



Review of Management Outcomes of Uterine Rupture in a Facility Providing Free Maternal Health in South West, Nigeria

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Abstract

OBJECTIVES: To determine the prevalence, aetiological factors and fetomaternal outcome of uterine rupture at the Mother and Child Hospital during the period of free maternal health.

MATERIALS AND METHODS: A retrospective study of all the cases of uterine rupture managed between January 1, 2013 and December 31, 2015. Case notes of patients who had uterine rupture were retrieved from the record department and their vital information was transcribed into a study proforma. The information was analysed using SPSS version 25 with frequencies and percentage represented by appropriate statistical tables.

RESULTS: The total number of deliveries within this period of review was 9217 and 105 were uterine rupture giving a prevalence of 1.1% or 1 in 88 deliveries, 30-34 age group was mostly affected (85%) with majority of them having only primary school education (89%). Combination of aetiological factors was found, mostly inappropriate use of uterotonics with prolonged obstructed labour or inappropriate use of uterotonics with previous scar, all the patients first presented at traditional birth homes where they were given intramuscular uterotonics. There were 12 and 97 maternal and fetal deaths respectively giving a case fatality rate of 11% and perinatal mortality of 10.52.

CONCLUSION: In this study, there was reduction in case fatality rate as a result of free maternal health which eliminated phase two and three delays in emergency maternity care during the study period.

Keywords: uterine rupture, scar dehiscence, traditional birth homes, uterotonics.

INTRODUCTION

Globally, up to 500,000 women die yearly due to pregnancy and child birth complication, 99% of such deaths occur in developing countries like Nigeria.¹ The five leading causes of maternal mortality identified previously in various studies were haemorrhage, eclampsia, obstructed labour, sepsis and complication of unsafe abortion.^{2,3,4} Uterine rupture can be directly or indirectly linked to four of these causes. For instance, it can cause obstetric haemorrhage; mostly a sequelae of prolonged obstructed labour in sub-Saharan Africa and can be a late complication of previous unsafe abortion as well as result in sepsis postoperatively if not properly managed. Unfortunately, Nigeria still has a high maternal mortality rate (821 per 100,000 live births), as well as unacceptably high perinatal mortality rate (78 per 1000 live births).^{5,6} More than 90% of such perinatal deaths were still births; uterine rupture contributes more than 80% to perinatal mortality.^{7,8} Concerted effort need to be employed to reduce the occurrence of uterine rupture in order to boost the health indices of the nation and with a view to achieving the sustainable development goal target 3. Rupture of the gravid uterus is defined as the complete or partial disruption in the continuity of the lining of the uterine wall with or without intact peritoneum. Scar dehiscence refers to rupture along the site of previous uterine scar.¹ Rupture of the gravid uterus is one of the leading causes of maternal mortality in developing countries but rare in the developed countries. Incidence is between 1 in 1148 to 1 in 2250 deliveries in the developed world while it may be as high as between 1 in 87 to 1 in 273 deliveries as reported in various hospital based studies in Nigeria and case fatality rate exceeding 17%.^{9,10} an incidence of 1 in 124 deliveries has been reported in Accra, Ghana.¹¹ The commonest aetiology in the developed countries is the use of uterotonics in the scarred uterus while in the developing countries, in due to obstructed labour and high parity in unscarred uterus. Other causes implicated include inappropriate use of uterotonics in labour, obstetric procedures (like

external cephalic version and internal podalic version) and direct trauma to the maternal abdomen. The classical signs and symptoms of complete rupture of the gravid uterus include a sudden feeling of something giving way, cessation of uterine contractions, alteration in the shape of the gravid abdomen, severe abdominal pain, vaginal bleeding and circulatory collapse. However fetal heart rate abnormalities are the earliest signs of uterine rupture. Management of rupture of the gravid uterus involves initial resuscitation of the mother particularly if patient presents in shock. The definitive surgery should be the one that is the fastest and safest for the mother. It may be uterine repair plus bilateral tubal ligation, subtotal or total hysterectomy depending on the extent of injury and the available expertise. Early presentation and timely intervention would improve the prognosis. Survivors of uterine rupture suffer complications like wound sepsis, massive blood transfusion and its attendant complications as well as early menopause. This study aimed at estimating the prevalence of ruptured uterus in our facility and its associated factors. The result of this study may further assist in planning interventions necessary to reduce or prevent the occurrence of uterine rupture in our locality.

