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Original Research

Prevalence of Peripartum hysterectomy in tertiary care centre

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ABSTRACT:

Aim: The aim of the study was to evaluate the incidence, predisposing factors & associated complications and outcome of emergency peripartum hysterectomy.

Methods: This prospective observational study was carried out in the Department of Obstetrics and Gynecology. Age, parity, traumatic or atonic PPH, risk factors, complications were all studied in detail and analysed.

Results: 50 underwent emergency peripartum hysterectomy, yielding to an incidence of 0.12%. 14 (28%) patients underwent emergency peripartum hysterectomy following vaginal delivery, among whom 3 (6%)patients had instrumental delivery and 33(66%) following caesarean section. The most common indications out of the incidence was atonic PPH, noted in 24 patients (48%), following vaginal delivery were 9 (18%), following caesarean section were 15 (30%). Indication for rupture uterus were 24 (48%), 12 (24%) following rupture of an unscarred uterus. 12 (24%) following rupture of scarred uterus. Due to secondary post- partum haemorrhage were 6(12%). Acute inversion of uterus was 1(2%). Out of 50 patients, 16(32%) patients experienced intra-operative hypotension, 8(16%) developed febrile illness, 31(62%) required ICU care. The mean hospital stay of the patients <10days were 18 (36%), >10days were 26(52%) patients. None of the 50 patients required re-laparotomy, 19(38%) patients went into DIC, 5(10%) experienced bladder injury due to involvement of bladder along the rupture of uterus ,repair done simultaneously during hysterectomy, 3(6%) patient developed vesicovaginal fistula post-operatively. 6(12%) patients who underwent emergency peripartum hysterectomy died during post-operative period**.** Maternal mortality was 12% in the study.

Conclusions: Hysterectomy is a lifesaving procedure to control postpartum hemorrhage, but is associated with significant maternal morbidity and mortality. Uterine atony, uterine ruptures, also due to prior caesarean delivery, placenta previa were identified as risk factors.

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INTRODUCTION

Emergency obstetric hysterectomy is the removal of the entire uterus with the partial or complete removal of the cervix performed during puerperium performed for life threatening obstetric condition.[1,2] It includes both cesarean hysterectomies, done following caesarean delivery, and post partum hysterectomies following vaginal deliveries. A near miss event is defined as women who nearly died but survived a complication that occurred during pregnancy, childbirth, or within 42 days of termination of pregnancy. Emergency Peripartum Hysterectomy was first performed at the end of the 19 th century in order to prevent maternal deaths resulting from hemorrhage and sepsis after prolonged labour. The First successful operation was performed in 1876.[3,4]

Typically reserved for situations in which severe obstetric hemorrhage fails to respond to conservative treatment, peripartum hysterectomy is associated with severe blood loss, risk of transfusion, intraoperative complications, and significant postoperative morbidity. It is important to estimate national incidence rates and trends for peripartum hysterectomy to inform obstetric practice and to assess risks and complications of pregnancy. Hospital-based retrospective case-reviews in the United States

report incidence rates for peripartum hysterectomy ranging from 0.6 to 2.28 per 1,000 births.[5– 8] However, these studies are unable to provide reliable national incidence estimates because they were conducted in single institutions with small samples. Furthermore, their findings may be influenced by patient characteristics or practitioner practice patterns for hysterectomy at individual institutions. Several studies examined pregnancy-related factors associated with risk for peripartum hysterectomy. Generally, these studies report a greater than 10-fold higher incidence of peripartum hysterectomy among women who have previously delivered by cesarean section than among those who have not.[6–9] This finding deserves closer examination, given the increasing rate of cesarean deliveries in the United States, even among low-risk women.[10] However, few studies examined the effect of previous cesarean deliveries within the context of the current mode of delivery. Another reported risk factor for peripartum hysterectomy is multiple births,[5] the rate of which is also increasing in the United States.[11] It is important to note, however, that other studies were small and limited in the ability to examine risk factors for the procedure while adequately controlling for potential confounding factors.

