

## ORIGINAL RESEARCH

# Peripartum Hysterectomy - A Retrospective Study At A Tertiary Care Hospital

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## ABSTRACT

**Introduction:** To review the incidence, various indications, risk factors, rates of maternal morbidity and mortality as well as neonatal outcome associated with peripartum hysterectomy in a tertiary care hospital over 3 years.

**Material and Method:** This retrospective observational study was conducted in the department of obstetrics and gynecology at Cheluvamba hospital, a tertiary care hospital, allied with MMCRI from January 2011 to December 2013. All cases of emergency cesarean section done for the period of 3 years were reviewed. 26 cases of peripartum hysterectomy were isolated, antecedent causes, intrapartum complications and postpartum outcome was studied.

**Results:** A three year study yielded 26 cases of which majority were multigravida (16 cases=61.4%); were in the age group 21-25(14 cases=53.8%) and were referred cases (12cases=46.1%). Those delivered by cesarean section were 12 cases(46.1%). Most common indication for peripartum hysterectomy was atonic post-partum hemorrhage (14cases=53.8%); second major cause was uterine rupture (6cases=23.1%). There were 5 cases of traumatic post partum hemorrhage, 1 case of placenta increta and a rare case of uterine artery pseudo aneurysm presenting with secondary post partum hemorrhage. Uterotonics were tried in 53.8% of cases with bilateral uterine artery ligation done in 3 cases and B-Lynch sutures tried in 1 case. Subtotal hysterectomy was performed in 53.8% of cases. Operative complications involving bladder injury was seen in 4 cases and bowel injury in 1 case. Perinatal mortality was very high (11 cases=42.3%) with maternal mortality noted in 4 cases (15.3%).

**Conclusion:** Improving quality of health care with good antenatal checkup, early identification of high risk cases and prompt referral to tertiary center is key to lowering the incidence of peripartum hysterectomy and complications associated with it.

**Keywords:** Peripartum hysterectomy, atonic PPH

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## INTRODUCTION

Peripartum hysterectomy is the surgical removal of pregnant uterus alone or with the cervix during cesarean section (cesarean hysterectomy) or shortly following vaginal delivery (postpartum hysterectomy) It is one of the most challenging and life saving obstetric maneuver reserved for situations where obstetric hemorrhage fails to respond to conservative treatment. The incidence in India varies from 0.4-0.8 % and is amongst the leading causes contributing to maternal mortality<sup>1</sup>. The rise in peripartum hysterectomy in recent years despite advances in conservative techniques is due to increased incidence of placenta accreta following repeat cesarean sections. This study aims at identifying the incidence, risk factors, indications, outcome, mortality and complications associated with peripartum hysterectomy so that maternal mortality and operative complications associated with it can be reduced.

## MATERIALS AND METHODS

A retrospective descriptive case study was conducted at Cheluvamba hospital, a tertiary care center, allied with MMCRI; from 1<sup>st</sup> January 2011 to 31<sup>st</sup> December 2013. All patients (26) who underwent peripartum hysterectomy were isolated. Demographic data and indications for hysterectomy were analyzed. The results are presented in the form of number of cases and percentage from which the following results were drawn. Ethical approval was taken from institutional ethical committee and individual informed consent was taken from the patients before the start of the study.

## STATISTICAL ANALYSIS

Data was entered into epidata and analyzed using epi info. Discriptive statistics was used to generate results.

## RESULTS

There were 26 cases of peripartum hysterectomy amongst the 39,551 number of deliveries in the three year study period, giving an incidence of 0.065% percentage. The youngest age at peripartum hysterectomy in our study group was 19 years, of the three cases who underwent hysterectomy in view of atonic postpartum hemorrhage. Oldest was 35 years of age, for ruptured uterus. Mean age of hysterectomy being 23 years with maximum number between 21-25 yrs (14 cases or 53.8%) (Table-1)

With regards to parity, 21 cases were multiparous. The highest parity was G8P5L2 A2 with 34 weeks with intrauterine fetal demise who delivered by vaginal route and later developed atonic PPH. 46.1% of the cases were referred with 23.1% of unbooked cases, not having received any antenatal care (Table-2).

