

Study of Assessment of Frequency, Indications and Complications of Peripartum Hysterectomy: An Institutional Based Study

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Abstract

Background: Emergency peripartum hysterectomy (EPH) is a major surgical venture invariably performed in the setting of life-threatening haemorrhage during or immediately after abdominal and vaginal deliveries. This study was conducted to assess frequency, indications and complications of peripartum hysterectomy. **Materials and Methods:** This study was conducted to assess frequency, indications and complications of peripartum hysterectomy. There were 100 pregnant women who gave birth. The subjects had been explained about the procedure and were asked to give consent. All the subjects gave consent and had been included in the study. The frequency of peripartum hysterectomy had been assessed along with its indications and complications. The mean age of the subjects was 28.3 years. Statistical analysis had been conducted using SPSS software. **Results:** In this study, the prevalence of peripartum hysterectomy among who gave childbirth was 41%. Placenta accrete was evident in 15 cases and was the most common indication for peripartum hysterectomy. Other indications were atonic postpartum haemorrhage, rupture uterus and cervical pregnancy seen in 13, 6 and 4 subjects, respectively. Post-abortum arteriovenous malformation was seen in 3 subjects. Urinary bladder injury was seen in 15 patients, adnexal bleeding was seen in 11 patients, retroperitoneal haematoma was seen in 10 patients. Blood transfusion was required in 12 patients. Coagulopathy was evident in 9 subjects, pulmonary oedema was seen in 10 cases, vaginal cuff cellulitis was seen in 5 cases and pneumonia was seen in 3 cases only. **Conclusion:** The frequency of peripartum hysterectomy in this study was 41%. The common indications for this procedure are placenta accrete, atonic postpartum haemorrhage, atonic postpartum haemorrhage, rupture uterus, cervical pregnancy and post-abortum arteriovenous malformation. The complications of this procedure were urinary bladder injury, adnexal bleeding, retroperitoneal haematoma, blood transfusion, coagulopathy, pulmonary oedema, vaginal cuff cellulitis and pneumonia.

Keywords: Peripartum Hysterectomy, Prevalence, Indications, Complications.

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Introduction

Emergency peripartum hysterectomy (EPH) is a major surgical venture invariably performed in the setting of life-threatening haemorrhage during or immediately after abdominal and vaginal deliveries.^[1-5] Despite advances in medical and surgical fields, post-partum haemorrhage continues to be the leading cause of maternal morbidity and mortality.

The risk factors for post-partum hemorrhage include coagulopathies, uterine atony, retained products of conception, precipitate or prolonged labor, fetal macrosomia or multiparity, maternal obesity and previous primary post-partum hemorrhage.^[6-10]

It is believed that the first successful removal of the uterus after a cesarean delivery was performed in Italy by Dr. Eduardo Porro in 1876.^[11] The procedure was carefully planned in advance, due to the high risk, and the mother and child both survived. Today, acute and planned

hysterectomies are performed during childbirth, mainly as a last resort, to stop or prevent massive, potentially fatal hemorrhages. In high-income countries with low maternal mortality rates, obstetric care can be improved by identifying severe acute maternal morbidities, where survival is a “near miss” event.^[12,13] This study was conducted to assess frequency, indications and complications of peripartum hysterectomy.

Subjects and Methods

This study was conducted to analyse frequency, indications and associated complications of peripartum hysterectomy. There were 100 pregnant women who gave birth. The subjects had been explained about the procedure and were asked to give consent. All the subjects gave consent and had been included in the study. The frequency of peripartum hysterectomy had been assessed along with its indications and complications. The mean age of the subjects was 28.3

years. Statistical analysis had been conducted using SPSS software.

Results

The prevalence of peripartum hysterectomy among who gave childbirth was 41%. Placenta accrete was evident in 15 cases and was the most common indication for peripartum hysterectomy. Other indications were atonic postpartum haemorrhage, rupture uterus and cervical pregnancy seen in

13,6 and 4 subjects, respectively. Post-abortal arteriovenous malformation was seen in 3 subjects.

Urinary bladder injury was seen in 15 patients, adnexal bleeding was seen in 11 patients, retroperitoneal haematoma was seen in 10 patients. Blood transfusion was required in 12 patients. Coagulopathy was evident in 9 subjects, pulmonary oedema was seen in 10 cases, vaginal cuff cellulitis was seen in 5 cases and pneumonia was seen in 3 cases only.

Table 1: Prevalence of peripartum hysterectomy among women who gave birth.

Prevalence	Number of cases	Percentage
Absent	59	59
Present	41	41
Total	100	100

Table 2: Indications of peripartum hysterectomy.

