were 11 (9 %) maternal deaths. Four (3.3%) patients died on the operation table due to massive PPH; 3 (2.5%) died soon after the operation from irreversible haemorrhagic shock due to ruptured uterus; 2 (1.65%) died because of disseminated intravascular coagulation (DIC); 1 (0.8%) had severe infection following vaginal delivery at home and died on 7th postnatal day due to septic shock; and 1 (0.8%) patient died from renal failure despite haemodilysis following abruptio placenta.

There were 70 (57.8%) perinatal deaths: 61 (50.4%) were stillborn — 57 due to ruptured uterus and 4 due to abruptio placentae; 9 (7.4%) were early neonatal deaths due to intra-uterine hypoxia. Fifty-one (42.1%) babies were alive and well.

Discussion

The decision to perform emergency obstetrical hysterectomy in the cases under study was easier in highly parous women, unlike low-parity women, where this difficult decision is made to save a life. Being a tertiary care centre mostly receiving complicated cases, the frequency of emergency obstetrical hysterectomy was (0.27%), which is similar to the frequency reported from Bahawalpur, Pakistan, but low in comparison with reported frequency from Peshawar and Hyderabad.⁷⁻⁹ The frequency of obstetrical hysterectomy at the JPMC is almost the same as reported in 1995 (0.3%).¹⁰ Majority of patients who underwent hysterectomy were in the 20-30 years age group and were multipare. Similar trend was observed by Ahmed and Bacly.^{11,12} The most frequent indication for obstetrical hysterectomy in the present study was ruptured uterus (47.1%) followed by uterine atony (28.9%), morbid adherent of placenta and uncontrollable bleeding from the placental bed. Similar results have been reported by different studies from Pakistan.^{7,8,13} The indication were almost the same, while the most frequent indications reported from the developing countries were morbid adherence of placenta and uterine atony.^{14,15} There is significant change in the indication of obstetrical hysterectomy over a period of time from one region to another. In the present series, spontaneous extensive rupture of unscarred uterus, due to obstetric labour, disproportion, malpresentation, grandmultiparity and injudicious use of oxytocin distorted the anatomy to the extent that leaves hysterectomy as the only option. This fact highlights the problems which were present in our society like illiteracy, poverty, lack of antenatal care and poor access to maternal healthcare services. Uterine atony was the second commonest indication for obstructed hysterectomy. All patients in this group received oxytocin infusion, misoprostol and ergometrine. In addition, 8 patients had intra-myometrial injections of prostaglandin F2 alpha and intrauterine packing. Uterine packing of an atonic uterus is considered a hazardous procedure, but is frequently carried out at the JPMC department with good results.

The dangerous combination of placenta previa, morbid adherent placenta and previous caesarean section was also found in the series. This combination was also reported by other studies.^{16,17} It is reported in the literature¹⁸ that the incidence of obstetrical hysterectomy due to uterine atony had decline from 42% to 29.2%, and incidence due to abnormal placentation increased from 25.6% to 41.7%. This may be due to increased rate of placental insertion, and invasion anomalies may be associated with increased number of caesarean deliveries and better treatment of uterine atony with prostaglandin preparation during the last

two decades. Another study reported that the incidence of morbid adherent placenta had increased from 0.5% to 3.9%¹⁹ and well-known risk factors for morbid adherent placenta were placenta previa and previous caesarean birth. Emergency obstetrical hysterectomy has been recommended as a life-saving procedure for morbid adherent placenta.

Total hysterectomy was the commonly performed surgery in this study. This is in contrast with other studies reported from different cities of Pakistan where subtotal hysterectomy was the most common.²⁰ The present study confirms the previous observations that emergency obstetrical hysterectomies are associated with high maternal morbidity and mortality.^{7,8} The overall total maternal morbidity in this study was 16.5%; and the majority of complications observed were sepsis urinary tract injuries, and DIC which was in line with earlier studies.^{13,21,22} There were 11 (9%) maternal deaths which is lower than the other reported studies from Pakistan,^{7,8} but very high when compared with the developed countries.^{18,23} Inadequate transportation, mishandling by untrained attendants and doctors outside the hospital and late presentation were the main causative factors. These deaths were due to severity of the problem for which hysterectomy was indicated rather than the procedure itself. A survival of 90% is attributed to meticulous technique, good anaesthesia, and liberal blood transfusion despite the poor conditions necessitating hysterectomy.

Perinatal mortality in this series was 53.7% and the most common cause was ruptured uterus. This is lower than the study conducted by Rehman et al. in Libya and Saudi Arabia which revealed that 73% of foetal mortality in their series was due to uterine rupture.²⁴

Conclusion

Emergency obstetric hysterectomy remains a necessary tool for consultant obstetricians who need to act at the optimal time with clear judgment, using surgical technique with speed, to reduce mortality and morbidity in such patients.