MATERIALS AND METHODS

The Hospital numbers of patients with uterine rupture between Jan 1st 2013 and Dec.2015 gotten from the labour ward and theatre registers were used to retrieve their case folders from the medical record department of the hospital. The relevant information extracted from the folders were transcribed into study proforma and result was analysed using SPSS 25, with frequencies and percentages represented by appropriate statistical tables.

RESULTS

Within the three –year period of this study there were total of 9217 deliveries, out of which 105 patients had uterine rupture. This gave a prevalence of 1.1% or 1 in 88 deliveries. The age distribution of patients with rupture of the gravid uterus was as shown in table 1 below.

Table 1: Showing the age distribution of the patients.

AGE	FREQUENCY	PERCENTAGE
20- 24	7	6.7
25-29	9	8.6
30-34	82	84.8

The least {7(7%)} and the highest {89(85%)} occurrences were in the age groups 20-24 and 30-34 respectively.

Table 2 below shows the other sociodemographic characteristics

VARIABLE	FREQUENCY	PERCENTAGE
EDUCATION		
Primary	89	84.8
Secondary	9	8.6
Post-secondary	7	6.67
OCCUPATION		
Trading	77	73.3
Civil servants	9	8.6
Housewives	19	18.1
PARITY		
0	5	4.8
1	13	12.4
2-4	87	82.9
BOOKING STATUS		
Unbooked	83	79.0
Booked	22	20.9

Significant portion {77(73%)} of the patients were traders. Eighty three (79%) of the patients were unbooked, while seventeen (16%) women presented first at traditional birth homes at the onset of their labour despite being booked. A remarkable size of the patient was multiparous [87(83%)].

Table 3: Showing the etiological factors of patients

AETIOLOGY	FREQUENCY	PERCENTAGE
Prolonged obstructed labour	53	50.5
Previous Caesarean section	52	49.5
Inappropriate use of oxytocic plus prolonged obstructed labour	53	50.5
Inappropriate use of oxytocic plus previous caesarean section	17	16.2
Prolonged obstructed labour plus previous caesarean section	35	33.3

All the uterine ruptures occurred during labour, 52 of the patients had previous caesarean section while 53 had prolonged obstructed labour. All the prolonged obstructed labour cases and seventeen of the patients with previous caesarean section also had intramuscular injections of oxytocin during labour. The remaining 35 of the patients with previous caesarean section also had history suggestive of prolonged obstructed labour. Scar dehiscence with lateral extension was seen mostly in the patients with previous scar but the ruptures in the unscarred uteri were mostly multiple, long segment (more than 10cm), posterior lateral rent with broad ligament haematoma. Subtotal abdominal hysterectomy was the surgery of choice in most cases of the uterine rupture {58(55%)}, forty seven (45%) had uterine repair plus bilateral tubal ligation. Uterine repair plus bilateral ligation was the surgery of choice in most cases of scar dehiscence. Perinatal mortality in this study was 10.53 and case fatality rate of {12(11%)} was found.

