



## Post Emergency Obstetric Hysterectomy Morbidities in the University of Port Harcourt Teaching Hospital - A Five Year Review

**\*Simeon C Amadi<sup>1</sup>, Chidiebere N Ononuju<sup>1</sup>, Dagogo S Abam<sup>1</sup>, Lesi Sapira-Ordu<sup>1</sup>, Elizabeth C. Ezeaku<sup>1</sup>.**

<sup>1</sup>Department of Obstetrics and Gynaecology, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State, Nigeria.

### Abstract

**Background:** Hysterectomy in the peripartum period is a life-saving emergency procedure that is associated with both intra-operative and post-operative morbidities. This study aims to determine the prevalence of emergency obstetric hysterectomy (EOH), the indications, and the pattern of post-emergency obstetric hysterectomy complications and their outcome in our setting.

**Methodology:** This was a retrospective study of parturients that had an emergency obstetric hysterectomy (EOH) over a five (5)-year period from 1st January 2008 – 31st December 2012. The case records of these patients were retrieved from the medical record library and information relating to age, parity, booking status, indications, type of hysterectomy, and complications of the procedure were extracted. The data obtained were analysed using the statistical product and service solutions (SPSS) 15.0.

**Results:** There were 16,720 deliveries during the five-year period of the study. Emergency obstetric hysterectomies were performed in sixty-nine patients giving a prevalence of 0.4% or 1:242 (4.1 per 1,000) deliveries. Uterine rupture, 33(47.8%) was the leading indication, while the subtotal hysterectomy was the commonest surgery performed 42 (60.9%). The commonest post-hysterectomy morbidities were anaemia, 60 (86.9%) and wound sepsis, 16 (23.2%). Maternal mortality occurred in 7 patients giving a case fatality rate of 10.1%.

**Conclusions:** The prevalence of EOH in this study was high with uterine rupture as the leading indication. Wound sepsis and anaemia were the most common post-EOH complications and the case fatality rate was high. Measures must be put in place to prevent uterine rupture and obstetric haemorrhage in our setting.

**Key words:** Emergency; Hysterectomy; Obstetric; Haemorrhage; Morbidities; Port Harcourt.

**Corresponding Author:** \*Simeon Chijioke Amadi, <sup>1</sup>Department of Obstetrics and Gynaecology, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State, Nigeria.

**Email:** amachijio@yahoo.com

**How to cite this article:** Amadi SC, Ononuju CN, Abam DS, Sapira-Ordu L, Ezeaku EC. Post Emergency Obstetric Hysterectomy Morbidities in the University of Port Harcourt Teaching Hospital - A Five Year Review. Niger Med J 2021;62(6):334-339

Quick Response Code:



This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non-Commercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given, and the new creations are licensed under the identical terms.

## Introduction

Emergency obstetric hysterectomy (EOH) is a life-saving procedure which is often performed to treat some obstetric complications, as a last resort, to prevent maternal mortality.<sup>1</sup> Obstetric hysterectomy refers to the surgical removal of a pregnant uterus or a recently pregnant uterus.<sup>1</sup> This life-saving obstetric procedure has been in use for more than 100 years.<sup>2</sup> It was first proposed in 1869 but with no desirable results.<sup>3</sup> However, seven years later (1876), the first caesarean subtotal hysterectomy was carried out successfully, with the result that both the mother and the baby survived.<sup>4</sup>

The incidence of emergency postpartum hysterectomy and caesarean hysterectomy varies in different countries from 1 in 1420 (0.7 per 1,000) deliveries in Australia<sup>5</sup> to 1 in 348 (2.8 per 1,000) deliveries in Nigeria.<sup>6</sup> Recently, an incidence of 5.4 per 1000 deliveries was reported in South-East Nigeria.<sup>7</sup> The reported incidence in Portugal was 1:2443 (0.4 per 1,000) deliveries.<sup>8</sup> The incidence in African countries include, the Cameroon - 3.75 per 1000 deliveries,<sup>9</sup> the Democratic Republic of the Congo - 2.8 per 1000 deliveries<sup>10</sup> and the South Africa - 9.5 per 1000 deliveries.<sup>11</sup> The reported incidences in different locations in Nigeria are as follows: Nnewi, 1:161 (6.2 per 1,000) deliveries,<sup>12</sup> Lagos, 1:264 (3.8 per 1,000) deliveries,<sup>13</sup> Uyo, 1:439 (2.3 per 1,000) deliveries,<sup>14</sup> Calabar, 1:392 (2.6 per 1,000) deliveries,<sup>15</sup> Sokoto, 1:195 (5.1 per 1,000) deliveries,<sup>16</sup> Ilorin, 1.55 per 1,000 deliveries,<sup>16</sup> 2.5 per 1000 deliveries in Port Harcourt,<sup>17</sup> and 4.0 per 1000 deliveries in Kano.<sup>18</sup> Currently, the incidence of obstetric hysterectomy is reportedly rising all over the world.<sup>19</sup> 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 morbidly adherent placenta, and the increase in multiple pregnancy rates associated with assisted reproductive technology.<sup>19</sup>

