Original Article Research Journal of Health Sciences

Uterine rupture; An obstetric tragedy still with us. A six year review of cases in a specialist hospital, NorthWest Nigeria

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Abstract

Background: Uterine rupture is a major cause of perinatal and maternal morbidity and mortality, it usually has a devastating outcome if not promptly attended to. The study determined the trends, risk factors, feto-maternal outcomes following uterine rupture as seen at ASYBSH.

Method: The study was a retrospective review of cases of uterine rupture managed at the ASYBSH between March 2015 and February 2021. Records of the theatre and labour wards were searched and the folders of patients with uterine rupture were retrieved. Relevant information such as socio-demographic variables, booking status, clinical presentations were retrieved and entered into a structured profoma.

Results: Deliveries in the hospital during the period were eleven thousand four hundred and twenty (11,420), out of which one hundred and fifty-six (156) were complicated by uterine rupture giving an overall incidence of 1.36 percent or one in every seventy-four (74) deliveries. Uterine rupture occurred mainly among women of low socio-economic status and high parity. The major predisposing factors were injudicious use of oxytocin (62.8%) prolonged obstructed labour (19.8%), previous caesarean section scar (8.5%), use of misoprostol (5.3%), fundal pressure (2.4%) and unexplained factors (1.2%)

Conclusion: Uterine rupture remains a devastating obstetric calamity with a high incidence. Injudicious use of oxytocin, prolonged obstructed labour and previous caesarean section scar were the three leading predisposing factors identified in this study.

Keywords: Uterine rupture, obstetric tragedy, cases

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Received: May 28, 2022 *Accepted: January 7, 2023* *Published: April 17, 2023*

http://dx.doi.org/10.4314/rejhs.v11i1.7

Article Original

Research Journal of Health Sciences

Rupture utérine: une tragédie obstétricale toujours accompagnée; examen de six ans de cas dans un hôpital spécialisé, nord-ouest du Nigéria

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Résumé

Contexte général de l'étude : La rupture utérine est une cause majeure de morbidité et de mortalité périnatales et maternelles, elle a généralement une issue dévastatrice si elle n'est pas prise en charge rapidement.

Objectif de l'étude: L'étude a déterminé les tendances, les facteurs de risque, les résultats fœto - maternels suite à une rupture utérine tels qu'observés à l'ASYBSH.

Méthode de l'étude: - L'étude était une revue rétrospective des cas de rupture utérine pris en charge à l'ASYBSH entre mars 2015 et février 2021. Les dossiers du bloc opératoire et des salles de travail ont été fouillés et les dossiers des patientes avec rupture utérine ont été récupérés. Les informations pertinentes telles que les variables socio-démographiques, le statut de réservation, les présentations cliniques ont été récupérées et saisies dans un profoma structuré.

Résultat de l'étude: Les accouchements à l'hôpital au cours de la période ont été de onze mille quatre cent vingt (11 420), dont cent cinquante-six (156) ont été compliqués par une rupture utérine soit une incidence globale de 1,36 pour cent soit un sur soixante-dix -quatre (74) livraisons. La rupture utérine est survenue principalement chez les femmes de statut socio-économique bas et de parité élevée. Les principaux facteurs prédisposants étaient l'utilisation peu judicieuse d'ocytocine (62,8 %), une dystocie prolongée (19,8 %), une cicatrice de césarienne antérieure (8,5 %), l'utilisation de misoprostol (5,3 %), la pression fundique (2,4 %) et des facteurs inexpliqués (1,2 %)

Conclusion: La rupture utérine reste une calamité obstétricale dévastatrice avec une incidence élevée. L'utilisation peu judicieuse d'ocytocine, la dystocie prolongée et les cicatrices de césarienne antérieures étaient les trois principaux facteurs prédisposants identifiés dans cette étude.

Mots-clés : Rupture utérine, tragédie obstétricale, cas

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INTRODUCTION

Every year, worldwide, about 500,000 women die from complication of pregnancy, labour and puerperium, significant number of which occur in developing and less developed countries (1,2,3). Nigeria contributes only 2 percent of the world's population, but regrettably contributes about 10 percent of world's maternal mortality (3,5).Uterine rupture as one of the complication of pregnancy and labour contributes significantly to maternal and perinatal mortality (6). Uterine rupture remains a rare occurrence in developed countries, but the incidence continues to increase in Nigeria and other Sub-Saharan Africa countries as a result of prolonged obstructed labour and injudicious use of oxytocin.

