

Emergency peripartum hysterectomy

Alka Singh, Meera Hada, Kundu Yangzom, Anita G.C.
Department of Obstetrics and Gynaecology,
Patan Hospital, Nepal

Abstract:

Objectives: To review the incidence, risk factors, indications, outcomes, and complications of emergency peripartum hysterectomy performed after cesarean section and vaginal deliveries.

Study design: A nine years retrospective study of all those cases who underwent peripartum hysterectomy at Patan Hospital from the year 1997 to 2005.

Results: There were total 28 cases of emergency peripartum hysterectomy, 16 caesarean hysterectomies, and 12 postpartum hysterectomies, with the incidence of 1 per 1364 deliveries. The most common indication for hysterectomy was uterine atony (35.7%) followed by uterine rupture (25%). Average estimated blood loss was 1600 ml, average time from delivery to hysterectomy was 130 minutes, the most common post operative complication was unspecified fever and the average length of hospitalization was 11.17 days. There was only one maternal mortality with 32% maternal morbidity and four perinatal mortality. **Conclusion:** Peripartum hysterectomy is usually associated with significant maternal and fetal morbidity and mortality yet it remains a potentially life saving procedure. Timely decision to intervene is essential for the optimum outcome. Uterine atony is the leading indication for emergency hysterectomy performed followed by rupture uterus and morbid adherent placenta.

Key Words: Caesarean hysterectomy; Peripartum hysterectomy; Postpartum hysterectomy

Introduction

Emergency hysterectomy is defined as caesarean hysterectomy or hysterectomy performed within 24 h of vaginal delivery, because of massive, life threatening haemorrhage or sepsis after prolonged labour. Peripartum hysterectomy usually represents the final recourse in the treatment of postpartum haemorrhage to save the life of the mother in dire life threatening circumstances. The decision to perform the surgery in young women especially with low parity poses a dilemma for the obstetrician but timely intervention may be the difference between life and death and greatly improve the outcome. With the increase in caesarean section rate the number of scarred uterus with prior uterine incision is increasing making the uterus more susceptible to many serious complications such as uncontrollable haemorrhage.

The first successful caesarean hysterectomy in which both mother and infant survived dates back to 1876, which was performed by Dr. Eduardo Porro from Pavia, Italy.^{1,2} His success encouraged other obstetricians to perform peripartum hysterectomy as a life saving measure in desperate situations.

The purpose of this study was to review the indications, risk factors and complications of peripartum hysterectomy over the last 9 years and thus bring awareness to the obstetrician to the possibility of hysterectomy in those cases where the risk factors are present.

Methods

This is a retrospective study of all cases of emergency peripartum hysterectomy performed at Patan Hospital from the year 1997 to 2005. Cases who underwent the procedure were identified from their discharge code number and operation theatre registrations. Their records were retrieved from the filing section and each case was scrutinized carefully. Information on age, parity, gestational age, mode of delivery, indication and type of hysterectomy, intra-operative and postoperative complication was extracted and recorded along with the total number of deliveries and caesarean sections.

Results

During the study period altogether 28 emergency obstetrical hysterectomies were performed with 24 total

Correspondence

E-mail: singhalka@hotmail.com

abdominal hysterectomies and 4 subtotal hysterectomies. The total number of deliveries in the study period was 38,203 out of which 29,099 (76.2%) had vaginal births and 9104 (23.8%) had caesarean sections. The rate of peripartum hysterectomy was 0.07% that is 1 in 1364 deliveries, among which 42.9% emergency obstetric hysterectomies were after vaginal deliveries and 57.1% followed caesarean sections. (Table 1)

Table 1: Time of hysterectomy

	n	%
Postpartum hysterectomy	12	42.9
Caesarean hysterectomy	16	57.1
Total	28	100

	n	%
Caesarean delivery	9104	23.8
Vaginal delivery	29099	76.2
Total	38,203	100

The average age of the women was 28.5 years ranging between 21 and 38 years. There were 4 primigravida, 13 second gravida, 6 third gravida, 4 fourth gravida and only one sixth gravida, with altogether 85% in the multigravida group.

The mean gestational age at the time of delivery was 37.5 weeks (range from 28 weeks to 41 weeks).