Other factors which have been associated with emergency obstetric hysterectomy (EOH) include advanced maternal age, multiparity, malignancies of the cervix and the ovaries.<sup>19</sup> Before 1980, obstetric haemorrhage due to ruptured uterus and uterine atony was the leading indication of EOH in the developed world.<sup>20</sup> Recent studies emanating from the developing countries reveal that obstetric haemorrhage due to uterine rupture is the leading cause of obstetric hysterectomy.<sup>9,17-19</sup> This situation is worsened by poverty, poor transportation facilities, erroneous cultural and religious beliefs, high incidence of unbooked pregnancies and poorly supervised deliveries.<sup>17-19</sup>

Peripartum hysterectomy is associated with severe blood loss, risk of blood transfusion, intraoperative complications, and significant postoperative morbidity and mortality.<sup>9,17,18,21</sup> This is because of the increase in blood supply to the uterus and alteration in pelvic anatomy during pregnancy which predisposes to excessive primary haemorrhage and potential injury to the urinary bladder and ureter, respectively and other contiguous viscera.<sup>22</sup>

There is a paucity of data from South-south region of Nigeria on Post Emergency Obstetric Hysterectomy morbidities. Therefore, this study aims to bridge this knowledge gap by determining the prevalence of emergency obstetric hysterectomy, the indications, and the pattern of post-emergency obstetric hysterectomy complications and their outcome at the University of Port Harcourt Teaching Hospital (UPTH).

## Methods

This was a retrospective study of women who had an emergency obstetric hysterectomy (EOH) at the University of Port Harcourt Teaching Hospital (UPTH) over a five (5)-year period from 1st January 2008 – 31st December 2012. The registration numbers of all women who underwent EOH within this period were identified. With the numbers, the case files were retrieved from the medical records department for in-depth study. Data extracted from their medical records included socio-demographic data, indications for the hysterectomy, type of hysterectomy performed, maternal outcomes, booking status of patients, mode of delivery, and gestational age at delivery, blood transfusion and postoperative complications.

The results obtained were analysed with the statistical product and service solutions (SPSS) 15.0. Relevant descriptive statistics like frequency and percentage were computed for the presentation of categorical variables while quantitative variables were presented by the mean and standard deviation. Cases of hysterectomy due to post-abortal complications and gestational trophoblastic diseases were excluded.

## Ethical Approval

Approval for this study was sought and obtained from the Ethics committee of the University of Port Harcourt Teaching Hospital, Rivers State Nigerian before embarking on this study.

## Results

There were 16,720 deliveries during the five-year period of the study. Emergency obstetric hysterectomy was performed in sixty-nine (69) patients giving a prevalence of 0.4% or 1:242 (4.1 per 1,000) deliveries.

#### Sociodemographic characteristics

The Mean maternal age for this procedure was  $30.26 \pm 5.16$ , with a range of 20 – 45 years. Forty-three (76.81%) were between 20 and 34 years while 16(23.19%) were 35 years and above. The mean parity was  $2.52 \pm 1.68$ , with a range of 0 – 7. Six (8.7%) were nulliparous, 14(20.3%) were primiparous, 34(49.3%) were multiparous and 15 (21.7%) were in the grand multiparous group. All the patients were Christians and married while forty-nine (71.0%) of the patients had a secondary level of education or less. Sixty-six (95.7%) of patients were term at delivery and 3(4.3%) were preterm. The gestational ages ranged from 35 to 42 weeks. The occupational distribution of the patients includes traders 30 (43.5%), civil servants 14(8.7%), Housewives 20 (29.0%) and students 5 (7.2%). Majority of the patients (68.2%) were of low socioeconomic status. Refer to table 1.

