

Emergency peripartum hysterectomy in Nnewi, Nigeria: A 10-year review

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Abstract

Background: Emergency peripartum hysterectomy has remained a challenging and very life saving surgical procedure in obstetrics. Its indications are emerging.

Aims: This was to determine the incidence, indications, and outcomes of emergency peripartum hysterectomy at a tertiary hospital in Nnewi, south-east Nigeria.

Materials and Methods: A retrospective study of the case files of patients requiring an emergency peripartum hysterectomy between January 2000 and December 2009 was conducted. Emergency peripartum hysterectomy was defined as one performed for hemorrhage unresponsive to other treatment within 24 hours of delivery. The findings were analyzed using Epi info version 3.5.1.

Results: During the 10-year period, there were 6,137 deliveries and 38 cases of emergency peripartum hysterectomies, giving an incidence of 6.2 per 1000 deliveries. Of the 38 hysterectomies, only 29 (76.3%) case files were available for analysis. The mean age of the patients was 28.1 ± 5.4 years and 22 (75.9%) patients were unbooked. There were four primigravidae (13.8%) while 25 (86.2%) were parous. The main indications for hysterectomy were placenta praevia 14 (48.3%) and uterine rupture 10 (34.5%). Subtotal hysterectomy was performed in majority (72.4%) of cases. The commonest postoperative morbidities were postoperative fever (37.9%), postoperative anemia (24.1%), and wound infection (20.7%). The maternal case fatality rate was 31.0%, while the perinatal mortality was 44.8%. The mean duration of hospital stay was 9.8 ± 2.4 days.

Conclusion: The incidence of emergency peripartum hysterectomy was high and majority of patients were unbooked. Placenta praevia has emerged as its primary indication. Booking for antenatal care, anticipation, prompt resuscitation, and early surgical intervention by a skilled surgeon are crucial.

Key words: Peripartum hysterectomy, placenta praevia, primigravida, subtotal hysterectomy, unbooked

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Introduction

Emergency peripartum hysterectomy is an uncommon obstetrics procedure which is usually performed as a life saving measures in cases of intractable obstetric hemorrhage.^[1] It was first proposed in 1869 but with no desirable results.^[2] However, seven years later, the first caesarean subtotal hysterectomy was carried out successfully, with the result that both the mother and baby survived.^[3]

The incidence of emergency postpartum hysterectomy and caesarean hysterectomy varies in different countries from 1 in 1420 deliveries in Australia^[4] to 1 in 348 deliveries in Nigeria.^[5] Recently, an incidence of 5.4 per 1000 deliveries was reported in south-east Nigeria.^[6] In the past, the most common indications for emergency peripartum hysterectomy were uterine atony and uterine rupture.^[7,8] However, recent studies suggest that abnormal placental adherence and

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placenta praevia are the major indications for peripartum hysterectomy.^[9,10] This is attributed mainly to the rise in caesarean section observed over the past two decades.^[9,10] Thus, a systematic review of cases of emergency peripartum hysterectomy revealed that women at highest risk of emergency hysterectomy are those who are multiparous, and had a caesarean delivery in either a previous or the present pregnancy, or had abnormal placentation.^[11]

Peripartum hysterectomy is associated with severe blood loss, risk of transfusion, intraoperative complications, and significant postoperative morbidity and mortality.^[10-12] The surgery is related to significant maternal mortality and morbidity; therefore a highly experienced surgeon must be always involved. The high incidence of morbidity and mortality has been reported in developing countries.^[13,14] It is therefore important that obstetricians identify patients at risk so as to anticipate the procedure and complications, as early intervention and proper management facilitate optimal outcome.

Very few reports have been published from the developing countries where this operation is performed more frequently, often with inadequate facilities, thereby resulting in considerable morbidity and mortality. Also, available studies^[5,6,13] from different regions of Nigeria have reported different frequencies, indications, and maternal outcomes associated with peripartum hysterectomy.

The aim of this study was to determine the incidence, indications, and outcomes of emergency peripartum hysterectomy performed in Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, south- east Nigeria.