Reported incidences are 1 in 106 Ilorin.(2) From Accra in Ghana, an incidence of 1 in 124 was reported while in developed countries, incidence of 1 in 1148 and 1 in 2250 deliveries were reported (3,5,6). The wide gaps above might not be unconnected with poor health infrastructures, level and motivation of health personals, poverty, illiteracy and poor health seeking behaviours in developing countries.(1,2,3) Uterine rupture is one of the devastating obstetric complications with enormous risk not only to the fetus but also the mother. Maternal and perinatal mortality in developing countries, Nigeria inclusive are mainly due to uterine rupture and other causes of post-partum hemorrhage (1,2,3). Uterine rupture not only causes maternal and /or fetal deaths, but can also lead to obstetric fistula, divorce psychological trauma, septicemia, severe anaemia, blood transfusion complications and other among uterine rupture survivors. There are varying risk factors predisposing to uterine rupture (7).

The incidence of uterine rupture in Nigeria is on the increase and health infrastructures remain abandoned coupled with the high rate of poverty in the country. In a previous study in Lagos uterine rupture was found to occur in about 5.38 per 1000 deliveries, with a perinatal mortality exceeding 90% and case fatality of about 30% (8). Other studies have consistently demonstrated a high incidence of perinatal mortality when uterine rupture is considered (9). Majority of cases of uterine rupture occur at term, with a spontaneous rupture being the commonest (10).

Some major risk factors for uterine rupture include injudicious use of uterotonics, uterine scars, prolonged obstructed labour, grandmultiparity, low socio-economic status, poor health seeking behaviours since many of these patients are unbooked, lack of skilled birth attendants at deliveries. (7,9,11,12,13,14,15).

MATERIALS AND METHODS

The study was conducted at the AYSBSH located in Gusau, the State Capital of Zamfara State; north-western Nigeria with a population of about 3 million people. The hospital is a 300 bed state owned health institution. It offers obstetric emergencies care facilities on 24-hour coverage. The hospital offers obstetric services to patients from Zamfara, Sokoto and Kastina states as well as Niger Republic.

This was a six-year retrospective review of all cases of uterine rupture seen between March 2015 and February 2021 at the Ahmad Sanni Yariman Bakura Specialist Hospital Gusau.

Ethical Approval was sought and clearance obtained. (Ref number-ASYBSH/SUB/232/Vol 1). Records of the theatre and labour wards were searched and the folders of patients with uterine rupture were retrieved. Relevant information such as socio-demographic variables, booking status, clinical presentations were retrieved and entered into a structured profoma.

Data obtained were entered and analyzed using SPSS software version 21.0 (SPSS, Chicago, IL USA). Descriptive statistics was obtained through frequencies and cross tabulations. Results were then presented using percentages, tables and charts.

RESULTS

During the study, there were 11,420 deliveries in the hospital out of which were 156 cases of uterine rupture giving an overall incidence of 1.36% or 1 in 74 deliveries. The yearly incidence as well as trends in the occurrence of uterine rupture is shown in figure 1.

The highest prevalence of uterine rupture was in 2019 (1.4%) and lowest prevalence was in 2015 (0.85%). Therefore, upward trends in the incidence of uterine rupture have been noted since inception of the hospital.

The mean age of patients was 30.7 years (SD ± 7.25). More than a third of the women 54(34.6%) were among the age group of 30-34 years as shown in table 1

Majority of the women were of high parity with 85 (54.5%) having a parity of four and above while 26 (16.7%) had parity of 2 or less as shown in table 2 below.

Majority of the women149 (95.5%) were

unbooked while only 7 (4.5%) were booked in the specialist hospital. A significant portion of the women 137 (87.8%) had no formal education while only 3 (1.9%) had tertiary form of education. Majority of the women 145 (93.0%) were housewives, 9 (5.8%) were trades while only 2 (1.2%) were civil servants. Among the seven (7) patients that booked at the specialist hospital only 2 (28.6%) of them received intrapartum care at the Centre while the remaining five (5) had unsupervised labour at home. Majority of the unbooked patients 137 (92.0%) were referred from primary health Centres and general hospitals while only 12 (8.0%) laboured at home with or without traditional birth attendants.

