

# Emergency Peripartum Hysterectomy And Its Outcome In Ilorin, Nigeria

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## Citation

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## Abstract

Emergency peripartum hysterectomy is a challenging but life-saving procedure associated with maternal morbidity and mortality. **OBJECTIVES:** To estimate the incidence, determine the factors associated with peripartum hysterectomy and determine the outcomes of the procedure **METHODS:** We analyzed retrospectively cases of emergency peripartum hysterectomy performed at University of Ilorin Teaching Hospital over a 15 year period. **RESULTS:** There were 38 emergency peripartum hysterectomies performed over this period. The incidence was 155 per 100,000 deliveries. The maternal mean age was  $31.03 \pm 6.54$  years, the mean parity was  $3.80 \pm 1.88$ , range 0-7, while 20 (52.6%) had previous CS scar. While 19 (54.3%) had an abdominal delivery (out of whom 16 had ruptured uterus). The mean pre-operative Packed Cell Volume (PCV) was  $16.7\% (\pm 5.8)$ . All the patients had blood transfusions, the mean number of units transfused was  $3.1 (\pm 0.8)$  units. The mean estimated blood loss (EBL) at surgery was  $1.6 (\pm 1)$  liters, the mean duration of surgery was  $136 (\pm 36)$  minutes and subtotal hysterectomy was the procedure carried out in 35 (92.6%) of cases. Maternal deaths occurred in 10 (26.3%). The maternal morbidities recorded included 19 cases (50%) of post partum fever/sepsis. The perinatal mortality was 63.9%. The pre operative PCV and the estimated blood loss at surgery were significant factors that influenced whether the parturient woman survives or not. **CONCLUSION:** Peripartum hysterectomy is a life saving procedure whose incidence and the high morbidity and mortality associated with it in developing countries must be reduced. The high morbidity and mortality are largely due to the poor preoperative state rather than the surgery itself.

## INTRODUCTION

Peripartum hysterectomy is a surgical procedure performed generally in the setting of life-threatening situations usually as a last resort to save the life of a parturient woman. It is one of the most serious complications of modern obstetrics and is usually undertaken to control intractable obstetric hemorrhage. In modern obstetrics practice, the overall incidence of peripartum hysterectomy all over the world is estimated to be 0.05 to 1% of deliveries<sup>1</sup>. However this incidence varies in different parts of the world depending upon modern obstetric services standard, awareness of the antenatal care and effectiveness of family planning activities in any particular community<sup>1</sup>, hence higher rates are abound in low resource countries<sup>2</sup>.

Although a rare event, it has been described as one of the riskiest and most dramatic operations in modern obstetrics<sup>3</sup>. This procedure is therefore associated with increased morbidity and mortality. It is an equivocal marker of severe acute maternal morbidity (SAMM or near-miss events). It is associated with severe blood loss, risk of transfusion, intra

operative complications and significant post-operative morbidity<sup>1</sup> and these complications may significantly affect the maternal outcome after a peripartum hysterectomy.

## OBJECTIVES

To estimate the incidence of peripartum hysterectomy in Ilorin

To determine the factors associated with peripartum hysterectomy

To determine the outcome of the procedure.

## METHODS

This is a retrospective study of women who had peripartum hysterectomy at UITH over a fifteen (15) year period from 1992-2006.

Data extracted from their medical records in the labour ward and the medical record department included demographic data, indications for the procedure, maternal and fetal outcomes, duration of surgery, cadre of surgeons,

blood transfusion and postoperative complications.

Data was compared between those patients that survived and those that died following the procedure.

The results obtained were analyzed with the SPSS 15.0. Relevant descriptive statistics like frequency and percentage were computed for presentation of categorical variables while quantitative variables were presented by mean and standard deviation. Statistical significance was taken as  $P < 0.05$ .

## RESULTS

There were a total of 38 peripartum hysterectomies done over the 15 year period, giving an incidence of 155 per 100,000 deliveries. The maternal mean age was  $31.03 \pm 6.54$  years, age group 30-39 was highest (52.6%). Their mean parity was  $3.80 \pm 1.88$ , range 0-7; grandmultiparous women (para  $\geq 5$ ) formed 43%, 10% were para 0 (primiparas). Most of the patients had low educational status as 27 (76.3%) had primary education or less. Most of these women, 29 (75.4%) had not received antenatal care at UITH while 20 (52.6%) had previous CS scar. While 19 (54.3%) had an abdominal delivery (out of whom 16 had ruptured uterus), 16 (45.7%) had vaginal deliveries.