Four (14.3%) cases had previous caesarean delivery, and 9 (32 %) had previous curettage at least once and placenta praevia in 5 (17.8%) were the major risk factors identified. (Table 2)

Table 2: Risk factors for peripartum hysterectomy

Risk factors	n	%
Previous curettage	9	32
Placenta praevia	5	17.8
Previous caesarean section	4	14.3
Atony alone	2	7.1
Adherent placenta	1	3.6
Chorioamnionitis	1	3.6
Abruptio placenta	1	3.6
Twins	1	3.6
Retained placenta	1	3.6
Polyhydramnios	1	3.6
Induction of labor	1	3.6
Obstructed labor	1	3.6
Total	28	100

The main indication for emergency hysterectomy was uterine atony in 10 cases (35.8%). The risk factors identified for atony were induction of labour in 4, big babies in 4 and multigravida in 2 cases. The second common indication for hysterectomy was uterine rupture in 7 (25%) cases among which 4 had come with rupture due to prolong labour, 1 had rupture after oxytocin augmentation (she was fourth gravida with two full term delivery, one miscarriage), 1 had rupture after assisted breech delivery of intrauterine fetal death with previous caesarean section and 1 had rupture due to hyperstimulation of the uterus after intracervical prostaglandin induction. Adherent placenta, placenta praevia, broad ligament haematoma, unmanageable cervical tears were other indications. (Table 3)

Table 3: Indications of peripartum hysterectomy

Aetiology	N	%
Uterine atony with PPH	10	35.8
Uterine rupture	7	25
Placenta praevia	2	7.1
Adherent placenta	4	14.3
Unmanageable cervical tear	2	7.1
Broad ligament haematoma	2	7.1
Abruptio placentae	1	3.6
Total	28	100

There was one intra operative complication, in which bladder injury occurred. Postoperative morbidity occurred in 9 cases (32%). All were discharged with full recovery except for one who developed vesico-vaginal fistula (the indication for hysterectomy in this case was uterine and bladder rupture) and one repeatedly came in follow up with abdominal ascites. Only one (3.6%) maternal death occurred due to acute renal shutdown. One (3.6 %) relaparotomy was performed due to intraperitoneal hemorrhage. (Table 4)

Table 4: Maternal complications

Complications	N	%
Fever of unspecified origin	2	22.2
Wound infection	1	11.1
Fluid overload	1	11.1
Ascites	1	11.1
Peritonitis	1	11.1
Intraperitoneal Hemorrhage	1	11.1
Bladder injury	1	11.1
VVF	1	11.1
Total	9	100

The average estimated blood loss was 1600 ml ranging from 1000 to 2300ml. Blood transfusion was given in all the cases ranging from 1000 to 3000ml with an average of 1214ml. The average time from delivery to hysterectomy was 130 minutes ranging from one hour to five hours.

There were four stillbirths and the mean birth weight of the newborns was 2903gm ranging from 1000 to 4000gm.

The postoperative hospitalization period was from 5 to 24 days with the average of 11.2 days.

Discussion

Emergency peripartum hysterectomy is almost always performed in a life threatening condition and although it is fraught with complications it maybe the ultimate measure in preventing morbidity and mortality in some cases.

In this series the incidence of peripartum hysterectomy was .07% that is, 1 in 1364 deliveries. Intractable postpartum hemorrhage not responsive to other manoeuvres and surgical techniques was the indication for all the hysterectomies. In review article by Zelop³, the overall incidence was found to range from 1 in 303 to 1 in 5000 deliveries. Over the time, the incidence has been decreasing with Bakshi⁶ reporting 0.1 to 0.3%. In Norway⁴ only 11 cases of postpartum hysterectomy was performed over a span of 25 years, giving an incidence of 0.2 per 10000 deliveries, whereas Akar⁵ reported to be 1 in 3736 deliveries.

The age group where the hysterectomy was required showed variation from 21 years to 38 years in this series.

The majority of the cases that required emergency hysterectomy in our series were multigravida with only three cases being primigravida similar to Ezechi⁷ but contradicting Akar⁵ where it was found more common in primigravida group.

