

## Obstetric Hysterectomy As A Surgical Intervention in the Management of Obstetric Haemorrhage At the University of Port Harcourt Teaching Hospital, Nigeria.

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### Abstract

**Objectives:** To determine the incidence, indications, maternal and perinatal outcome of obstetric hysterectomy.

**Materials and Methods:** A retrospective study of 80 women who had obstetric hysterectomy at the Obstetric unit of the University of Port Harcourt Teaching Hospital, (UPTH) Nigeria, between January 1, 2007 and December 31, 2011 was conducted. Data was obtained from the theatre records, labour ward register and case notes of patients and entered into a proforma. Epi Info Version 6.04d was used for data analysis.

**Results:** The prevalence of obstetric hysterectomy during the period under review was 5.3/1000 births. The most common indication was uterine rupture (57.1%), followed by haemorrhage due to uterine atony (25.7%). The mean age of the patients was  $28.1 \pm 1.78$  years, and it was commoner in the Para 1-2 group (40%). Majority (94%) of the patients were transfused and the average unit of blood transfused was 5. The crude morbidity rate was 66.3% with anaemia occurring in 40% of the women. There were 26 maternal deaths, giving a maternal mortality ratio of 325/100,000 deliveries. Twenty-four (92.2%) maternal deaths were unbooked while 2 (7.8%) were booked ( $p < 0.05$ ). Half (50%) of the women died from primary post-partum haemorrhage. The overall perinatal mortality rate was 575/1000 births.

**Conclusion:** Uterine rupture and postpartum haemorrhage due to uterine atony were the most common indications for obstetric hysterectomy. Maternal death was significantly higher among the unbooked. Effective antenatal care and availability of skilled attendants at all deliveries will reduce the incidence, morbidity and mortality from obstetric hysterectomy.

**Keywords:** Obstetric Hysterectomy, Maternal outcome, Perinatal outcome, Unbooked, Port Harcourt.

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### I. Introduction

Obstetric or peripartum hysterectomy is the surgical removal of the corpus uteri with or without the cervix at the time of a caesarean section, or shortly after a delivery. It is a challenging but life-saving obstetric procedure. The removal of the uterus at caesarean section is referred to as caesarean hysterectomy while the removal after vaginal birth is called postpartum hysterectomy.<sup>[1,2]</sup> The procedure is usually reserved for situations where conservative measures fail to control haemorrhage. Obstetric hysterectomy remains one of the obstetric catastrophes. It is associated with increased maternal mortality, considerable morbidity, and it brings an abrupt and usually unwelcome end to a woman's reproductive potential.<sup>[3]</sup>

Previously, the most common indication for Emergency obstetric hysterectomy (EOH) was uterine atony and uterine rupture.<sup>[4]</sup> However, recent reports show that abnormal placental adherence and placenta praevia are the major indications for EOH and is probably due to the increased caesarean delivery rate observed over the past two decades.<sup>[5]</sup> The high incidence of associated morbidity and mortality is reported from developing countries and factors responsible for this are poverty, poor transportation facilities, erroneous cultural and religious beliefs, high incidence of unbooked pregnancies and poorly supervised deliveries.<sup>[6]</sup> Although EOH 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.<sup>[6]</sup>

The incidence of obstetric hysterectomy varies from 2 to 6 per 1000 births in developing countries compared to 0.2 to 2.7 per 1000 births from developed countries. In Nigeria, the incidence of obstetric hysterectomy ranges from 1.8 to 5.4 per 1000 births.<sup>[7-9]</sup> In Pakistan, an incidence of 5.6 per 1000 births, India 2.6 per 1000 births and in United States of America (USA), 1.2 to 2.7 per 1000 births.<sup>[7,8]</sup> A lower incidence

was reported in European countries like Norway (0.2 per 1000 births), in Ireland and Netherlands (0.3 per 1000 births) and 1.39 per 1000 births in Australia.<sup>[10,11]</sup>