The mean pre-operative Packed Cell Volume (PCV) was 16.7% ( $\pm 5.8$ , range 2-28). Out of the 38 cases of peripartum hysterectomy, 26 (68.4%) had a postoperative PCV of 20% or less. All the patients had blood transfusion, most (92.1%) given intra-operatively. The mean number of units transfused was 3.1 units ( $\pm 0.8$ ; range 2-6). The mean estimated blood loss (EBL) at surgery was  $1.6\text{liters} \pm 1$ ; (range: 0.5-4). The mean duration of surgery was  $136 \text{ minutes} \pm 36$ ; (range: 75-240). The operation was performed by senior cadre of physicians, where senior registrars performed 23 (60.5%) while the consultant performed 15 (39.5%) of the procedure. Subtotal hysterectomy was the procedure carried out in 35 (92.6%) of the patients while 3 (7.4%) had total abdominal hysterectomy.

Maternal and fetal outcomes were reported where maternal deaths occurred in 10 (26.3%) while 28 (73.7%) survived following the procedure. The maternal morbidities recorded included 19 cases (50%) of post partum fever/sepsis, 8 (21.1%) cases of wound infection, 7 (18.4%) cases of anaemia and 1 (2.6%) case of bladder injury. The fetal outcome showed that 23 (63.9) babies of mothers who underwent the procedure survived while 13 (36.1%) died. The mean fetal weight was  $3.2\text{kg} \pm 0.4$  (range 2-4kg)

Table 1 showed comparison of some of the factors that may contribute significantly to maternal outcomes. It showed that the pre operative PCV and the estimated blood loss at surgery were significant factors that could influence whether that woman survives or not.

## Figure 1

Table 1: Comparison of factors between the women that survived and those that died.

Variable	Alive	Dead	P-value
Mean age (yrs)	$31.0 \pm 6.54$	$34.2 \pm 5.87$	0.1
Mean parity	$3.32 \pm 1.80$	$4.60 \pm 1.9$	0.08
Preop PCV (%)	$18.8 \pm 4.86$	$11 \pm 4.3$	<0.0001 (significant)
Postop PCV (%)	$26.6 \pm 3.51$	$24.9 \pm 2.47$	0.18
EBL (Liters)	$1.13 \pm 0.71$	$2.95 \pm 0.37$	<0.0001 (significant)
Duration of surgery (mins)	$136 \pm 40.4$	$136 \pm 23.9$	1.0
Cadre of Surgeon	Snr Reg: 15 Consultant: 13	Snr Reg: 8 Consultant: 2	0.14
Fetal outcome	Alive: 16; Dead: 10	Alive: 7; dead: 3	0.4
Mode of delivery	Vaginal: 14; abdominal: 11	Vaginal: 2; abdominal: 8	0.6

## DISCUSSION

The incidence of peripartum hysterectomy in this study was 1.55/1000. This result is consistent with recent reports. The incidence varies in literature from 0.6/1000 in the USA<sup>4</sup>, 1.4/1000 in Thailand<sup>5</sup> to 5.09/1000 in Turkey<sup>6</sup>. These figures however varies even within a country like in Turkey, while Zeteroglu et al reported an incidence of 5.09/1000 from Eastern Turkey, while Kayabasoglu et al reported an incidence of 0.37/1000 from the middle region of the country<sup>7</sup>. This has been attributed to the geographical differences in that country. In Nigeria, the regional differences also showed up in the previous studies, where Gbadebo et al reported an incidence of 1.83/1000 from Zaria, North western part of the country<sup>2</sup>, Ezechi et al reported 0.33/1000 from Lagos<sup>8</sup> and Umezurike et al reported 5.4/1000 from south east Nigeria<sup>3</sup>. In this case, the variation may be due to the differences in the region and the type of health facility the report comes from. A private hospital as in the case of the Lagos study may have a lower incidence because patronage to these centers is by the affluent and the educated in that community. In the North, Gbadebo et al proposed that in that society because emphasis is placed towards a large family and menstrual function is of paramount importance, peripartum hysterectomy is not resorted to unless it becomes inevitable<sup>2</sup>.

The risk factors associated with peripartum hysterectomy in this study like increasing parity, previous C/S, unbooked status were as reported by studies in both developed and developing countries<sup>2,4,9,10</sup>. However, in this study, CS is not a significant risk factor in peripartum hysterectomy, but in other studies CS delivery was a significant risk factor<sup>4,5</sup>. This finding may be due to the fact that women in this environment have a great aversion to surgical deliveries and the preference to try vaginal delivery, in a society with poorly developed emergency obstetric care services where majority of the pregnant women are not supervised in pregnancy, labour and delivery. In this study, 92% of the women had subtotal hysterectomy. This high rate of subtotal hysterectomy is consistent with that from other reports from Nigeria<sup>2,3,8</sup>, and other countries<sup>1,6,11</sup>. It is however lower than 36% reported by Kayabasoglu et al<sup>7</sup> and 21% reported by Zelop et al<sup>9</sup>. Other associated factors worth mentioning include low educational status, >75% had not received ANC at UITH, not being uncommon even amongst primiparas.

