Emergency Peripartum Hysterectomy in Bowen University Teaching Hospital, Ogbomoso: A 10-Year Retrospective Review

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ABSTRACT

Background: Introduction: Emergency peripartum hysterectomy is a life-saving surgical procedure, the procedure is usually performed when all conservative measures have failed to achieve haemostasis during life threatening obstetric haemorrhage. **Objective:** This was to review emergency peripartum hysterectomy performed in Bowen University Teaching Hospital (BUTH), Ogbomoso, South- West, Nigeria between 1st January, 2014 and 31st December, 2023. **Methods:** A retrospective review of cases of emergency peripartum hysterectomy between January, 2014 and December, 2023. **Result:** During the 10- year study period, 6,734 deliveries occurred in the hospital and 42 cases of emergency peripartum hysterectomy were performed giving a prevalence of cases as 0.6% or 6 per 1000 deliveries. The mean age of the studied patients was 35 ± 3.856 years with (28.9%) of the patients being within 26-30 years of age. Majority (71.1%) were multiparous with the modal parity of 3. Majority (63.2%) of the patients were unbooked and fourteen (36.8%) were booked. The leading indication for hysterectomy was uterine rupture 21 (55.3%), 9.4% had maternal death, 54.8% of the patients had stillbirth and 5.3% had early neonatal death. **Conclusion:** The risk factors associated with EPH should be identified during the antenatal period and pregnant women in high-risk group should be delivered by skilled birth attendants. There is need to enlighten women in our communities on the benefits of antenatal care services and hospital delivery as well as the dangers of delivering under unskilled supervision.

Keywords: Uterine rupture, caesarean section, emergency peripartum hysterectomy, maternal mortality

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Introduction

Uterine rupture is one of the causes of maternal morbidity and mortality often times warrant hysterectomy to prevent maternal death. Hysterectomy often is fraught with danger and regular audit is necessary to assist in the reduction of these dangers.[1]

Emergency peripartum hysterectomy (EPH) has been described as the most dramatic operation in modern obstetric practice and a marker of severe maternal morbidity and near miss mortality.[2] The procedure is usually performed when all conservative measures have failed to achieve haemostasis during life threatening obstetric haemorrhage.[3]

The decision to perform an emergency hysterectomy on a young woman especially one with low parity poses a dilemma for the obstetrician particularly in our society where large family size is the norm and the premium placed on child bearing is very high.[4] However, timely decision for this surgical intervention may make the difference between life and death for the mother and greatly improve outcome.[5]

In the developed world, the increase in the incidence of obstetric hysterectomy has been attributed to the increasing caesarean section rates, the concomitant rise in the incidence of placenta praevia and

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morbidly adherent placenta, and the increase in multiple pregnancy rates associated with assisted reproductive technology.[3] On the other hand, poverty, poor transportation facilities, erroneous cultural and religious beliefs, high incidence of unbooked pregnancies and poorly supervised deliveries as well as inadequate distribution of available health facilities have all made their contributions to the higher incidence of obstetric hysterectomy in the developing countries.[3]

Although emergency peripartum hysterectomy is usually performed to save the life of the mother, it can be associated with maternal mortality and also morbidity due to uncontrollable haemorrhage, delay in intervention, risks from blood transfusions, infection and disseminated intravascular coagulation particularly in the developing countries.[3] The incidence of emergency postpartum hysterectomy and caesarean hysterectomy varies in different countries and even among different regions within the same country. Recently in Lagos incidence of 0.37% was reported,[6] in a multicentre review in South west, Nigeria, rate of 2.6 per thousand deliveries was reported,[7] while incidence of 5.4 per 1000 deliveries was reported in South-east, Nigeria,[8] while in Uyo rate of 0.2% or 1 in 439 deliveries was reported.[5] In Australia, an incidence of 1 in 1420 deliveries was reported.[9]

The relatively high incidence of EPH in our environment and other developing countries may not be unconnected with the inadequate obstetric services prevalent in these areas and the large numbers of unbooked emergencies and antenatal clinic defaulters. Several studies from developing countries including Nigeria have shown poor maternal and perinatal outcome in women who fail to obtain antenatal care and those who default and are only brought to hospital when obstetric complications occur.[10-12]

In the past, the most common indications for emergency peripartum hysterectomy were uterine atony and uterine rupture.[13,14] However, recent studies suggest that abnormal placental adherence and placenta praevia are the major indications for peripartum hysterectomy.[15,16] This is attributed mainly to the rise in caesarean section observed over the past two decades.[15,16] 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.[17]

Peripartum hysterectomy is associated with severe blood loss, risk of transfusion, intraoperative complications, and significant postoperative morbidity and mortality.[16, 18,19] 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.[6, 20] 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.[8, 20] from different regions of Nigeria have reported different frequencies, indications, and maternal outcomes associated with peripartum hysterectomy.