#### Indication for the Emergency hysterectomy at the UPTH

The ruptured uterus was the leading indication for emergency obstetric hysterectomy in this study as it accounted for 33(47.8%) of the cases. This was distantly followed by uterine atony and placenta praevia which accounted for 14 (20.3%) each. Uterine scar dehiscence with its accompanying secondary postpartum haemorrhage 2-3 weeks after caesarean delivery accounted for 4 (5.8%) of the cases. Morbidly adherent placenta 2(2.9%) and fibroid uteri 2(2.9%) were the other indications for the procedure. Mode of delivery showed that 35 (50.7%) of the patients had laparotomy for ruptured uterus and extraction of the fetus, 26 (37.7%) patients had caesarean section and 8(11.8%) patients had a vaginal delivery.

The commonly performed surgery in this study was a subtotal hysterectomy, done in 42 (60.9%) of the cases while total abdominal hysterectomy was done in 27 (39.1%) of the cases. The mean blood loss was  $1.9L \pm 0.618L$  with a range of 1 – 4L. Each patient had blood transfusion ranging from 2 to 7 units of blood with a mean of  $4.03 \text{ units} \pm 1.45$ . Three (4.3%) patients had re-laparotomy once for persisting intra-abdominal bleeding and 2 (2.9%) patients had re-laparotomy twice for persisting intra-abdominal bleeding and later, repair of ureteric injury. Refer to table 2.

#### The pattern of complications of emergency obstetric hysterectomy and their outcome

The commonest complications post-hysterectomy in this study were anaemia and wound sepsis which occurred in 60 (86.9%) and 16 (23.2%) of patients respectively. These were followed by vesicovaginal fistula (VVF) 10 (14.5%), puerperal sepsis 9 (13.0%), wound breakdown 7(10.1%), intra-abdominal haemorrhage 5 (7.2%), pulmonary oedema 4 (5.8%), septicaemia 3 (4.3%) and ureteric injury 2 (2.9%) of the patients. Urinary bladder injury, disseminated intravascular coagulation (DIC), burst abdomen, pelvic abscess and septic shock each occurred in 1 (1.4%) patient. Refer to table 3.

Maternal mortality occurred in 7 patients giving a case fatality rate of 10.1%. Haemorrhagic shock and septic shock/septicaemia were each responsible for the 3 (4.3%) of maternal deaths while consumptive coagulopathy was responsible for 1 (1.4%) maternal death.

Table 1: Sociodemographic characteristics of the women who had Emergency Obstetric Hysterectomy

Age (Years)	Frequency (%)
≤ 19	0
20 – 34	53 (76.8)
≥ 35	24 (34.8)
<b>Parity</b>	
0	6
(8.7)	
1	14
(20.3)	
2	18
(26.1)	
3	16
(23.2)	
4	5
(7.2)	
≥ 5	10
(10.2)	
<b>Gestational age</b>	
Preterm	3 (4.3)
Term	62 (89.8)

Post term	4 (5.8)
<b>Marital Status</b>	
Single	0
Married	69 (100)
Separated	0
<b>Educational status</b>	
Primary	5 (7.2)
Secondary	44 (63.8)
Tertiary	20 (29.0)
<b>Occupation</b>	
Traders	30 (43.5)
House wives	20 (29.0)
Civil servants	14 (8.7)
Students	5 (7.2)
<b>Soci-economic status</b>	
Low	47 (68.2)
Middle	2 (2.8)
High	20 (29.0)

Table 2: Indications for Emergency Obstetric hysterectomy

Variable	Number (%)
Uterine rupture (47.8)	33
Uterine atony	14 (20.3)
Placenta previa (20.3)	14
Uterine scar dehiscence	4 (5.8)
Retained placenta	2 (2.9)
Fibroid uteri	2 (2.9)

Table 3: Pattern of post-emergency Obstetric hysterectomy complications

Variable	Number (%)
Anaemia	60 (86.9)
Wound sepsis (23.2)	16
Vesico vaginal fistula (14.5)	10
Puerperal sepsis (13.0)	9
Wound breakdown (10.1)	7

Intra-abdominal bleeding (7.0)	5
Pulmonary oedema	4 (5.8)
Septicaemia (4.3)	3
Ureteric injury (2.9)	2
Hypovolemic shock (2.9)	2
Urinary bladder injury (1.4)	1
Disseminated intravascular coagulopathy (1.4)	1
Burst abdomen	1 (1.4)
Pelvic abscess	1 (1.4)
Septic shock	1 (1.4)