From the study, injudicious use of oxytocin was the commonest predisposing factors, occurring in 62.8% of cases of uterine rupture, followed by prolonged obstructed labour (19.8%) while previous caesarean section scar accounted for (5.3%), mainly in booked patients. Fundal press accounted for (2.4%) there was no identifiable risk factor among (1.2%) of the women.

Out of the 156 cases with uterine rupture, 151 of them had surgery while the remaining 5 patients died before any surgical intervention. 34 (22.5%) had repair only in view of low parity, while 37 (24.5%) had repair with bilateral tubal ligation. Majority of the patients 68 (45.0%) had subtotal Hysterectomy due to the extent of the rupture and high parity and completion of family size as shown in table 3. Thirty-one (31) maternal deaths were recorded representing maternal case fatality rate of 19.9%. All the women who died were unbooked and all had intrapartum care in places other than the specialist hospital

There were 152 perinatal deaths, giving a fetal case fatality rate of 97.4%. All the babies that survived were booked and had intrapartum care at the specialist hospital.

Majority of the maternal deaths 27 (77.4%) were due to hypovolemic shock as a result of massive blood loss, 5 patients (16.1%) had acute renal failure while 2 (6.5%) died from septicaemia.

DISCUSSION

One of the major causes of maternal and perinatal mortality in developing countries. (2,3). An incidence of 1 in 74 deliveries reported in this study is higher than previous studies in other northern parts of Nigeria (7,12) and significantly higher than incidence reported in Southern-Nigeria (4). The trend is similar in other African countries like Uganda, Namibia, Ethiopia and Burundi (4,5,6).

The yearly trend also shows that uterine rupture has been on the increase in the past 5 years in contrast from findings from developed countries where uterine rupture is a rare obstetric complication [6]. The significantly high incidence of uterine rupture recorded in this study may not be unconnected with the fact that the facility is a referral Centre for the 24 general hospitals, the over 30 primary health centres in the state as well as neighboring states.

The high rate of un-booked women in this study is similar to findings from other studies within and outside Nigeria; where high parity was found to contribute greatly to the incidenceof uterine rupture, (1,2,3,4), unlike findings in the other studies where low parity was observed(3,5).

Low socio-economic status and lack of formal education as factors indirectly predisposing to uterine rupture were observed in this study where 145 (93.0%) were housewives and 137 (87.8%) has no formal education, higher that values obtained from southern Nigeria (3,4,5).

Majority of the women had no formal education and as well belonged to the low socio-economic status which might have contributed significantly to the poor health seeking behaviours of the women.

Uterine rupture amongst paturients below Nineteen(19years) accounted for 5.2% of the cases identified in our study.

Injudicious use of oxytocin, prolonged obstructed labour and previous caesarean section in that order were the leading causes risk factors to ruptured uterus as (6,7.8.9), reported in previous studies. The limitation of knowledge and skills on use of oxytocin to high risk patients among health workers in the peripheral health centres could be demonstrated in this study.

The definitive treatment for uterine rupture remains surgical intervention. However, factors like clinical state of the patient, the extent to the rupture, fertility desirability and skill of the surgeon may determine the type of surgical intervention. From this study 47.0% had uterine repair with or without bilateral tubal ligation while 53% had their uterus removed in contrast to findings in southern Nigeria and Abuja where most patients had uterine repair only (1,2,3,4). This may also be due to the higher parity and extensive uterine ruptures identified in our study.

The case fatality rate found in this study is higher than findings from other studies from

north central and southern Nigeria (2,3,4,5). The higher case fatality rate might be due to low socio-economic status, illiteracy, poor health seeking behaviours, late presentation, inadequate blood bank system, poor health infrastructure and lack of skilled birth attendants at delivery.

Perinatal mortality rate was 97.4% in this study and comparable to reports from other parts of Nigeria, which might be due to late presentation, delayed diagnosis from referringentres, and transportation problems (11,12,13,14,15).