DISCUSSION

A prevalence of 1 in 88 deliveries found in this study was higher than the range of 1 in 164 to 273 deliveries quoted in other Nigeria studies.^{1,2,3,4,5} probably because complicated cases in traditional birth homes were under surveillance and were referred to the study location during the period of the study. Mostly affected age group 30-34 years also observed in a previous study⁴ may be due to the possibility of multiparity in the age group. The worrisome pattern of history in sizeable portion of patients 26% who were booked but yet presented at the traditional birth homes in this study was similar to the findings in other studies.^{6,7,8} Conversely, a combination of causal factors which are inappropriate use of uterotonics with prolonged labour found in 70% of the cases in the study was unlike a previous study that reported prolonged labour singly.¹¹ and another that found inappropriate use of uterotonics alone but the latter was seen in 16% of the cases in this study. The anterior lower transverse segment tear with lateral extension in patients with previous scar is also observed in other previous studies.^{12,13} Subtotal hysterectomy was the commonest procedure done because is the fastest and safest for the patients. The perinatal mortality of 82% in this study was comparable to other previous studies that showed over 80%.^{12,13} However the case fatality rate of 11% was lesser than what was found in other studies where over 17% was reported.¹¹ This lesser value may be due to the availability of emergency response team to convey patients from birth homes, alarm system and free maternal health services during the period of this study.

CONCLUSION

Uterine rupture case fatality rate was reduced in this study, because of the elimination of type 2 and 3 delays in our facility study. The injudicious use of uterotonics by the traditional birth attendants was associated with occurrence of uterine rupture as well as low level of education. A comparable study with other centres, offering out-of-pocket health services to directly examine this effect is needed.

Conflict of Interest: No conflict of interest

REFERENCES

- Hofmeyr GJ, Say L, Gulmezoglu AM. WHO systematic review of maternal mortality and morbidity: the prevalence of uterine rupture. BJOG.2005; 12(9); 1221-8.
- WHO. World health statistics 2014. Geneva: Switzerland World Health Organization; 2014.
- WHO. Health status Statistics mortality. Geneva: World Health Organization; 2013.
- Maternal mortality in 1990-2015. WHO, UNICEF, World Bank Group and United Nations Population Division. Maternal Mortality Estimation Inter-Agency Group.
- Mbamara SU, Obiechina N, Eleje GU. An analysis of uterine rupture at the Nnamidi Azikwe University Teaching Hospital Nnewi, Southeast Nigeria. Niger J Clin Pract 2012; 15:448-52.
- Ezechi OC, Mabayoje P, Obiesie LO. Ruptured uterus in Southwestern Nigeria: A reprisal Singapore Med J 2004 Vol 45 (3):114-8.
- Adegbola O, Odeseye AK. Uterine rupture at Lagos University Teaching Hospital, J Clin Sci 2017; 14:13-7.
- Aboyegi AP, Ijaiya MD, Yahaya UR. Ruptured uterus: A study of 100 consecutive cases in Ilorin Nigeria. J Obstet Gynaecol Res 2001; 27:34 1-8.
- Eguzo KN, Lawal AK, Alli F, Umezurike CC. Patterns of uterine rupture in Nigeria: a comparative study of scarred and unscarred uterus. Int Reprod Contracept Obstet Gynecol .2015 Aug; 4(4):1094-1099.

10. Igwegbe AO, Eleje GU, Udegbonam OI. Risk factors and perinatal outcome of uterine rupture in a low resource setting. *Niger Med J* 2013; 54:415-9.
11. Ekpo EE. Uterine rupture as seen in the University of Teaching Hospital, Nigeria: A five year Review. *J Obstet Gynaecol* 2000; 20:154-6.
12. Ogunnowo T, Olayemi O, Aimakwu CO. Uterine rupture: UCH, Ibadan experience. *West Afr J Med* 2003; 22:236-9.
13. Okonta PI, Igberase GO. A comparison of booked and unbooked patients with ruptured uterus in a referral hospital in the Niger Delta region of Nigeria. *Nigeria J Med* 2007; 16:129-32.
14. Justus HG, Say L, Metin GA. Systematic review: WHO systematic review of maternal mortality and morbidity: The prevalence of uterine rupture. *BJOG*. 2005; 112:1221-18.
15. Orhue AAE. Ruptured uterus. In: Akin Agboola (Ed). *Textbook of Obstetrics and Gynaecology for medical students*, second edition. 2005:465-470.

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