Uterine atony, most commonly found in prolonged, augmented and/or obstructed labour, such uteruses respond poorly to oxytocic. The majority of these casesoccur at the time of caesarean section for dystocia or cephalopelvic disproportion. Uterine rupture within prior caesarean section scar, if haemorrhage cannot be controlled hysterectomy is necessary.[12] Traumatic rupture following instrumental delivery, obstructed labour, inversion of uterus, induced labour is also possible. Secondary post-partum haemorrhage secondary to retained products and sepsis may rarely require hysterectomy

MATERIAL AND METHODS

This prospective observational study was carried out in the Department of Obstetrics and Gynecology, after taking the approval of the protocol review committee and institutional ethics committee. After taking informed consent detailed history was taken from the patient or the relatives if the patient was not in good condition. Total 50 patients who were clinically diagnosed and operated on benign ovarian cysts were included into the study.

INCLUSION CRITERIA

Patients who suffered severe post-partum haemorrhage and did not respond to conservative management, leading to emergency peripartum hysterectomy.

Patients with ruptured uterus of both scared and unscared uterus which could not be repaired, leading to emergency peripartum hysterectomy.

EXCLUSION CRITERIA

Hysterectomies performed for gynaecological cause were excluded from the study.

Data abstracted included demographic data – age, parity, mode of delivery, prior caesarean sections, presence of placenta previa, presence of uterine rupture & uterine atony as a cause of PPH and traumatic PPH. The postsurgical complications, duration of hospital stay, maternal mortality & morbidity were recorded. Descriptive analyses were carried out to summarize relevant variables.

RESULTS

The estrogen level in hCG day (pmol/l) in long agonist between December 2020 to November 2021, there were 41500, deliveries. 50 underwent emergency peripartum hysterectomy, yielding to an incidence of 0.12%. 14 (28%) patients underwent emergency peripartum hysterectomy following vaginal delivery, among whom 3 (6%)patients had instrumental delivery and 33(66%) following caesarean section. Age distribution among the patients with underwent hysterectomy revealed that 3 patient was <20years of age (6%), 39 (78%) were between the age group of 21-30 and 8 (16%) were of age group 31-40. Parity distribution showed that 8 were primipara (16%), parity of 2 were 22 (44%) and parity of 3 were 16 (32%) and beyond parity 3 were 4 (8%). Table 1.

The table 2 shows the age-parity distribution and mode of delivery 32 patients in the study underwent caesarean sections, among them 12 patients were prior 1 LSCS (24%), 3 patients were prior 2 LSCS (6%). 11 (22%) patients had placenta previa, 1 (2%) patient presented with a combination of rupture uterus and placenta previa, underwent caesarean section, 1 (2%) patient presented with placenta previa and abruption placenta. The incidence of hysterectomy did not increase significantly in women with parity of 3 and beyond.

Table 1.demographic of patients

Emergency hysterectomy		
Age	N=50	%
<20	3	6%
21-30	39	78%
31-40	8	16%
Parity		
1	8	16%
2	22	44%
3	16	32%
>3	4	8%
Mode of delivery		
Vaginal	14	28%
Caesarean	33	66%
Instrumental	3	6%

The most common indications out of the incidence was atonic PPH, noted in 24 patients (48%), following vaginal delivery were 9 (18%), following caesarean section were 15 (30%). Indication for rupture uterus

were 24 (48%), 12 (24%) following rupture of an unscarred uterus. 12 (24%) following rupture of scarred uterus. Due to secondary post- partum haemorrhage were 6(12%). Acute inversion of uterus was 1(2%). table 3.

Table 2: Risk factors of emergency hysterectomy

Emergency hysterectomy		
Risk factor		
Caesarean section	32	%
Prior no LSCS	17	34%
Prior 1 LSCS	12	24%
Prior 2 LSCS	3	6%
Prior 3 LSCS	0	
Placenta previa		
Yes	11	22%
No	39	78%
Parity		
3	15	30%
>3	5	10%

Table 3: Indications for emergency peripartum hysterectomy

Emergency hysterectomy		
Indications		
Atonic uterus	24	48%
Rupture of scarred uterus	12	24%
Rupture of unscarred uterus (spontaneous rupture) a)primigravida b) multigravida	12 4 8	 24%
Secondary PPH	6	12%
Acute inversion of uterus	1	2%