Aim

To determine the incidence, indications and outcomes of emergency peripatum hysterectomy in Bowen University Teaching Hospital (BUTH), Ogbomoso, south- west, Nigeria between 1st January, 2014 and 31st December,2023.

Methods

The study was carried out in Bowen University Teaching Hospital, Ogbomoso. Ogbomoso is a city in Oyo State, southwestern Nigeria.

This involved retrospective review of all cases of emergency peripartum hysterectomy performed at Bowen University Teaching Hospital (BUTH), Ogbomoso, south- west, Nigeria between January 2014 and December 2023.

Emergency peripartum hysterectomy is defined as a hysterectomy performed for hemorrhage unresponsive to other treatment within 24 hours of a delivery.

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.

Instrument of Data Collection

With the aid of research proforma 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, maternal and neonatal postoperative complications were obtained. The total number of vaginal and caesarean deliveries for the period was determined.

All data obtained were entered into a standard proforma and analyzed using IBM SPSS statistical software. The ethical approval for the review was obtained from the Bowen University Teaching Hospital Ethical Review Committee to gain access to patients' data.

Results

During the 10- year study period, 6,734 deliveries occurred in the hospital and 42 cases of emergency peripartum hysterectomy were performed giving an incidence of case as 0.6% or 6 per 1000 deliveries. However, only 38 case files (90.5%) were able to be retrieved from the medical record.

Table 1: Sociodemographic Characteristics

VARRIABLES	FREQUENCY (n = 38)	PERCENTAGE (%)
Age in years		
15-20	0	0.0
21-25	2	5.3
26-30	11	28.9
31-35	7	18.4
36-40	10	26.3
>40	8	21.1
Tribe		
Yoruba	36	94.7
Igbo	1	2.6
Hausa	1	2.6
Education		
No formal education	0	0.0
Primary	5	13.2
Secondary	17	44.7
Tertiary	16	42.1
Occupation		
Unemployed	1	2.6
Artisan	4	10.5
Trader	18	47.4
Civil servant	2	5.3
Professional	13	34.2
Religion		
Christian	29	76.3
Muslim	9	23.7

Table I shows the socio demographic characteristics of 38 women who had emergency peripartum hysterectomy in this study. The mean age of the study patients was 35 ± 3.856 years with majority (28.9%) of the patients being within 26-30 years of age. Majority (94.7%) of the cases were of the Yoruba ethnicity and 44.7% had secondary level of education. Majority of the women were traders (47.4%). More than two-third (76.3%) of the population were Christians.

Table 2: Obstetrics characteristics and other variables.

VARRIABLES	FREQUENCY (n = 38)	PERCENTAGE (%)
Parity		
1	7	18.4
2-4	27	71.1
≥5	4	10.5
Booking		
Unbooked	24	63.2
Booked	14	36.8
Previous Uterine Surgery		
Caesarean section	13	34.2
Myomectomy	2	5.3
None	23	60.5
Mode of Delivery		
Vaginal	21	55.3
Caesarean section	17	44.7
Source of Referral		
TBA	3	13
PHC	2	8
Hospital Facility	18	75
Home	1	4
Type of Hysterectomy		
Subtotal	25	65.8
Total	13	34.2
Blood Transfusion		
Yes	29	76.3
No	9	23.7
Amount of blood transfused		
1-2 unit(s)	11	37.9
3-4 units	15	51.7
>=5 units	3	10.3

As shown in table II, majority (71.1%) were multiparous with the modal parity of 3. Majority (63.2%) of the patients were unbooked and 14 (36.8%) were booked. Most (60.5%) of the patients had no previous uterine surgery, 13 (34.2%) had caesarean section and two (5.3%) had myomectomy. Twenty one (55.3%) patients delivered via vaginal delivery, 16 (42.1%) delivered via caesarean section. Above half (65.8%) of the patients had a subtotal hysterectomy done while 34.2% had a total hysterectomy. Majority (76.3%) of the patients had blood transfusion perioperatively and more than half (51.3%) received 3-4 pints of blood in the table II.

Majority (76.0%) of the unbooked patients were referred from another hospital facility, 12% were referred from traditional birth attendant maternity homes, 8% were referred from primary health care centres, and 4% was referred from home.

Table 3: Indications for Hysterectomy

INDICATIONS	FREQUENCY (n = 38)	PERCENTAGE (%)
Ruptured uterus	21	55.3
Morbidly adherent placenta	11	28.9
Uterine atony	3	7.9
Placenta previa	3	7.9

As shown in Table III, the main indications for hysterectomy were uterine rupture 21 (55.3%) and morbidly adherent placenta 11 (28.9%), uterine atony accounted for 7.9% of the indication for the said procedure.