Postoperative fever was the commonest morbidity that occurred in about half of the patients. This is higher than 36.9% reported by Ezechi et al<sup>8</sup>, 39% reported by Kayabasoglu et al<sup>7</sup> and 34% by Kastner et al<sup>11</sup>. Indeed the range of febrile morbidity after peripartum hysterectomy is 21–40%<sup>7</sup>. Other morbidities also reported in this study include anemia which was 18%, and this is lower than from a previous study in Nigeria<sup>8</sup>. This may be due to improved blood transfusion services in our center where every pregnant woman is expected to donate 1 unit of blood at booking<sup>13</sup>. Wound infection was morbidity in 21% of the women and this is similar to that in the study from Lagos<sup>8</sup>. Kayabasoglu reported 3% of wound dehiscence<sup>7</sup>. Bladder injury is one of the common intraoperative complications and varies between 13–18%<sup>7</sup>. However, in this study was found in only 1 (2.6%). The mean number of hospital stay was 13 days  $\pm$  7 which is in agreement with a study from India<sup>12</sup>, but more than 6.8 days reported from the United States<sup>11</sup>. In this study, the procedure was performed by the most senior doctors in the department, the senior residents and the consultants. This may be due to the fact that as explained above, this procedure is carried out as a last resort.

There were 10 (26.3%) maternal deaths. The maternal mortality following peripartum hysterectomy varies in Nigeria. While the report by Umezurike et al of 23% is consistent with our report<sup>3</sup>, Ezechi et al reported 13%<sup>8</sup> which is lower and Gbadebo et al reported 59%<sup>2</sup> which is higher than our finding. Studies from the developed countries

reported low mortality rate, Zelop et al reported no mortality<sup>9</sup> while Knight reported 1% mortality<sup>10</sup>. Studies from Pakistan reported mortality rate of 14.28%<sup>1</sup>, Thailand reported 1.75%<sup>5</sup>, 26% was reported from India<sup>12</sup> and 4% from Turkey<sup>7</sup>. The high maternal mortality in this study and other studies from Nigeria is a reflection of the poor level of obstetric care in the country and the rest of the developing world where intensive care facilities and safe blood transfusion are either inadequate or nonexistent. The clinical factors that were significantly associated with maternal mortality in this study were the preoperative packed cell volume and the blood loss at surgery. The overall mean preoperative PCV in this study was 16% while it was 11% among those women that died. This may give an idea of the preoperative blood loss and hence the severity of preoperative clinical state of the patient. It may also suggest that in this environment the delays that fraught maternity care and services increase the chances of a woman bleeding for a longer time leading to higher mortality rates. We also reported a high perinatal mortality rate of 36.1%. This study showed that the duration of surgery was not an important factor ( $p=1.0$ ) in determining the outcome of this procedure. So also the cadre of the surgeon was not a significant factor ( $p=0.14$ ) determining the outcome possibly because they are all senior residents and consultant obstetricians with similar experience. The fetal outcome was also not significantly different ( $p=0.4$ ) between those that survive and those that died. This may be explained by the fact that peripartum hysterectomy usually results from an intractable post partum hemorrhage after the delivery of the child. Even though the mode of delivery is a risk factor for peripartum hysterectomy<sup>2,4,9,10</sup>, it is not a significant factor ( $p=0.6$ ) in determining the perinatal outcome in this study. This high perinatal mortality is consistent with that from other developing nations<sup>1,2,3,12</sup>. In the UK, it was reported as 2%<sup>10</sup>.

## CONCLUSION

Emergency peripartum hysterectomy is a life-saving procedure that is associated with high maternal morbidity and mortality. In view of the high incidence peripartum hysterectomy and its associated high maternal mortality in developing countries, the governments in developing countries must have the political will to give due recognition to maternal health issues by provision and improvement in maternal care service, availability of blood transfusion services, ensuring physical and financial accessibility to health care facilities and eradication of illiteracy. This study further shows the importance of adequately resuscitating

those patients that must have bled substantially before surgery and must devise ways to reduce intraoperative blood loss in order to reduce the maternal mortality related to peripartum hysterectomy.

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