Risk factors for obstetric hysterectomy include previous caesarean delivery, vaginal birth after caesarean section (VBAC), placenta praevia and grand multiparity.<sup>[1,12]</sup> Owing to the rising caesarean section rate world-wide and the concomitant rise in placenta praevia and placenta accreta, the incidence of obstetric hysterectomy is rising in many countries.<sup>[1,11,13]</sup> It has also been reported that multiple pregnancy has a six fold increased risk of emergency peripartum hysterectomy. Other reported risk factors include co-existing uterine fibroid in pregnancy, polyhydramnios, retained placenta, previous endometrial curettage and abruptio placentae.<sup>[1,12-14]</sup> The aim of this study was therefore to evaluate the indications, maternal and perinatal outcome of obstetric hysterectomy in University of Port Harcourt Teaching Hospital.

## **II. Materials And Methods**

### **2.1 Study site**

This study was carried out at the Obstetric unit of the University of Port Harcourt Teaching Hospital. An average of 2,800 deliveries are conducted annually. It has the highest delivery rate among all the health facilities in Rivers State. The unit has a total of 135 beds, with 30 beds in the antenatal ward, 40 beds in the postnatal ward, 40 beds in the unbooked ward, 13 beds in the first stage room, 4 beds in second stage room, and 8 beds in private/semi-private rooms. There are five units and each unit has four consultant obstetricians, five specialist senior registrars and two registrars with many experienced nurses and midwives. It serves both urban and rural population within and outside the state.

### **2.2 Methods**

This was a retrospective study of 80 patients who had emergency obstetric hysterectomy at the University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt over a 5-year period (January 1, 2007 – December 31, 2011). Ethical clearance was obtained from the ethical review board of the hospital. The data was retrieved from the theatre records, delivery register and case notes over the period under review and entered into a proforma created for this purpose. Information obtained included age, parity, booking status, mode of delivery, indication for surgery, history of previous caesarean section, amount of blood loss and complications encountered. The proforma for each patient was checked for completion before it was entered into a spreadsheet and analysed.

### **2.3 Statistical Analysis**

Epi Info Ver 6.04d was used for data analysis. The results are represented in simple percentages, Pie charts and frequency tables. P-values <0.05 were considered statistically significant.

## **III. Results**

There were 80 cases of obstetric hysterectomy out of 15,195 deliveries over the period under review, giving an incidence of 5.3/1000 births. The majority of the women, 48 (60.0%) were aged between 20-29 years, with only 5 (6.3%) of the women aged 40 years and above. The mean age was  $28.1 \pm 1.78$  years. Out of the 80 women who had EOH, 56 (70.0%) were unbooked and 30 (37.5%) had undergone previous caesarean section. Fifty-nine (73.7%) were multiparous while 21 (26.3%) were nulliparous. Most of the women, 46 (57.5%) had secondary education, 24 (30.0%) had tertiary education with only 10 (12.5%) having primary education (Table 1). Figure 1 showed that the major indication for obstetric hysterectomy was uterine rupture (57.1%), either following prolonged obstructed labour, injudicious use of oxytocin or some traditional practices like abdominal massage or fundal pressure. This was followed by primary post-partum haemorrhage from uterine atony (25.7%). All the cases of obstetric hysterectomy were done as emergencies as either total abdominal hysterectomy 31 (38.8%) or sub-total abdominal hysterectomy 49 (61.2%) depending on the indication.