## Discussion

The prevalence of EOH in this study was 4.1/1000 deliveries (0.4%). This is comparable with the reported prevalence from other healthcare centres in Nigeria,<sup>1,12,16-18</sup> and other centres in the African continent.<sup>9,10</sup> Although the prevalence reported in this study is lower than that reported in South Africa (0.95%)<sup>11</sup> and Pakistan (0.7%),<sup>2</sup> it is higher than the reported prevalence in America and Europe.<sup>3,8,12,23</sup> The relatively high prevalence of EOH in our environment and other developing countries may not be unrelated to poor health seeking behaviours, delayed referral to hospital, and inadequate emergency obstetric care services.

The most common indication for emergency obstetric hysterectomy in this study was uterine rupture. This is similar to findings from other centres in Nigeria<sup>1,12-18</sup> and other developing countries like the Democratic Republic of the Congo and the India,<sup>9,24</sup> but varies from results from developed countries where placenta praevia and morbidly adherent placenta are the most frequent indications.<sup>8,25</sup> This finding in this study highlights the significant contribution of ruptured uterus to poor reproductive health indices of our women and also to the alarming high maternal mortality and morbidity in our environment.

The major post emergency hysterectomy complications reported in this study were anaemia, wound sepsis, and vesicovaginal fistula. This finding is similar to what has been reported by some authors in Nigeria<sup>1,12-18</sup> and are frequently related to the indication for the surgery, condition of the patient at admission, availability of blood, and the skill of the surgeon.<sup>23</sup> The maternal mortality rate of 10.1% in this study may have resulted largely from moribund cases who presented late to hospital, thus leaving no time for maternal salvage. This mortality rate is similar to that of 10.8% in Sokoto,<sup>1</sup> although it is lower than the 26.3%, 31.0%, 59.1%, 20.0% and 19.3% that were obtained in Ilorin<sup>16</sup> Nnewi,<sup>12</sup> Zaria,<sup>26</sup> Calabar,<sup>15</sup> and Lagos<sup>13</sup> respectively. The reason for this disparity has not been adduced by this study; however, it may be due to the policy of aggressive resuscitation that is practiced in our hospital in line with the departmental protocol for management of obstetric haemorrhage and efficient blood banking service. Notwithstanding, when compared to what obtains in the developed world where several series of emergency obstetric hysterectomies were reported without any maternal deaths,<sup>3</sup> our maternal mortality rate is high.

A lot of difficulties and delays were encountered between official application for the folders, getting approval, as well as retrieving them from the medical records unit of the hospital. To overcome this challenge and make future research engagements easier there is an urgent need to upgrade the operations at the medical record unit of the University of Port Harcourt Teaching Hospital from paper based to electronic operations.

## Conclusion

The prevalence of EOH in this study was high. The leading indication was uterine rupture and subtotal hysterectomy was the commonest surgery performed. Wound sepsis and anaemia were the most common post EOH complications, and the case fatality rate was high. Measures must be put in place to prevent uterine rupture and obstetric haemorrhage.