Subtotal hysterectomy was done in 53.8% of cases. It is preferred as it is technically easier, with shorter operating time, less blood loss and urological injury and lower morbidity. However it is associated with cervical stump bleeding and need for cervical cytology later. Total hysterectomy is preferred in cases of placental pathology. Average intraoperative blood loss was 1500-2000ml (42.3%). Blood loss over 2000 ml was seen in cases that ended up with maternal mortality (Table-3)

Amongst the 26 cases that underwent hysterectomy, in 12 cases or 46.1% of cases the mode of delivery was by emergency cesarean section & 7 cases had spontaneous deliveries and 7 cases were induced with prostaglandin gel (PGE2) (Table-4).

Amongst the causes, the most common cause in our study was atonic PPH (Table-5). There were 3 cases of placenta previa of which 2 had spontaneous expulsion followed by atonic postpartum hemorrhage and 1 was a case of placenta increta. In 14 cases, uterotonics were used as a first line management of uterine atony. Uterine artery ligation was done in 3 cases with B-Lynch sutures applied in 1 case. Foley bulb tamponading was tried in 6 cases (Table 6). All the cases were singleton pregnancies. Forceps were applied in 2 cases. Both were referred cases, having colporrhexis.

We had 1 case of placenta increta. The patient presented as G3P2L2 with 35 weeks with previous cesarean section with bleeding per vagina. Per op

findings showed - Central placenta previa extending along the anterior surface of scarred uterus. Placenta was removed in piecemeal. When bleeding persisted, peripartum hysterectomy was done.

In 1 rare case of uterine artery pseudo aneurysm, patient presented as P2L2 post partum day 20 with secondary post partum hemorrhage in shock. After stabilizing the patient, Doppler studies showed uterine artery pseudo aneurysm at the level of isthmus. Uterine artery embolisation was planned but unfortunately patient had severe hemorrhage and went into shock. A decision to do peripartum hysterectomy was taken.

Post operative complications and morbidity was high. Anemia was seen in 80.7% of cases, with shock seen in 53.8% of cases. 15.3% of cases had postpartum sepsis. 23.1% of cases went into disseminated intravascular coagulation (Table 7)

Average duration of hospital stay was 15-20 days with longest duration being 28 days. 53.8% of cases had a stay more than 10 days with long recovery period. 3 cases of re-laparotomy were seen. Bladder injury was seen in 4 cases with 1 case requiring ureteric stenting. Maternal mortality was seen in 4 cases with perinatal mortality in 11 cases (Table 7)

Age	No Of Cases	Percentage
21-25	14	53.8
26-30	10	38.4
31-35	2	7.7

**Table-1:** Age Incidence

Parity	No Of Cases	Percentage
Primi	10	38.4
G2	8	30.7
>G2	8	30.7

**Table-2:** Parity

Type	Number	Percentage
Total	12	46.1
Subtotal	14	53.9

**Table-3:** Type of Surgery

Type Of Delivery	Number	Percentage
Spontaneous	7	27
Induced	7	27
Lower Segment Cesarean Section	12	46

**Table-4:** Delivery Details

Cause	Number	Percentage
Severe Uterine Atony	14	53.8
Rupture Uterus	6	23.1
Placenta	1	3.8

Placenta Previa/Increta/Percreta		
Traumatic Post Partum Hemorrhage	5	19.2
Rare	1	3.8

**Table-5:** Cause

Failure of Salvage Procedure	Number	Percentage
Uterotonics	14	53.8
Foley Bulb Tamponade	6	23.03
Uterine Artery Ligation	3	11.5
B-Lynch	1	3.8
Cho	0	0
Internal Iliac Artery Ligation	0	0