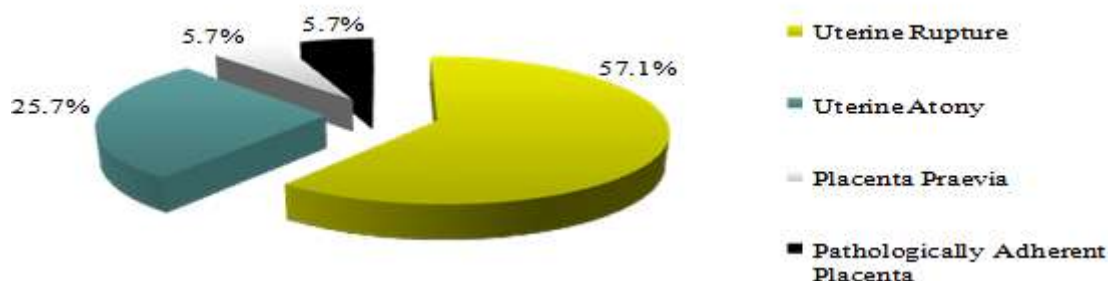
Table 2 showed the maternal outcome. The crude morbidity rate was 53 (66.3%), with anaemia 32 (40.0%) being the commonest post-operative complication, followed by sepsis 14 (17.5%). Twenty-seven (33.7%) of the women did not have any complication. There were 26 maternal deaths, giving a maternal mortality ratio of 325/100,000 deliveries. Almost all (24) maternal deaths occurred in unbooked patients and this was statistically significant. The causes of maternal deaths are shown in figure 2, with primary post-partum haemorrhage accounting for about half (50%), this was followed by sepsis (38.5%) and anaesthetic complications (11.5%).

The median estimated blood loss was 2200mls and ranged from 600-5000mls. Of the 80 women, 75 (94%) had blood transfusion. The average units of blood transfused were 5 units (range 2-18 units).

Table 3 showed the perinatal outcome. There were 51 perinatal deaths, 37 (72.5%) were intrauterine fetal death (IUFD) while 14 (27.5%) were fresh stillbirths, giving a perinatal mortality rate of 575/1000 births.

**Table 1: Maternal characteristics**

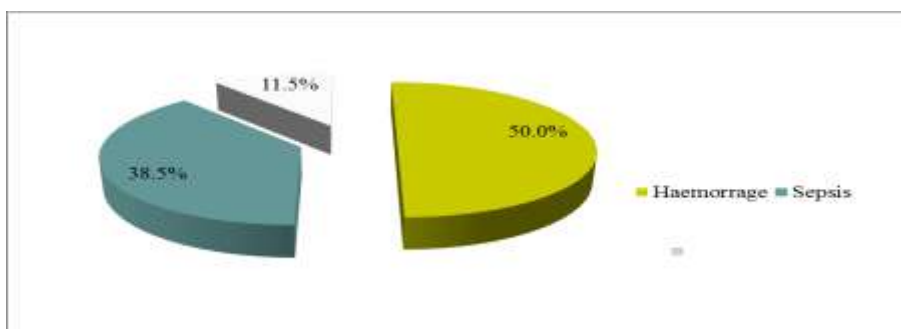
Characteristics	Frequency	Percentage (%)
<b>Age (years)</b>		
20-29	48	60.0
30-39	27	33.7
40-49	5	6.3
<b>Parity</b>		
0	21	26.3
1-2	32	40.0
≥3	27	33.7
<b>Educational status</b>		
Primary	10	12.5
Secondary	46	57.5
Tertiary	24	30.0
<b>Booking status</b>		
Booked	24	30.0
Unbooked	56	70.0
<b>Source of referral</b>		
Traditional birth attendant	21	37.5
Self referred	16	28.6
Maternity home	10	17.9
Churches	9	16.1
<b>Previous caesarean section</b>		
Elective	10	33.3
Emergency	20	66.7



**Fig 1: Indications for Obstetric Hysterectomy**

**Table 2: Maternal outcome**

Outcome	Frequency	Percentage (%)
<b>Maternal complications</b>		
Anaemia	32	40.0
Sepsis	14	17.5
Bladder injury	4	5.0
Anaesthetic complications	3	3.8
None	27	33.7
<b>Maternal death</b>		
		Chi square 14.57
Unbooked	24	92.3 P value 0.001
Booked	2	7.7



**Fig 2: Causes of maternal death**

**Table 3:** Perinatal outcome

<b>Outcome</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Live births	29	36.2
<b>Perinatal death</b>	<b>51</b>	<b>63.8</b>
Intrauterine fetal death	37	72.5
Fresh still birth	14	27.5

#### **IV. Discussion**

The incidence of obstetric hysterectomy from this study was 5.3/1000 births. This is high but similar to reports from previous studies.<sup>[7-9]</sup> It is however lower than those reported from developed countries.<sup>[15]</sup> This may be because of the higher parity, cultural and religious beliefs, aversion to repeat caesarean section, large numbers of unbooked emergencies and antenatal defaulters in our environment. Also, our institution is an important referral center in this region and most of our cases were referred from outside in moribund condition after complications occurred.