Table 4 show that Out of 50 patients, 16(32%) patients experienced intra-operative hypotension, 8(16%) developed febrile illness, 31(62%) required ICU care. The mean hospital stay of the patients <10days were 18 (36%), >10days were 26(52%) patients. This table shows the associated maternal morbidity with peripartum hysterectomy. Although peripartum hysterectomy is a lifesaving procedure, it is associated with significant morbidity. Table 5 illustrates the complications patients' experienced following hysterectomy. None of the 50 patients required re-laparotomy, 19(38%) patients went into DIC, 5(10%) experienced bladder injury due to involvement of bladder along the rupture of uterus ,repair done simultaneously during hysterectomy, 3(6%) patient developed vesicovaginal fistula post-operatively. 6(12%) patients who underwent emergency peripartum hysterectomy died during post-operative period**.** Maternal mortality was 12% in the study. 8 (16%) patients underwent an associated procedure for control of haemorrhage -bilateral internal iliac artery ligation

Table 4: Observations of patients

Observations		%
Intraoperative hypotension	16	32%
Febrile illness	8	16%
ICU admission	31	62%
Mean hospital stay <10days >10days	 18 26	 36% 52%

Table 5: Complications noted in the study

Complications	Emergency hysterectomy
DIC	19 (38%)
Injury to the bladder	5(10%)
Death	6 (12%)
Vesicovaginal fistula	3(6%)

1 patient was second gravid with central placenta previa, underwent caesarean section for the same, also underwent subtotal hysterectomy due to uncontrollable bleeding from the placental bed, patient expired intra- operative due to irreversible shock. 1 patient delivered by operative vaginal delivery, developed atonic PPH, which did not respond to conservative management, underwent hysterectomy, died on the same post-operative day due to irreversible shock following massive blood loss. 4 patients expired post-operatively as a consequence of DIC

DISCUSSION

PPH along with sepsis and hypertensive disorders of pregnancy is a major cause of maternal mortality in India. Peripartum hysterectomy is a lifesaving surgery performed on a mother with intractable obstetric hemorrhage. In active management of third stage of labor, drugs such as misoprostol and uterine artery embolization among other measures have markedly reduced maternal deaths from PPH. However, describing a reduction in maternal mortality rate is just describing the tip of an iceberg. The WHO has thus emphasized on the concept of maternal near miss.[13] Any pregnant woman who undergoes peripartum hysterectomy thus could have potentially died without timely and proper management.

The incidence of peripartum hysterectomy is increasing in this era not because of improperly managed third stage of labor or obstructed labor but most likely because of increasing incidence of cesarean sections. Chances of repeat cesarean sections thus increase. This ultimately increases the incidence of placenta previa and accreta

Emergency peripartum hysterectomy is a lifesaving procedure of choice in cases of intractable hemorrhage and catastrophic rupture of uterus.[14] It is an unequivocal marker of severe acute maternal morbidity. It is associated with high index of maternal mortality and morbidity.

In developed countries, the reported incidence of emergency hysterectomy is below 0.1% of the total

normal deliveries performed, while in developing countries, the incidence rates are as high as 1-5/ 1000 of all the deliveries performed. The incidence in the present study is 1.4 per 1000 deliveries. The primary reason for this higher incidence is due to the fact that our hospital is a referral centre to most of the primary health care centres in surrounding rural areas. Majority of the patients are unbooked, and deliver outside the health facilities unsupervised or poorly supervised and are referred in a deteriorated state.

The main indications for peripartum hysterectomy in developed countries are uterine atony and abnormal placentation, where as in developing countries, it was rupture of uterus and atony of uterus.[15] The most common causes of EPH in our study are atonic uterus, rupture uterus of unscarred and scarred uterus. Uterine rupture remains one of the serious obstetric complications even in modern obstetricsn.[16] Lack of health information, illiteracy, poor antenatal care, poverty, home delivery by birth attendants, delay in referrals all contribute to uterine rupture. Injudicious use of oxytocin and trial of labour was the common cause, whereas prolonged obstructed labour was the second common cause. In our study 50 underwent emergency peripartum hysterectomy, yielding to an incidence of 0.12%.

In our analysis, the incidence of peripartum hysterectomy is 1 /1000 deliveries, which is near to incidence of 0.2 and 5.4 in 1000 deliveries.[17,18] In our study, the most common indications of peripartum hysterectomy were atonic uterus (48%), and rupture uterus (48%).[18]

CONCLUSIONS

Hysterectomy is a lifesaving procedure to control postpartum hemorrhage, but is associated with significant maternal morbidity and mortality. Uterine atony, uterine ruptures, also due to prior caesarean delivery, placenta previa were identified as risk factors.

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