Pregnant women should be discouraged from having unsupervised home delivery in order to minimize risk of uterine rupture and other obstetric complications. Partograph usage should be encouraged for monitoring of labour in all tiers of health care delivery. Blood bank systems must be promoted in primary, secondary and tertiary health centres to improve access to blood transfusion in emergency circumstances.

CONCLUSION

Uterine rupture remains a devastating obstetric calamity and the incidence is on the increase as observed in this study and still associated with high maternal and perinatal mortality. Injudicious use of oxytocin, prolonged obstructed labour as well as pervious caesarean section scar are three leading predisposing factors to uterine rupture while late presentation, poor health infrastructures, poor blood bank system are contributing to high maternal and perinatal mortality. Therefore, advocacy and mass education on antennal booking and health seeking behaviours should be intensified. Government should improve both health infrastructures as well as motivating health workers in Nigeria.

Acknowledgement: This is to acknowledge the support received from the management of the hospital in carrying out this research as well as members of staff in the department of health information and maternity unit of the hospital.

Funding/Sponsorship: None

Conflict of interest: No conflict of interest.

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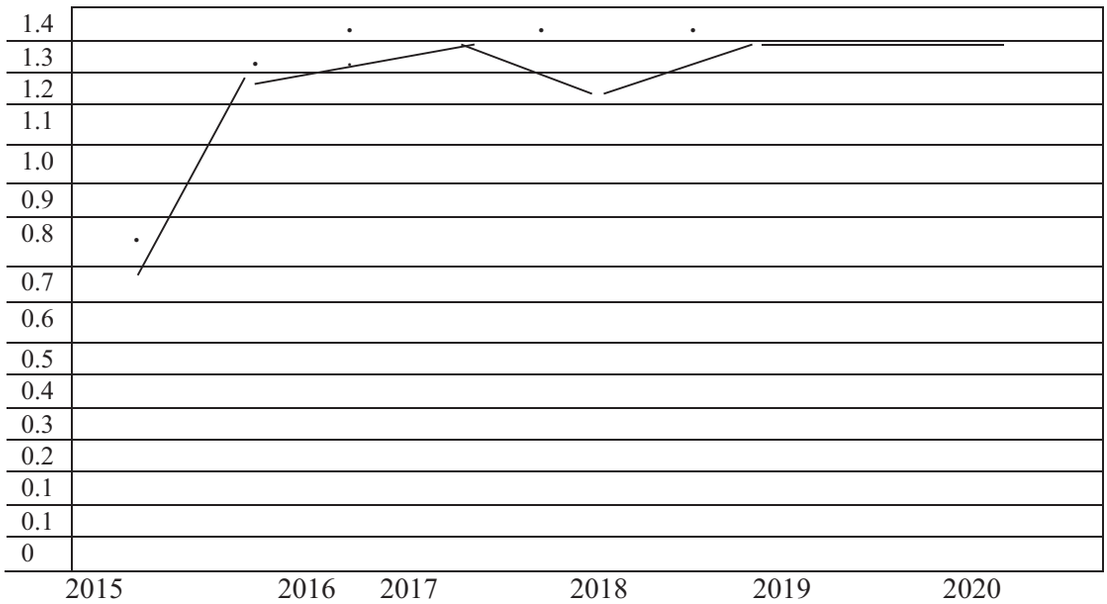

Figure 1: Trends in the annual Incidence of uterine rupture

Table 1: Age Distribution

Age	Number	Percentage
10-14	2	1.3
15-19	6	3.9
20-24	14	9.0
25-29	40	25.6
30-34	54	34.6
35-39	22	14.1
40-44	18	11.5

Table 2: Parity of women

Parity	Number	Percentage %
0	5	3.2
	8	5.1
1	13	8.3
2	17	10.9
3	28	17.9
4	39	25.0
=5	46	29.6

Table 3: Types and frequency of surgical procedures

Surgery	Number	%
Repair of ruptured uterus	34	22.5
Repair +Bilateral Tubal ligation	37	24.5
Subtotal abdominal Hysterectomy	68	45.0
Total abdominal Hysterectomy	12	8.0
Total	151	100