ORIGINAL ARTICLE

Ruptured Uterus at Abubakar Tafawa Balewa University Teaching Hospital, Bauchi, Nigeria: A 2 Year Review

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Abstract

Background: Rupture of the gravid uterus represents one of the major obstetric emergencies that significantly affect both mother and fetus. It contributes significantly to the high maternal and perinatal morbidities and mortalities in Sub-Saharan Africa.

Method: A retrospective study of pregnant women with ruptured uterus managed at the department of Obstetrics and Gynaecology of Abubakar Tafawa Balewa University Teaching Hospital, Bauchi, Nigeria from 1st January2013 to 31st December 2014. Information on the booking status, age, parity, place of intrapartum care, aetiology, maternal and perinatal morbidity and mortality, and other relevant information were extracted and analyzed.

Results: The total number of deliveries was 6,738 and those with ruptured uterus were 54, giving a ratio of 1 in 125 deliveries. Prolonged obstructed labour was the commonest aetiologic factor identified (52.1%). Other factors were grandmultiparity, previous caesarian sections, trauma, abnormal lie and injudicious use of oxytocin. Twelve of the patients (25.0%) had repair of the ruptured uterus alone, 29(60.4%) had repair with bilateral tubal ligation. One patient had total abdominal hysterectomy while 6(12.5%) had sub-total hysterectomies. There were a total of 2 maternal deaths with a case fatality rate of 4.2%. Four (8.3%) babies survived.

Conclusion: The incidence of ruptured uterus in Bauchi was high in this study. The identified risk factors included majorly prolonged obstructed labour, the injudious use of oxytocics and also previous caesarean sections.

Key Words: pregnant women, ruptured uterus, morbidity, maternal mortality, Bauchi

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Introduction

Ruptured uterus is an obstetric emergency and results in significant maternal and perinatal morbidity and mortality in Nigeria.[1] It is defined as the total disruption of the wall of the pregnant uterus with or without extrusion of its contents either the baby or the placenta.[2] The profile of causes and mortality varies between developed and developing countries. However, the lack or poor conditions of health care delivery in the later and a rising caesarean section rate in the former means that uterine rupture is increasing in most areas of the world.[3] Reports from various authors in Nigeria and other parts of Africa in the last two decades have put the incidence between 0.36 and 2.44 percent deliveries.[4] In contrast, incidences in developed countries range between 0.03 and 0.3 per cent deliveries.[5] In Nigeria, the incidence of uterine rupture remains high and continues to increase because of poverty, illiteracy, unavailability of manpower, poor supply of medical equipments and consumables, and dwindling health care funding as a result of bad governance and corruption.[6] In the Southern part of Nigeria incidences of 1 in 273 deliveries and 1 in 426 deliveries were reported in Ile Ife and Benin respectively,[7,8] while in the northern part of Nigeria incidences of 1 in 120 deliveries, 1 in 167 deliveries and 1 in 594 deliveries were reported in Azare, Zaria and Kano respectively.[1,9,10]

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The predisposing factors of ruptured uterus include obstructed labor, high parity, uterine hyperstimulation with oxytocics, previously scarred uterus, and intrauterine manipulation such as external cephalic version, internal podalic version, breech extraction and manual removal of retained placenta.[6,10,11,12] Other risk factors include congenital malformation of the uterus, operative vaginal deliveries, unbooked status and low socioeconomic status.[8,13,14,15] The clinical presentation of ruptured uterus depends on the site and nature of the rupture, the time of presentation to the hospital, the amount of blood loss and the presence of other associated complications .Thus, a high index of suspicion needs to be maintained.[16] The treatment of uterine rupture includes repair alone, repair with bilateral tubal ligation and hysterectomy. Therefore a lot of the patients lose their reproductive function. Ruptured uterus therefore has grave socio-cultural implications, especially in a society where premium is attached to childbirth.[6]

Rupture of the uterus is a significant cause of maternal mortality and morbidity; the main causes of death include shock (haemorrhagic or septicaemic), disseminated intravascular coagulation (DIC), acute renal failure (ARF) and overwhelming sepsis.[6,9,16] A high perinatal mortality is the hallmark of ruptured uterus

with reported incidences ranging from 75 to 93%.[1,17] We therefore sought to determine the incidence of ruptured uterus at Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH), Bauchi over a 2-year period between 1st January, 2013 to 31st December, 2014, determine the various aetiologic factors, and assess the modalities of management and outcome.