In this study, most of the patients were in the peak period of their reproductive life as most of them were between 20-29 years of age and were multiparous. Interestingly, this is in direct contrast to what obtained in other centers where most of the patients in those series were above thirty years of age and were grand-multiparous, hence almost at the end of their reproductive careers.<sup>[16-18]</sup> 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 as loss of their self-esteem and the premium placed on childbearing is very high. The loss of reproductive potential at a relatively early age can result in very devastating consequences like marital disharmony, divorce and psychological disorders. The most common indication for hysterectomy was extensive uterine rupture and haemorrhage resulting from uterine atony. This is similar to results obtained from centers in Nigeria and other developing countries.<sup>[19,20]</sup> Studies from developed countries have found placenta praevia and morbidly adherent placenta as the most frequent indications.<sup>[21,22]</sup> The difference may be due to the increasing caesarean section rate, improved obstetric care, reduced parity and effective family planning and health policies in the developed countries. The reverse is the case in developing countries with poor obstetric care, ignorance, illiteracy, lack of antenatal care, abdominal massage, fundal pressure and injudicious use of oxytocics. These are all known risk factors for uterine rupture and uterine atony, which may result in obstetric hysterectomy.

The most frequent complications were post-operative anemia and pelvic sepsis, similar results were obtained in Uyo.<sup>[23]</sup> These complications probably reflect the state of the patients pre-operatively with regard to blood loss, presence of sepsis and inadequate intrapartum supervision. These could be prevented by early referral of these cases to well-equipped centers, which can treat emergency obstetric cases promptly and efficiently. Sub-total abdominal hysterectomy was the most commonly performed surgical procedure in our review as also documented in some other studies.<sup>[7,17,23,24]</sup> This appears to be the procedure of choice to control uncontrollable obstetric haemorrhage in affected patients as it is relatively easier and quicker to perform. In addition, in patients with extensive uterine rupture it is associated with less postoperative morbidity since the infected and torn/ragged uterus is removed.<sup>[25]</sup>

The maternal mortality ratio of 325/100,000 deliveries in this study may have resulted largely from moribund cases that presented late to hospital, thus leaving no time for maternal salvage. This is higher than those obtained from Calabar and Lagos but lower than previous reports from Zaria.<sup>[24-26]</sup> The high mortality may be due to delay in arrival to hospital as in most of the developing countries, health care system is poorly developed, most of the patients were un-booked coupled with late arrival to the hospital from the referral centers.<sup>[6,27]</sup> Obstetric hysterectomy is associated with extensive blood loss and need for higher number of transfusions.<sup>[5]</sup> Almost all the patients in the present study required blood transfusion as in previous studies.<sup>[6]</sup> The perinatal mortality rate of 575/1000 births following EOH was similar to findings from other developing countries including Nigeria.<sup>[23-26]</sup> This may have been influenced by the most common indication for obstetric hysterectomy in this study, which was extensive uterine rupture with its devastating consequences on the fetus.

#### **V. Conclusion**

Obstetric hysterectomy, though a life-saving procedure was associated with adverse maternal and perinatal outcome mainly from unbooked patients. There is need to enlighten women in our communities on the benefits of antenatal care and hospital delivery by a skilled attendant. Government should consider enacting legislation to discourage people or organizations who operate unlicensed maternity homes in our environment.

#### **Conflict Of Interest**

We declare that a similar abstract to this paper was presented at the RCOG conference in Hyderabad, India (by the same authors), otherwise there was no conflict of interest in the course of conducting this research.

### Authors' Contribution

This work was carried out in collaboration between authors. Author NO and SU did the study design and wrote the protocol. Authors JA and GM did the statistical analysis and literature researches while analyses of the study was done by author NO. All authors read and approved the final manuscript.

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