## References

1. Nwobodo EI, Nnadi DC. Emergency Obstetric Hysterectomy in a Tertiary Hospital in Sokoto, Nigeria. *Ann Med Health Sci Res.* 2012; 2: 37–40.
2. Siddiq N, Ghazi A, Jabbar S, Ali T. Emergency obstetrical hysterectomy (EOH): A life saving procedure in obstetrics. *Pak J Surg.* 2007; 23: 217–9.
3. Daskalakis G, Anastasakis E, Papantoniou N, Mesogitis S, Theodora M, Antsaklis A. Emergency obstetric hysterectomy, *Acta Obstetricia et Gynecologica Scandinavica.* 2007; 86: 223–7.
4. Sturdee DW, Rushton DI. Caesarean and post-partum hysterectomy 1968–1983, *British Journal of Obstetrics and Gynaecology.* 1986; 93: 270–4.
5. Hill DJ, Beisher NA. Hysterectomy in obstetric practice. *Aust N Z J Obstet Gynaecol* 1980; 20: 151-3.
6. Osefo NJ. Caesarean and postpartum hysterectomy in Enugu, 1973-1986. *Int J Gynaecol Obstet* 1989; 30: 93-7.
7. Umezurike CC, Feyi-Waboso PA, Adisa CA. Peripartum hysterectomy in Aba south-eastern Nigeria. *Aust N Z J Obstet Gynaecol* 2008; 48:580-2.
8. Joana FC, Adelaide C, Sílvia T, Fernanda C, Olímpia do C. Emergency Peripartum Hysterectomy: A 10-Year Review. *SRN Emergency Medicine.* 2012; 20: 1-7
9. Mbakwa RM, Tendongforl N, Ngunyi YL, Ngek ESN, Alemkia F, Egbe TO. Indications and outcomes of emergency obstetric hysterectomy; a 5-year review at the Bafoussam Regional Hospital, Cameroon *BMC Pregnancy and Childbirth* 2021; 21:323-329.
10. Mathe JK. Obstetric hysterectomy in Rural Democratic Republic of the Congo: An analysis of 40 cases at Katwa hospital. *Afr J Reprod Health.* 2008; 12: 60-6.
11. Wandabwa JN, Businge C, Longo-Mbenza B, Mdaka ML, Kiondo P. Peripartum hysterectomy: two years' experience at Nelson Mandela academic hospital, Mthatha, Eastern Cape South Africa *African Health Sciences* 2013;13:469-474
12. Obiechina N, Eleje G U, Ezebialu I U, Okeke C, Mbamara S U. Emergency peripartum hysterectomy in Nnewi, Nigeria: A 10-year review. *Niger J Clin Pract* 2012; 15:168-71
13. Rabi KA, Akinlusi FM, Adewunmi AA, Akinola OI. Emergency peripartum hysterectomy in a tertiary hospital in Lagos, Nigeria: a five-year review. *Trop Doct.* 2010 ; 40:1-4.
14. Aniekan MA, Aniefiok JU, Ntiense MU, Emmanuel CI, Otobong PA. Emergency peripartum hysterectomy in a tertiary hospital in southern Nigeria. *The Pan African Medical Journal.* 2013; 15:60-7
15. Udoma EJ, John ME, Etuk SJ, Ekanem AD. Morbidity and mortality following Emergency Obstetric Hysterectomy in Calabar, Nigeria. *Nig J Clin Prac* 2003; 6: 52-5.
16. Aag JS R, Awo O, Ao A, Ho R. Emergency Peripartum Hysterectomy and Its Outcome in Ilorin, Nigeria. *The Internet Journal of Gynecology and Obstetrics.* 2010; 15:1-5.
17. Awoyesuku PA, Amadi SC, John DH, Kwosah NJ. "Emergency Peripartum Hysterectomy: Frequency, Indications and Maternal Outcome at the Rivers State University Teaching Hospital, Port-Harcourt, Nigeria: A 5-Year Review". *EC Gynaecology* 2021; 10:12-25.
18. Omole-Ohonsi A, Olayinka HT. Emergency Peripartum Hysterectomy in a Developing Country *J Obstet Gynaecol Can* 2012; 34:954–960.
19. Nisar N, Sohoo NA. Emergency peripartum hysterectomy; frequency, indications, and maternal outcome. *J Ayub Med Coll Abbottabad.* 2009; 2:48-51.
20. Kwee A, Bots ML, Visser GHA, and Bruinse HW. Emergency peripartum hysterectomy: a prospective study in the Netherlands, *European Journal of Obstetrics Gynaecology and Reproductive Biology.* 2006; 124: 187–92.
21. Francois K, Ortiz J, Harris C, Foley MR, Elliott JP. Is peripartum hysterectomy more common in multiple gestations? *Obstet Gynecol* 2005; 105:1369-72.
22. Incerpi MH. Operative delivery. In: Decherney AH, Nathan L, Goodwin TM, Laufer N, (eds). *Current Diagnosis and Treatment in Obstetrics and Gynaecology.* 10th ed. New York. McGraw Hill. 2007; 461–76.
23. Kastner ES, Figueroa R, Garry D, Naulik D. Emergency peripartum hysterectomy: Experience at a community teaching hospital. *Obstet Gynecol* 2002; 99: 971-5.
24. Javed N, Tahir S. Emergency obstetric hysterectomy-one year review at Allied Hospital, Faisalabad. *APMC.* 2010; 4:86-9.
25. Machado LSM. Emergency peripartum hysterectomy: Incidence, indications, risk factors and outcome. *North Am J Med Sci.* 2011; 3:358-61.
26. Gbadebo AA, Edwin E, Anawo AC. Inevitable peripartum hysterectomy in a tropical Hospital: indications and materno-foetal outcome. *Pak J Med Sci.* 2008; 24:122-126.