Materials and Methods

This was a retrospective study of pregnant women with ruptured uterus managed in the Department of Obstetrics and Gynaecology of the ATBUTH, a 700-bed tertiary health institution located in Bauchi, Nigeria from 1st January, 2013 to 31st December, 2014. Delivery records were obtained from theatre and maternity registers. Information concerning patients with ruptured uterus was obtained from the labour ward emergency registers. The case files were retrieved from the medical records library. Information on the booking status, age, parity, place of intrapartum care, aetiology, maternal and perinatal morbidity and mortality, and other relevant information were extracted. The data collected were analyzed using frequencies and simple percentages. Mean, mode and standard deviation were employed where applicable.

Ethical approval was given by the Ethical Board of the institution to conduct the study.

Results

During the period under review, there were 6,738 deliveries and a total of 54 cases of ruptured uterus were treated, giving a ratio of 1 in 125 deliveries. Of the 54 cases, 48 case folders were retrieved giving a retrieval rate of 88.9%.

The study showed that the patients' ages ranged between 16-40 years with a mean of 28.7 ± 5.92 years. The highest occurrence (35.4%) was in the 26-30 years age group and was followed by 22.9% in those aged 31-35 years age group. The range of parity was between 1-10, the modal parity was among the women with parity ≥ 5. It also showed that the majority of the patients, 60.4% were noted to be booked for ANC elsewhere, 35.4% unbooked while only 4.2% booked in our hospital. (Table 1) Again, the study also showed the predisposing/aetiological factors identified in these patients. In most of the patients, there were multiple aetiological factors present. Prolonged obstructed labour was the commonest risk factor identified (52.1%). Other factors were grand multiparity (45.8%), previous caesarean section (29.2%), injudicious use of oxytocin (31.3%), trauma (4.2%) and abnormal lie (16.7%). (Table 2)

This study illustrated the sites of uterine rupture. The most common site of rupture was the lower segment of the uterus in 30 patients (62.5%) followed by the upper segment in 9 patients (18.7%), and posterior wall in 6 patients (12.5%). Three patients (6.3%) had rupture of both the anterior and posterior walls of the uterus. (Table 2)

Table 1: Sociodemographics of women with uterine rupture

Characteristics	Frequency (N=48)	Percentage (%)
Age		
16-20	5	10.4
21-25	8	16.7
26-30	17	35.4
31-35	11	22.9
36-40	7	14.6
Parity		
1	10	20.8
2	2	4.2
3	3	6.3
4	8	16.7
≥5	25	52.0
Booking status		
Unbooked	17	35.4
Booked elsewhere*	29	60.4
Booked in ATBUTH	2	4.2

*private hospitals, general hospital and primary health care center

In addition, the study depicted the places of intrapartum care of these patients. The majority were in various primary health care centres (39.6%), at home with or without traditional birth attendants (31.2%), general hospitals (18.8%), or in private hospitals (6.3%). Only 2 patients (4.2%) had intrapartum care at our hospital. (Table 2)

In the surgical management of these patients, 12(25.0%) had repair of the ruptured uterus, 29(60.4%) had repair with bilateral tubal ligation. Hysterectomy was performed in 7 patients out of whom one (2.1%) had total abdominal hysterectomy (TAH) due to uncontrollable bleeding and 6(12.5%) sub-total hysterectomies. (Table 2)

There were a total of 2 maternal deaths giving a case fatality rate of 4.2% of the 48 women managed. The two patients were unbooked for ANC. The causes of maternal death were hemorrhagic shock, septicemia and DIC. The fetal outcome was poor with only 4 (8.3%) survivors out of 48 neonates delivered.

Table 2: Risk factors and management of women with uterine rupture

Characteristics	Frequency (N=48)	Percentage (%)
Place of intrapartum care		
Teaching hospital	2	4.2
General hospital	9	18.8
Home delivery by TBAs	15	31.2
Primary Health Care Clinics	19	39.6
Private hospitals	3	6.3
Risk factors		
Abnormal lie/presentations	8	16.7
Grandmultiparity	22	45.8
Trauma	2	4.2
Prolonged obstructed labour	25	52.1
Injudicious oxytocin usage	15	31.3
Previous caesarean section	14	29.2
Site of rupture		
Lower segment	30	62.5
Upper segment	9	18.7
Posterior wall	6	12.5
Anterior and posterior walls	3	6.3
Surgical procedures		
Uterine repair only	12	25.0
Repair with bilateral tubal ligations	29	60.4
Sub-total hysterectomy	6	12.5
Total abdominal hysterectomy	1	2.1