It is worth keeping in mind that the incidence of hysterectomy associated with vaginal delivery was lower than with caesarean section consistent with other studies.^{8,9} This is a significant observation in view of the rate of caesarean section on the rise in recent years.

Previous uterine intervention (caesarean section and curettage) was seen to be the major risk factor along with placenta praevia in this series. Placenta accreta was the most common indication to perform a peripartum hysterectomy reported by Kwee's.¹⁰ Francois¹¹ observed that multiple gestations have a higher occurrence of emergency peripartum

hysterectomy than singletons which we were unable to show due to only one case of twins pregnancy.

Uterine atony is still the leading cause of primary postpartum hysterectomy and the main indication of emergency peripartum hysterectomy in our series, which was also found by some studies, while others report uterine rupture as the leading cause.^{8,12} The main indications for hysterectomy were placenta accreta, uterine rupture and uterine atony reported by Akar⁵ with placenta accreta being the leading cause of emergency hysterectomy as observed by Kwee¹⁰.

Intraoperative complication rate has been reported to range from 10% to 36%, and postoperative complication rates as high as 65% in other studies whereas in this series it was much less, intraoperative complication 3.6% and postoperative complications 35.8%.⁶

Conclusions

In conclusion emergency peripartum hysterectomy is a life saving procedure which although is associated with substantial morbidity is necessary in case of severe haemorrhage not responding to any alternative methods. Timely decision and intervention may mean life and death to the patient and minimize morbidity.

The risk of performing emergency hysterectomy is increased after caesarean delivery compared with vaginal delivery and the leading indication for the procedure is postpartum haemorrhage from uterine atony.

References

1. Park R, Duff P. Role of cesarean hysterectomy in modern obstetric practice. *Clin Obstet Gynecol* 1980; 23: 601–20.
2. Plauche W. Peripartum hysterectomy. *Obstet Gynecol Clin North Am* 1988; 15: 783–95.
3. Zelop CM, Harlow BL, Frigoletto FD, Safon LE and Saltzman DH. Emergency peripartum hysterectomy. *Am. J. Obstet. Gynecol* 1993; 168: 1443–1448.
4. Engelsen I, Albechtsen S, Iversen O. Peripartum hysterectomy—incidence and maternal morbidity. *Acta Obstet Gynecol Scand* 2001; 80: 409–12.
5. Akar EM, Yilmaz SE, Yuksel B, Yilmaz Z. Emergency peripartum hysterectomy. *Eur J Obstet Gynecol Reprod Biol* 2005 Feb 1; 118(2): 258; author reply 258-9.
6. Bakshi S, Meyer B. Indications for and outcomes of emergency peripartum hysterectomy: A five year review. *J Reprod Med* 2000; 45: 733–7.

7. Echechi OC, Kalu BKE, Njokanma FO, Nworkoro CA and Okeke GCE. Emergency peripartum hysterectomy in a Nigerian hospital: a 20 year review. *J of Obstet and Gynecol* 2004 June 24; 4: 372-373.
8. Roopnarinesingh R., Fay L and Mckenna P. A 27 year review of obstetric hysterectomy. *J of Obstet and Gynecol* 2003 May 23; 3: 252-254.
9. Kacmar J, Bhimani L, Boyd M, Shah-Hosseini R and J.F. Route of Delivery as a Risk Factor for Emergent Peripartum Hysterectomy: A Case–Control Study. *Obstetrics & Gynecology* 2003; 102:141-145.
10. Kwee Anneke, Bots ML, Visser GHA, and Bruinse HW. Emergency peripartum hysterectomy: A prospective study in The Netherlands *European Journal of Obstetrics & Gynecology and Reproductive Biology* 2006; 124: 187-192.
11. Francois K, Ortiz J, Harris C, Foley MR, Elliott JP. Is peripartum hysterectomy more common in multiple gestations? *Obstet Gynecol* 2005 Jun; 105(6): 1369-72.
12. Fatu Forna, Annette M. Miles, Denise J. Jamieson. Emergency peripartum hysterectomy: A comparison of cesarean and postpartum hysterectomy. *Am J Obstet Gynecol* 2004; 190: 1440-4.