Materials and Methods

This was a retrospective analysis of all cases of emergency peripartum hysterectomy performed at Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, South east Nigeria between January 2000 and December 2009. All cases of emergency peripartum hysterectomy were identified from the labor ward registers, operating room record books, and intensive care unit registers. Their case files were retrieved from the medical record department of the hospital. Emergency peripartum hysterectomy was defined as a hysterectomy performed for hemorrhage unresponsive to other treatment within 24 hours of a delivery.

Maternal characteristics such as age, parity, booking status, gestational age at delivery, previous caesarean delivery, and mode of delivery were recorded. The indication for surgery, type of hysterectomy, need for blood transfusion, postoperative complications, and postoperative hospitalization days were also obtained. The total number of vaginal and caesarean deliveries for the period was also

determined. Permission to conduct this study was sought for and obtained from the Nnamdi Azikiwe University Teaching Hospital Ethical Committee. All data gathered were entered and analyzed using Epi info version 3.5.1.

Results

During the 10-year study period, 6137 deliveries occurred in the hospital and 38 cases of emergency peripartum hysterectomy were performed giving an incidence of 1:161 deliveries (6.2/1,000 deliveries). Of the 38 emergency hysterectomies, only 29 (73.3%) case files were available for analysis.

The mean age of the patients was 28.1 ± 5.4 years (range 23–39 years). The mean gestational age at delivery was 37.5 ± 3.2 weeks (range 31–42 weeks). Twenty-two (75.9%) patients were unbooked and only seven (24.1%) were booked. All the hysterectomies were undertaken for uncontrollable postpartum hemorrhage: 16 (55.2%) followed caesarean section, three (10.3%), and 10 (34.5%) were following vaginal delivery and ruptured uterus, respectively. There were four primigravidae (13.8%), while 25 (86.2%) were parous. The modal parity was 1 (range 1--9).

As shown in Table 1, the main indications for hysterectomy were placenta praevia 14 (48.3%) and uterine rupture, 10 (34.5%). Of the 10 patients that had uterine rupture, 7 (70.0%) had previous caesarean section scar while 3 (30.0%) patients had it following cervical ripening and induction of labour with misoprostol and oxytocin infusion. All the primigravidae that had hysterectomy were due to placenta praevia. Peripartum hysterectomy was performed in all the patients that found that vaginal delivery was a result of uterine atony.

Subtotal hysterectomy was performed in 21 cases (72.4%) and total abdominal hysterectomy was performed in 8 cases (27.6%). All the hysterectomies were either performed by an obstetrics senior registrar or consultant obstetrician.

The postoperative morbidities recorded in these patients included postoperative fever (37.9%), postoperative anemia (24.1%), wound infection (20.7%), disseminated intravascular coagulopathy (10.3%), and urinary tract infection (6.9%). Blood was transfused in 28 (96.6%) patients, while only one (3.4%) patient did not receive blood transfusion.

Table 1: The indications for peripartum hysterectomy

Indication	Frequency	Percentage (%)
Placenta praevia	14	48.3
Uterine rupture	10	34.5
Morbidly adherent placenta	3	10.3
Uterine atony	2	6.9

There were 9 (31.0%) maternal deaths, while the perinatal mortality was 44.8%. The causes of maternal deaths were irreversible hypovolemic shock with disseminated intravascular coagulopathy, 6 (66.7%), thromboembolism, 2 (22.2%), and acute renal failure, 1 (11.1%). Seven (77.8%) deaths occurred within 12 hours of hysterectomy, while two (22.2%) died after 5 days of hysterectomy. The deaths were in patients with ruptured uterus and placenta praevia. The mean duration of hospital stay for the 20 surviving women was 9.8 ± 2.4 days (range 7–19 days).