Discussion

In this study, the total incidence of ruptured uterus was 1in 125 deliveries. This is similar to incidences reported in Azare and Bida in Nigeria.[1,18] But it was higher than reports from Jos, Ile-Ife, Calabar and Ilorin.[4,6,13,14] Higher figures have also been observed in studies done in other centres in Nigeria.[9,19,20]. This rising trend may be due to the continuous decline in the socio-economic status of Nigerians in general and women in particular , as well as the increasing cost of medical services in most hospitals in the country, poverty, illiteracy, unavailability of manpower, poor supply of medical equipment and consumables, and dwindling health care funding.[6] The decline of the Nigerian economy has led to an increasing number of unbooked women or clinic defaulters among those that booked.[16] The percentage of patients unbooked for antenatal care in this study was high (35.4%) so was also in similar studies.[8,9,10,20] In this study, the percentage of patients that booked elsewhere was high (60.4%) The increased rate of poverty in the land and high level of illiteracy among rural dwellers in Nigeria accounts for the rising incidence of this obstetric catastrophe as hospital treatment is generally regarded as expensive and many people see it as the last hope when other forms of intervention have failed.[13] There is no tangible health insurance policy in Nigeria and high cost is a deterrent to hospital attendance and patients are brought to the health facility as a last resort.[17]

The socio-cultural aversion of Nigerian women to abdominal delivery or a repeat surgery may be an additional factor.[21] Thus many of them would attempt vaginal delivery elsewhere only to present late in the hospital with avoidable complications. This was observed in this study where majority of the patients with previous scars who had uterine rupture were either unbooked or booked elsewhere. Similar findings have been reported from other centers .[4,16]

Many cases of uterine rupture are associated with a combination of risk factors as was demonstrated in this study. However, the most frequent single identified aetiologic factor was prolonged obstructed labour followed by grandmultiparity, injudicious use of oxytocin and previous caesarean sections. This finding is similar to the findings of Kahansin et al, Ezechi et al, Ekanem et al, and Olatunji et al.[4,6,13,20] However, it is in sharp contrast to the finding of Ehigiegbaa et al in Benin, where caesarean section was the single most identified risk factor.[16] Increasing parity is also known to be an important aetiologic factor in uterine ruptures. Grandmultiparous women are especially prone and constitute a major risk group.[4,5,9] This finding is similar to the findings in Benin, Sagamu, Enugu, and Conakry.[16,20,22]

Education and creating awareness of use of modern family planning methods among our women will help reduce the incidence of grandmultiparity and ultimately reduce the chances of ruptured uterus in grand multiparous women.[23] The contribution of previous caesarean delivery to subsequent rupture calls for measures to reduce the rising incidence of caesarean section and proper counseling of the women who have undergone caesarean section along with their family members before discharge from hospitals. This rising caesarean section rate, if left unchecked will certainly affect the rate of ruptured uterus, morbidly adherent placenta and maternal mortality.[23] This factor is a significant factor in the incidence of uterine rupture in the developed countries.[3] A large number of patients in this study were either referred from general hospitals, primary health care centres, or brought by relatives from homes. The clinical presentation of ruptured uterus depends on the site and nature of the rupture, the time of presentation to the hospital, the amount of blood loss and the presence of other associated complications.[18] Abdominal pain, vaginal bleeding, pallor and shock were the commonest presenting features in this study. This is

similar to the findings by Adegbola et al,[24] but different from the findings of Ekanem et al where fetal heart rate abnormalities were the commonest clinical presentation.[13]

Generally, the choice of surgery depends on the site and extent of rupture, the condition of the patient at the time of presentation, the patient's parity, the choice and experience of the surgeon as well as the socio-cultural peculiarity of the areas of practice.[16,17,23] The commonest surgical treatment in this study was repair with bilateral tubal ligation, followed by repair of the uterus alone. Hysterectomy was the least common (14.6%). This is the trend in most studies done in Nigeria. Repair alone was however, the commonest mode of surgery in some studies.[4,16,17] These indications for hysterectomies are similar to those in other studies.[4,17,25]

Ruptured uterus remains a major cause of maternal mortality and ranks among the five major causes of maternal deaths in developing countries.[26] The low mortality recorded in this study was probably due to the early diagnosis and the prompt and aggressive surgical intervention. Delay in surgical intervention after diagnosis is an important factor associated with increased maternal and fetal morbidity and mortality. Ruptured uterus is often associated with a poor fetal outcome. The fetal mortality of 91.7% in our report was quite high but similar to the results of other studies.[16,17]

In conclusion, the incidence of ruptured uterus among parturients was high among women managed at Abubakar Tafawa Balewa University Teaching Hospital, Bauchi. The identified risk factors include majorly prolonged obstructed labour among the women referred from PHC clinics and from TBAs, the injudious use of oxytocics and also high risk patients with previous scars.

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