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Original Article

CLINICAL OUTCOME IN EMERGENCY PERIPARTUM HYSTERECTOMY AT A TERTIARY CARE CENTRE

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ABSTRACT

Background: In modern obstetric practice, peripartum hysterectomy is a lifesaving procedure to control massive hemorrhage when medical treatment and conservative surgery fails. The reported incidence varies between 0.2 and 5.4 in 1000 deliveries.

Materials and methods: The present prospective study was carried out in Vijayanagar Institute of Medical Sciences (VIMS), a tertiary hospital and teaching institute at Bellary, Karnataka. Study was conducted for a period of one year from September 2014 to August 2015. Study source included all the patients delivering (vaginally and by cesarean section) at VIMS during the study period.

Results: During the study period of one year a total number of 9758 deliveries were conducted at the hospital out of which 5921 (60.7%) were vaginal deliveries and 3837 (39.3%) were cesarean deliveries. Emergency peripartum hysterectomy was performed in 13 cases. The incidence of peripartum hysterectomy was 1.3 /1000 deliveries. Most common indication for performing emergency peripartum hysterectomy was intractable obstetric hemorrhage due to atonicity, with an incidence of 53.84%. The most common risk factor was multiparity with an incidence of 69.23%.

Conclusion: Present study highlights the need for overall improvement in health care system, experienced surgeons to minimize the potential complications and use of proper guidelines and protocols to control obstetric hemorrhage. In the age of rising cesarean deliveries, here comes a responsibility and a challenge - to take into consideration of a woman's long-term reproductive outcomes.

Key words: peripartum hysterectomy, cesarean delivery, obstetric hemorrhage, atonicity, multiparity.

Introduction

Peripartum or obstetric hysterectomy is the removal of corpus uteri alone or with the cervix at the time of cesarean delivery or shortly after a vaginal delivery. The removal of uterus at cesarean section is referred to as cesarean hysterectomy while the removal after vaginal birth is called postpartum hysterectomy. It has been described as one of the most dramatic operations in modern obstetrics and therefore associated with significant maternal morbidity and mortality [1]. The mortality of peripartum hysterectomy is 25 times than that of hysterectomy performed outside pregnancy [2].

In modern obstetric practice, peripartum hysterectomy is a lifesaving procedure to control massive hemorrhage when medical treatment and conservative surgery have failed3. The reported incidence varies between 0.2 and 5.4 in 1000 deliveries. Majority of studies quote an incidence of 1 per 1000 deliveries or less but much variation is reported in literature4. Higher incidence is reported from developing countries due to higher prevalence of unbooked cases, lack of adequate blood products which limits the time available

for examining the effectiveness of other conservative procedures1. The most common indication is uterine hemorrhage but the underlying causes vary, and may be due to uterine atony, uterine rupture, abnormal placentation, leiomyomas, coagulopathy or lacerations of uterine vessel not treatable by conservative measures.
The purpose of the study was to observe the incidence, indications, risk factors involved and maternal outcome with emergency peripartum hysterectomy.

Materials and methods
The present prospective study was carried out in Vijayanagar Institute of Medical Sciences (VIMS), a tertiary hospital and teaching institute at Bellary, Karnataka. Study was conducted for a period of one year from September 2014 to August 2015. Study source included all the patients delivering (vaginally and by cesarean section) at VIMS during the study period. Maternal characteristics like age, parity, previous cesarean delivery, mode of delivery, indications for peripartum hysterectomy and its complications and outcome were studied.

Results
During the study period of one year a total number of 9758 deliveries were conducted at our hospital out of which 5921 (60.7%) were vaginal deliveries and 3837 (39.3%) were cesarean deliveries. Emergency peripartum hysterectomy was performed in 13 cases. The incidence of peripartum hysterectomy was 1.3 /1000 deliveries. Of the 13 cases 12 had cesarean hysterectomy and 1 woman had hysterectomy following vaginal delivery. (Table 1)

Table 1: Incidence of peripartum hysterectomy.

Total no of vaginal deliveries	5921
Total no of cesarean deliveries	3837
Total no of peripartum hysterectomies	13
Incidence of peripatum hysterectomies	0.13%

The mean maternal age was 23.30 +_ 2.52 years. (Range20-28 years). Amongst the 13 women who underwent peripartum hysterectomy 4 were nulliparous, 9 were multiparous out of which 4 were of parity three and above. Demographic characteristics of the patients are shown in table 2.

Table 2: Demographic characteristics of the patients

	Mean+_standard deviation	Minimum-maximum
Age (years)	23.30+_2.52	20-28
Gravida	2.38 +_1.44	1-5
Parity	1.31+_1.43	1-3
Gestational age (in weeks)	36.92+_3.69	36-41

Out of the 13 peripartum hysterectomies, 12 were following emergency cesareansection and one following vaginal delivery. Out of the 12 CS done, 46.15% cases were repeat CS (all of them being previous one LSCS), 3 cases (25%) were placenta previa, 2 cases were taken up for nonreassuring fetal status, one case of obstructed labour in 2nd stage and one case for cephalopelvic disproportion.
Most common indication for performing emergency peripartum hysterectomy was intractable obstetric hemorrhage due to atonicity, seen in 7 out of the 13 cases, an incidence of 53.84%. To avoid hysterectomy pharmacological agents and surgical procedures were tried to control hemorrhage. All patients received oxytocin and prostadine/misoprostol and erogometrine. B lynch sutures was performed 4 cases, uterine artery ligation done in 2 cases and internal iliac artery ligation done in one case.
Other common indications for which hysterectomy was performed included placenta previa (3 cases) of which 2 were placenta accreta. Rupture uterus was seen in 2 cases and one case was due to traumatic PPH/ colporrehxis following vaginal delivery. Table 3 presents the indications for emergency peripartum hysterectomy.