Indications	Number of cases	Percentage
Placenta accrete	15	36.5
Atonic postpartum haemorrhage	13	31.7
Rupture uterus	06	14.6
Cervical pregnancy	04	9.75
Post-abortal arteriovenous malformation	03	7.31
Total	41	100

Table 3: Complications of peripartum hysterectomy

Complications	Number of cases
Urinary bladder injury	15
Adnexal bleeding	11
Retroperitoneal haematoma	10
Blood transfusion	12
Coagulopathy	09
Pulmonary oedema	10
Vaginal cuff cellulitis	05
Pneumonia	03

Discussion

Postpartum hemorrhage (PPH) is a life-threatening condition. Various drugs and surgical techniques have been developed over time, especially to preserve the uterus. However, in some circumstances, an emergency peripartum hysterectomy has to be performed often as the last resort in saving a woman's life. It is thus an unequivocal marker of severe maternal morbidity and mortality.^[14,15]

A peripartum hysterectomy is often performed to avoid fatalities. More knowledge of the causes, management and complications of peripartum hysterectomies is needed to improve the quality of obstetric care, and thus maternal health. A peripartum hysterectomy is defined as the removal of the uterus within a specific time interval after delivering the baby, and it is mainly due to postpartum hemorrhage (PPH).^[16-18]

This study was conducted to analyse the frequency, indications and associated complications of peripartum hysterectomy.

In this study, the prevalence of peripartum hysterectomy among who gave childbirth was 41%. Placenta accrete was evident in 15 cases and was the most common indication for peripartum hysterectomy. Other indications were atonic postpartum haemorrhage, rupture uterus and cervical

pregnancy seen in 13,6 and 4 subjects, respectively. Post-abortal arteriovenous malformation was seen in 3 subjects. Urinary bladder injury was seen in 15 patients, adnexal bleeding was seen in 11 patients, retroperitoneal haematoma was seen in 10 patients. Blood transfusion was required in 12 patients. Coagulopathy was evident in 9 subjects, pulmonary oedema was seen in 10 cases, vaginal cuff cellulitis was seen in 5 cases and pneumonia was seen in 3 cases only. Bodelon C et al^[19] identified factors associated with peripartum hysterectomy performed within 30 days postpartum. This was a population-based case-control study using Washington State birth certificate registry (1987-2006) linked to the Comprehensive Hospital Abstract Reporting System (CHARS). Cases underwent hysterectomy within 30 days postpartum. Controls were frequency matched 4:1. Exposures included factors related to hemorrhage, delivery method, multiple gestations, and infection. Incidence rates of peripartum hysterectomy and maternal and neonatal morbidity/mortality were assessed. Adjusted odds ratios (aOR) by maternal age, parity, gestational age, year of birth, and mode of delivery and 95% confidence intervals (CI) were computed. There were 896 hysterectomies. Incidence rates ranged from 0.25 in 1987 to 0.82 per 1,000 deliveries in 2006 (χ^2 for trend, $p < 0.001$). Factors related to hemorrhage were strongly related to peripartum hysterectomy. Placenta previa

(192 cases vs. 23 controls; aOR=7.9, 95% CI: 4.1– 15.0), abruptio placenta (71 vs. 55; aOR=3.2, 95% CI: 1.8–5.8), and retained placenta (214 vs. 28; aOR=43.0, 95% CI: 19.0–97.7) increased the risk of hysterectomy, as did uterine atony, uterine rupture, and thrombocytopenia. Having multiple gestations did not. As compared with vaginal delivery, vaginal delivery after cesarean (27 cases vs. 105 controls; aOR=1.9, 95% CI: 1.2–3.0), primary cesarean (270 vs. 504; aOR=4.6, 95% CI: 3.5–6.0), and repeat cesarean (296 vs. 231; aOR=7.9, 95% CI: 5.8-10.7) increased the risk of peripartum hysterectomy. Among the 111 women who had hysterectomy on readmission (12.8% of cases), hemorrhage- and infection-related factors were still strongly associated with peripartum hysterectomy. Incidence rates of peripartum hysterectomy are increasing over time. The most important risk factor for peripartum hysterectomy is hemorrhage, most notably caused by uterine rupture, retained placenta, and atony of uterus. Machado LS et al^[20] reviewed the recent relevant articles in English literature on emergency peripartum hysterectomy. The incidence, indications, risk factors and outcome of emergency peripartum hysterectomy were reviewed. The incidence of emergency peripartum hysterectomy ranged from 0.24 to 8.7 per 1000 deliveries. Emergency peripartum hysterectomy was found to be more common following the cesarean section than vaginal deliveries. The predominant indication for emergency peripartum hysterectomy was abnormal placentation (placenta previa/accreta) which was noted in 45 to 73.3%, uterine atony in 20.6 to 43% and uterine rupture in 11.4 to 45.5 %. The risk factors included the previous cesarean section, scarred uterus, multiparity, older age group. The maternal morbidity ranged from 26.5 to 31.5% and the mortality from 0 to 12.5% with a mean of 4.8%. The decision to perform total or subtotal hysterectomy was influenced by the patient's condition. Emergency peripartum hysterectomy is a most demanding obstetric surgery performed in very trying circumstances of life-threatening hemorrhage. The indication for emergency peripartum hysterectomy in recent years has changed from traditional uterine atony to abnormal placentation. Antenatal anticipation of the risk factors, involvement of an experienced obstetrician at an early stage of management and a prompt hysterectomy after adequate resuscitation would go a long way in reducing morbidity and mortality.

Conclusion

The frequency of peripartum hysterectomy in this study was 41%. The common indications for this procedure are placenta accrete, atonic postpartum haemorrhage, atonic postpartum haemorrhage, rupture uterus, cervical pregnancy and post-abortual arteriovenous malformation.

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