**Table-6:** Salvage Procedures Attempted

Intraop Complication	Number	Percentage
Bladder Injury	4	15.4
Bowel Injury	1	3.8
Post Op Complication	Number	Percentage
Anemia	21	80.8
Sepsis	5	19.2
Shock	14	53.8
Disseminated Intravascular Coagulation	6	23.1
Relaparotomy	3	11.5
Duration Of Stay >10 Days	14	53.8
Outcome	Number	
Maternal Mortality	4	
Perinatal Mortality	11	

**Table-7:** Complications:

## DISCUSSION

The first documented hysterectomy on a patient at cesarean section was performed by Horatio Storer in 1869. Edwardo Porro described the procedure in 1876 using an instrument called a cintrat's constrictor to control hemorrhage.<sup>2</sup> Even today emergency hysterectomy remains a life saving procedure in case of severe hemorrhage. Cesarean section rate is on a rise worldwide, and hence there is concomitant rise of placenta previa and accreta.

In a study done by Mesleh et al<sup>3</sup> in 1998 and Kwee et al<sup>4</sup> in 2005, the incidence of peripartum hysterectomy was 0.031% comparable to our study with the incidence of 0.065%. The most common indication for Emergency peripartum hysterectomy in the study was ruptured uterus. However in our study, the most common indication remains atonic postpartum hemorrhage indicating probably the nonavailability, non-utilization of potent oxytocics or increased incidence of placenta previa as the likely cause.

Rupture uterus is a serious obstetric emergency with high mortality and morbidity. It is largely preventable

with early detection and proper timing of surgery. Previously scarred uterus is the most common cause; others are grandmultiparity, injudicious use of oxytocics, prolonged second stage, uterine anomaly, low socioeconomic status etc. Post operative complications involving bladder injury are most common with cases of ruptured uterus as seen in our study. They are also associated with significant post op morbidity like infection, paralytic ileus, shock, renal failure and disseminated intravascular coagulation. With availability of good uterotonics, conservative measures to arrest bleeding should be tried initially before considering emergency peripartum hysterectomy. These include uterotonics like oxytocin, methergine, carboprost and misoprostol. Surgical measures like stepwise devascularization of uterus with uterine or hypogastric artery ligation, hemostatic sutures like B-lynch, CHO, Pereira, Gunasheela's technique; ovarian artery ligation and finally internal iliac artery ligation. Conservative management is of particular importance in patients who are young, have parity and hemodynamically stable. However, the results with such techniques are not promising. A study done by Yamani Zamzami TY et al<sup>5</sup> show a success rate of 39.4% with such procedure. The choice between conservative management and emergency peripartum hysterectomy should be individualized.

In our study, the number of subtotal hysterectomy is almost the same as total hysterectomy. In a study done by Murta et al<sup>6</sup> there was no statistically significant differences between total and subtotal hysterectomy regarding operative time, need for transfusion and number of intraoperative and post operative complications, however, other authors have noted complaints of vaginal discharge, acyclical bleeding and need for cervical cytology.<sup>7</sup>

Ahmet yalinkaya et al<sup>8</sup> conducted a 16 year study on the outcomes of emergency peripartum hysterectomy in a medical hospital. They reported a maternal mortality of 13 out of 65 cases, 23 cases underwent relaparotomy and 11 cases of postoperative sepsis. Our study elicits similar picture with 4 maternal mortality and 3 cases of relaparotomy. However a very high rate of neonatal mortality of 42% was noted in our study.

Indications for peripartum hysterectomy has also evolved in response to availability of better antibiotics, blood banking techniques, multidisciplinary approach and availability of ventilator support.

## CONCLUSION

Emergency obstetric hysterectomy is no doubt a life saving procedure for managing life threatening obstetric hemorrhage and uterine rupture. Good

obstetric judgment should be applied in deciding cases for emergency hysterectomy as a last resort to saving the life of mother and the baby. The operation should be made rarer by good antenatal care, active management of labor, early recognition of complication and timely performance of cesarean section when indicated. Finally, every obstetrician should well be conversant with peripartum hysterectomy and its techniques.

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