Table 3: indications for emergency peripartum hysterectomy

Indication	No of cases	Incidence in %
Atonic uterus	7	53.84
Placenta previa	3	23.07
Rupture uterus	2	15.38
Traumatic PPH	1	7.69

The most common risk factor for peripartum hysterectomy in our study was previous cesarean delivery with an incidence of 46.15%. Other risk factors included placenta previa with an incidence of 23.07%, operative delivery (1 case) – use of outlet forceps leading to colporrhexis. Table 4 shows risk factors predisposing to peripartum hysterectomy. Subtotal hysterectomy was done in 12 cases whereas in one case total hysterectomy was done due to placenta previa type IV.

Table 4: Risk factors for peripartum hysterectomy

Risk factors	No of cases out of total cases	Incidence in %
Previous LSCS	5/13	46.15
Placenta previa	3/13	23.08
Abruption	2/13	15.38
Operative delivery	1/13	7.69

Postoperatively all 13 patients received blood transfusion with pre-operative incidence of anemia in these patients being 61.53%. Febrile illness was the commonest maternal morbidity. ICU care was required in 5 cases, an average hospital stay was for 8-12 days. Other complications included lower respiratory tract infection (23.07%) and one case of wound infection (7.69%). There was one maternal mortality secondary to septicemia (7.69%) and the perinatal mortality rate was 36.76%.

Table 5: Maternal morbidity and mortality

Postoperative outcome	No of cases	INCIDENCE (%)
Febrile illness	6	46.15
RICU care	5	38.46
Lower respiratory infection	3	23.07
Mortality due to septicemia	1	7.69
Wound infection	1	7.69

Discussion:

Peripartum hysterectomy has undergone tremendous change in terms of indications and frequency of the procedure. It is the final step in the treatment of life-threatening obstetric hemorrhage that cannot be controlled by conventional methods. Caesarean delivery is the most important risk factor for peripartum hysterectomy. Those who undergo caesarean delivery are six times more likely to require peripartum hysterectomy than who undergo vaginal delivery [5,6]. Similar findings were observed in our study. The risk of peripartum hysterectomy increases with the number of prior cesarean deliveries.

The incidence of peripartum hysterectomy was 1.3/ 1000 deliveries in our study similar to the frequency reported in other Indian studies [7]. The reported incidence varies from0.24-5.09 per 1000 deliveries in literature[4]. Our incidence of 1.3/1000 is in agreement with recent studies.

Up to 54% of the patients were in the age group of 23-25 years. Maximum number ofpatients belonged to para 2 and above with patients of higher parity being at more risk and associated complications. Barclay in 1975 showed that 82.6% of patients undergoing cesarean hysterectomy were para2 and above [8]; our results run in conformity.

The most frequent indication for peripartum hysterectomy in the present study was uterine atony, followed by abnormal placentation and uterine rupture. There has been significant change in the indication of peripartum hysterectomy over time and different regions. Traditionally atonic uterus was the most common indication for hysterectomy. Recent studies have indicated that abnormal placentation is replacing uterine atony as the most common indication [9,10]. In 2012 Joana et al. in a 10-year review reported that 76.92% of hysterectomies were due to uterine atony followed by placental abnormalities and rupture [9]. Similar results have been reported in a study by Ozden et al [11]. Baskett reported that main indications for peripartum hysterectomy were abnormal placentation (50%) and atonic postpartum hemorrhage (32.8%) [12]. We can conclude that there is considerable variability in the indications worldwide and varies from region to region and with obstetric practice in each center.

Peripartum hysterectomy is associated with high complication rates mainly due to need for massive blood transfusions, coagulopathy, injuries to the urinary tract and sometimes with need for reexploration due to persistent bleeding and febrile morbidity [9]. All our patients needed blood transfusion with at least one packed cell considering that 69.53% of the patients had pre-operative anaemia. There were no urinary tract injuries associated in our study. Other complications included septicemia, wound infection as reported in other studies [13,14].

Subtotal hysterectomy was the commonly performed surgery in our study as was in other studies which may be due to the maternal condition requiring a speedy and a simpler procedure. A subtotal hysterectomy may control hemorrhage successfully in case of rupture or uterine atony. If there is no cervical involvement, a subtotal hysterectomy may be technically easier but may not reduce the complication rates [15]. In case of pathological placentation, particularly involving the cervix, a total hysterectomy is requiredto control the hemorrhage which is surgically more difficult and more likely to be associated with maternal morbidity if placental localization involves the bladder [16].

The maternal mortality in our study was 7.6% which is comparable to other Indianstudies [17,13] 9.7 and 9.3% respectively but very high compared to the developed countries [1]. High mortality may be due to the delay in arriving at the hospital as in most of the developing countries health care system is poorly developed, most of the patients were unbooked, received to hospital from peripheral referral centers.

Conclusion

Present study highlights the need for overall improvement in health care system such as identifying high risk pregnancies and timely referral from the peripheral centers, ambulance facilities, and availability of adequate blood products, need experienced surgeons to minimize the potential complications and use of proper guidelines and protocols to control obstetric hemorrhage.

Newer alternatives in surgical techniques such as balloon tamponade, arterial embolization, and pelvic devascularization have been developed to arrest hemorrhage and to avoid hysterectomy. The choice of measure will be influenced by the availability of expertise.

Uterine rupture cases will decline if close monitoring of labour is done along with judicious use of oxytocics. In the age of rising cesarean deliveries with increased frequency of morbidly adherent placenta come a responsibility and a challenge to take into consideration of women's long-term reproductive outcomes.

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