Discussion

The incidence of emergency peripartum hysterectomy in this study was 6.2 per 1000 deliveries which compares favorably with those quoted from Nigeria sub-region.^[6,14] This was much higher than previous reports in Nigeria by Ogunniyi and Esen^[15] and Ozumba and Mbagwu.^[13] The difference may be due to fewer deliveries taking place in the hospital compared with the greater number of hospital deliveries in our era. However, much lower incidence rates have been reported from developed countries.^[10,16-18]

The age of women that had emergency peripartum hysterectomy varied in different reports^[13,15] While Rabiou *et al.*^[14] and Ezechi *et al.*^[19] reported an average age of above 30 years, in our series more than 75% of patients were aged less than 30 years with a mean of 28.1 years. This could be a reflection of the difference in the mean age of the obstetric population at the different study centers.

In this study, although the majority (>85%) were parous women, four patients (13.8%) were primigravidae. This finding was in agreement with studies by Elechi *et al.*^[19] and Clark *et al.*^[8] This could mean that primigravidae are not immune to peripartum hysterectomy and it should not be underestimated in this group of women.

In previous studies^[13,15] in Nigeria, uterine rupture was the leading indication for emergency peripartum hysterectomy; our finding has revealed otherwise. In our series, placenta praevia was the most common indication. This agrees favorably with other recent studies in Nigeria on emergency peripartum hysterectomy.^[6,14,19] Emerging trend toward placenta praevia and abnormal placental adherence as the major indications for peripartum hysterectomy has been reported.^[9,10] This could be attributed mainly to the increasing rate of caesarean section observed over the past two decades.^[9,10]

Grandmultiparity, prolonged labor and induction of labor with oxytocin are all considered risk factors for uterine atony. In this study, uterine atony occurred in 6.9% of cases requiring hysterectomy. Advances in nonsurgical

modalities for the treatment of uterine atony, such as Prostaglandins, intramuscular carboprost and rectal misoprostol introduced in the past 10 years appear to have lowered the rate of peripartum hysterectomy and maternal death due to postpartum hemorrhage.^[20] Manual compression, intramyometrial oxytocics, uterine and hypogastric artery ligation, and the insertion of the B-Lynch suture are all ancillary procedures that could be performed to control hemorrhage before embarking on hysterectomy.^[20]

This study has also revealed that subtotal hysterectomy (72.4%) was performed more frequently than total abdominal hysterectomy (TAH). Comparable incidences have been quoted in recent reports in Nigeria and beyond.^[10,14,21] If the patient's condition is stable, a TAH can be done to avoid further complications arising from the cervical stump especially in the case of placenta praevia. However, regular cytology must be performed if the cervix is retained. With the availability of cytological screening, there has been a dramatic decrease in the incidence of cervical stump cancer, which at the present time is reported as 0.1–0.15%.^[10] Subtotal hysterectomy (STH) is a much faster and technically safer procedure for desperately ill patients and those who may have massive adhesions over the lower uterine segment involving the urinary bladder. Oftentimes, the patients might have been in advanced labor before embarking at surgery leading up to hysterectomy. As such, these patients may have achieved full cervical dilatation and so subtotal hysterectomy may eventually turn out to be total hysterectomy.

Although emergency peripartum hysterectomy is life saving, the complications associated with it should not be underemphasized. The case fatality rate of 31.0% and perinatal mortality rate of 44.8% in our report are testimony to this. However, the other complications reported in this study were similar to others.^[8,13,15,19] The timing of the maternal deaths was also noteworthy. It can either occur within 24 hours or after 5 days of the surgery. This may require further study. Also, the maternal mortality observed in this study could not be due to hysterectomy itself, but delay in deciding to do the procedure. This was understandable since the modal parity was one. Perinatal mortality too could be related to underlying morbidity.

In conclusion, the incidence of emergency peripartum hysterectomy was high in our center and majority of patients were unbooked. Placenta praevia has emerged as its primary indication which is comparable to the changing trends worldwide. It is associated with severe maternal morbidities and mortality. Booking for antenatal care, anticipation, prompt resuscitation, and early surgical intervention by a skilled surgeon will reduce this trend.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the contents and writing of the paper.

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