Figure I below shows the perioperative maternal complications recorded. Majority (32.8%) of the patients had perioperative shock, 29.7% were admitted to the intensive care unit (ICU), 9.4% had maternal death, while 15.6% did not have any perioperative complication.

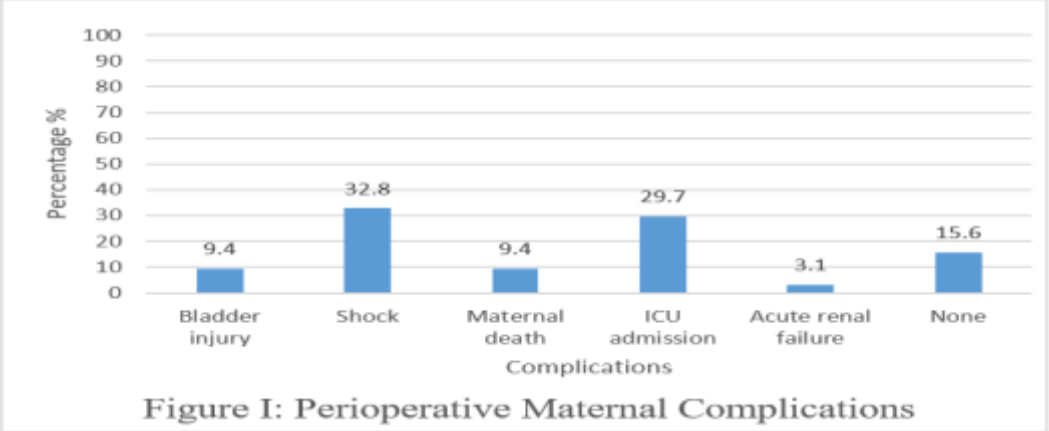

Figure I: Perioperative Maternal Complications

From figure II below, about 40% of the patients had neonates with no complication. However, 54.8% of the patients had stillbirth and 5.3% had early neonatal death.

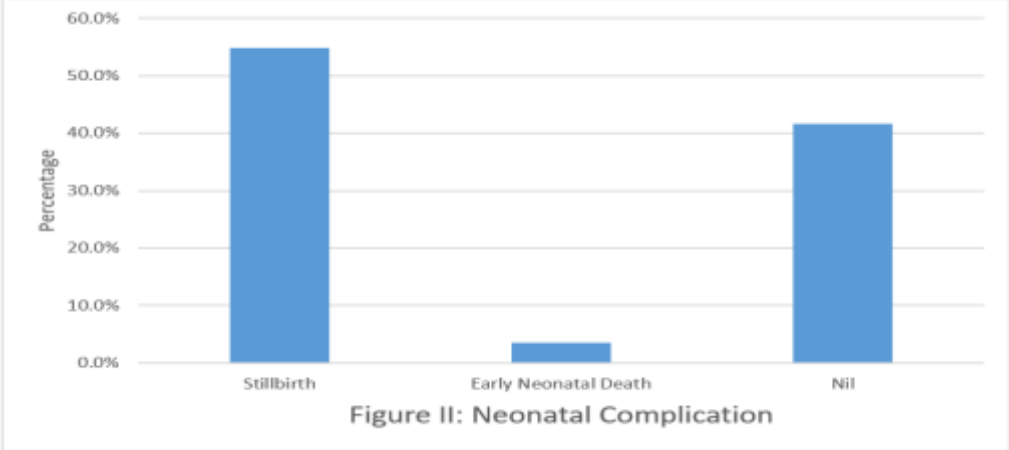

Figure II: Neonatal Complication

Discussion

During the period of 10-year review, the prevalence rate of emergency peripartum hysterectomy (EPH) was 6 per 1000 deliveries comparably similar to the rate reported in Nnewi[21] with prevalence of 6.2 per 1000 deliveries higher than the reported rate of 3.78/1000 deliveries in Lagos[6] by Rabiu et al and rate of 0.2% or 1 in 439 deliveries in Uyo was reported.[5] The difference may be due to fewer deliveries taking place in the hospital compared with the greater number of hospital deliveries this period. The EPH rate is much higher than those reported from the developed countries of America and Europe where the incidence of EPH is approximately 1 in 2000 deliveries.[22]

The age of women that had EPH varied in different reports 20,23 in our review almost 30% of the patients were aged 26-30 years and 26.3% aged 36-40 years. While Rabiu et al6 and Ezechi et al,[1] reported an average age of above 30 years, this could be a reflection of the difference in the mean age of the obstetric population at the different study centers. In this review a significant proportion of the patients were in the peak of their reproductive career considering possibility of delayed marriage as a result of pursuance of educational career among the patients with about 42% had tertiary education. Sadly, this goes to highlight the adverse reproductive health effects removal of the uterus will have on

these patients particularly in an environment like ours where failure of menstruation is perceived by women to be tantamount to loss of their self- image and the premium placed on childbearing is very high. The uterus is an organ highly treasured and hysterectomy is not a widely accepted operation,[24] hence loss of reproductive potential at a relatively early age can result in very devastating consequences including marital disharmony, divorce and even psychological disorders.[25]