References

- McNulty JV. Elective cesarean hysterectomy - revisited. *Am J Obstet Gynaecol* 1984; 149: 29-30.
- Barclay D, Hawks BL, Frueh DM, Power JD, Struble RH. Elective cesarean hysterectomy: a 5 year comparison with cesarean section. *Am J Obstet Gynaecol* 1976; 124: 900-11.
- PLETSCH TD, SANDBERG EC. Cesarean hysterectomy for sterilization. *Am J Obstet Gynaecol* 1963; 85: 254-59.
- Chestnut DH, Eden RD, Gall SA, Parker RT. Peripartum hysterectomy: a review of cesarean and postpartum hysterectomy. *Obstet Gynaecol* 1985; 65:365-70.
- Stanco LM, Schrimmer DB, Paul RH, Mishell DR Jr. Emergency peripartum hysterectomy and associated risk factors. *Am J Obstet Gynaecol* 1993; 168: 879-83.
- Zelop CM, Harlow BL, Ferigoletto FD Jr, Safon LE, Saltzman DH. Emergency peripartum hysterectomy. *Am J Obstet Gynaecol* 1993; 168: 1443-8.
- Mahmood S, Ayaz A. Obstetrical hysterectomy. *J Surg Pak* 2005; 10: 20-3.
- Noor S, Majid S, Ruby N. An audit of obstetrical hysterectomy. *J Coll Physicians Surg Pak* 2001; 11: 642-5.
- Nisar N, Sohoo NA. Emergency peripartum hysterectomy: frequency, indications and maternal outcome. *J Ayub Med Coll Abbottabad* 2009; 21: 48-51.
- Korejo R, Jafarey SN. Obstetrics hysterectomy: five years experience at Jinnah Postgraduate Medical Centre, Karachi. *J Pak Med Assoc* 1995; 45: 86-8.
- Ahmad SN, Mir IH. Emergency peripartum hysterectomy experience at Apex Hospital of Kashmir Valley. *Int J Gynaecol Obstet* 2007; 8.
- Barclay DL, Hawks BL, Frueh DM, Power JD, Struble RH. Elective cesarean hysterectomy: a 5 years comparison with cesarean section. *Am J Obstet Gynaecol* 1976; 124: 900-11.
- Bashir A, Ashraf R, Gul A, Tajamul A. Peripartum hysterectomy. *Ann King Edward Coll* 2007; 13: 111-2.
- Knight M, UKOSS. Peripartum hysterectomy in the UK: management and outcomes of the associated haemorrhage. *BJOG* 2007; 114: 1380-7.
- Rabenda-Lacka K, Wilczynski J, Radoch Z, Breborowicz GH. [Obstetrical hysterectomy]. *Ginekol Pol* 2003; 74: 1521-5.
- Bakshi S, Meyer BA. Indications for and outcomes of emergency peripartum hysterectomy. A 5-year review. *J Reprod Med* 2000; 45: 733-7.
- Francois K, Ortiz J, Harris C, Foley MR, Elliott JP. Is peripartum hysterectomy more common in multiple gestations? *Obstet Gynaecol* 2005; 105: 1369-72.
- Zorlu CG, Turan C, Isik AZ, Danisman N, Mungan T, Gokmen O. Emergency hysterectomy in modern obstetric practice. Changing clinical perspective in time. *Acta Obstet Gynaecol Scand* 1998; 77: 186-90.
- Clark SL, Yeh SY, Phelan JP, Bruce S, Paul RH. Emergency hysterectomy for obstetric hemorrhage. *Obstet Gynaecol* 1984; 64: 376-80.
- Ghatak DP. Rupture of the uterus. A review of 146 cases. *Trop J Obstet Gynaecol* 1990; 8: 41-4.
- Baskett TF. Emergency obstetric hysterectomy. *J Obstet Gynaecology* 2003; 23: 353-5.
- Smith J, Mousa HA. Peripartum hysterectomy for primary postpartum hemorrhage: incidence and maternal morbidity. *J Obstet Gynaecol* 2007; 27: 44-7.
- Gonsoulin W, Kennedy RT, Guidry KH. Elective versus emergency cesarean hysterectomy cases in a residency program setting: a review of 129 cases from 1984 to 1988. *Am J Obstet Gynecol* 1991; 65: 91-4.
- Al-Sibaj MH, Rahma J, Rahman MS, Butalack F. Emergency hysterectomy in obstetrics - a review of 117 cases. *Aust NZ J Obstet Gynaecol* 1987; 27: 180-4.