Majority of the patients in this series were unbooked which accounted for 63.2%, twice the proportion of the booked patients, similar trend has been reported in the past.[21,26] The high incidence of EPH among the unbooked in this environment and other parts of the country may not be unconnected with the poor health seeking behavior of the people, inadequate obstetric services prevalence, dangerous proliferation of traditional birth attendant activities and the large number antenatal clinic defaulters among those that registered their pregnancies at the competent health facilities. Most of the patients in this review were multiparous with modal parity of 3 however a case was reported among the primigravidae in this review, this finding gives credence to the view of Obiechina et al that the primigravidae are not immuned to peripartum hysterectomy and it should not be underestimated in this group of women.[21]

Like in previous studies in Nigeria,[4,6] uterine rupture was the leading indication for EPH in this review accounted for 55.3%, the distant second leading indication is morbidly adherent placenta. Previous reviews have reported similar trends this is indisputably due to injudicious use of oxytocin, prolonged obstructed labour due to unskilled supervision of labour and delivery by the traditional birth attendants and the poor acceptability of antenatal care services in the study environment. Contrary to this finding, several reviews in recent time have reported morbidly adherent placenta as the most common indication for EPH however in this review morbidly adherent placenta was the second leading indication. Emerging trend toward placenta praevia and abnormal placental adherence as the major indications for EPH has been reported.[15,16]

This could be attributed mainly to the increasing rate of caesarean section observed over the past two decades,[15,16] of which more than third of the patients in this review have had before emergency peripartum hysterectomy and the multiparity status of most of the patients in this review which is a significant risk factor of abnormal placentation.

This review showed that subtotal hysterectomy (65.8%) was performed more frequently than total abdominal hysterectomy. Comparable incidences have been quoted in recent reports in Nigeria and beyond.[6,16,27] 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%.[16] Subtotal hysterectomy is a much faster and technically safer procedure for desperately ill patients and for those who may have massive adhesions over the lower uterine segment involving the urinary bladder due to previous pelvic surgeries. Oftentimes, the patients might have been in advanced labor before undergoing surgery leading up to hysterectomy. As such, these patients may have attained full cervical dilatation and so subtotal hysterectomy may eventually turn out to be total hysterectomy.

Although emergency peripartum hysterectomy is a life-saving surgical procedure, the complications associated with it should not be overlooked. EPH is associated with high complication rates, mainly due to the need for massive blood transfusions, coagulopathy, and injury of the urinary tract, and it is also associated with the need for reexploration because of persistent bleeding and febrile morbidity.[13,28] More than three quarter (76.3%) of the patients in this review received blood transfusions and >60% of them had over two units of blood. Bladder injury was found in 9.4% of the patients which might have occurred as a result of scarring and secondary adhesion of the vesicouterine space following previous cesarean section and myomectomy. The maternal mortality rate of (9.4%) in this study may have resulted largely from moribund cases that presented late to hospital, thus leaving no time for maternal salvage. This mortality is however lower than the 59.1%, 20.0% and 19.3% that were obtained in Zaria,[4] Calabar ,[11] and Lagos.[6] The reason for this disparity might be from the smaller number of delivery in the centre during the period of review and more importantly, it is probably that the policy

of aggressive resuscitation that was adopted in our hospital during the period of this study and the prompt recourse to hysterectomy could have resulted in the difference. Notwithstanding, when compared to what obtains in the developed climes where several series of peripartum hysterectomies are reported without any maternal deaths,[29] our figures are rather high. The perinatal mortality rate of 58.4% reported in this review is comparable with report of 64.3% from Uyo by Abasiattai et al,[24] the reason for this high perinatal death is not far-fetched, the most common indication for EPH in this review was uterine rupture which most time associated with the extrusion of the fetuses into the maternal abdominal cavity with devastating effects on the fetuses before presentation in the hospital.

In conclusion, the risk factors associated with EPH should be identified during the antenatal period and pregnant women in high risk group should be delivered by skilled birth attendants. There is need to enlighten women in our communities on the benefits of antenatal care services and hospital delivery as well as the dangers of delivering under unskilled supervision. Moreso, following standard protocol of action, measures that can contribute to reduce the high maternal morbidity and mortality associated to EPH. Also, cesarean delivery should be performed only when exclusively necessary, in appropriate clinical settings and by experienced surgeons when such risk factors are identified.

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Conflict Of Interest

There is no conflict of interest of any kind.

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