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# Uterine rupture in Sokoto, Northern Nigeria – are we winning?

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**Summary**
All cases of uterine rupture that were managed at the Usmanu Danfodiyo University Teaching Hospital Sokoto from January, 1995 to December, 1997 were reviewed and the findings compared with those of a previous study from the same institution, 10 years ago. Out of 3,106 deliveries within the study period there were 42 cases of ruptured uterus, giving an incidence of 1 in 74 deliveries which is similar to an incidence of 1 in 72 deliveries, a decade ago. Virtually all (41 cases) were illiterate and 93% had no antenatal care. Cephalopelvic disproportion, mal-presentation and previous uterine scar were common associated factors as in the previous study. Maternal mortality of 38% and fetal mortality of 98% did not differ significantly from the previous report. The significant changes over the last 10 years were the reduction in the number of booked patients with uterine rupture from 44 to 3 cases ($P < 0.05$) and the reduction in the number of rupture following obstetric trauma from 32 to just 1 case ($P < 0.05$). Because illiteracy and poverty are at the root cause, we have now decided to take our research findings directly to the community and religious leaders, hoping that in another 10 years we might see more positive changes.

**Keywords:** *Uterine, rupture, Northern Nigeria*

**Résumé**
Tous les cas de rupture de l'intérine qui ont été traitée dans le Centre Hospitalier de l'université Usman Danfodio, Sokoto entre fanvier 1995 et Décembre 1997 ont été revue et les résultats comparés á ceux d'une étude antérinre dans la méme institution il ya 10 ans. Sur les 3106 cas de maissance durant cette période, il ya en 42 cas de rupture, soit une proportion de 1 sur 74 maissances, ce qui est similance á 1 sur 72 naissance il ya dix ans. Virtuellement tons les cas (41 cas) étaient des illétrés et 93 n'avait anum suivi medical aprés naissance. La disproportion Céphalopelvique, manvaise présentation et les blessures antérieures de l'utérine étaient les facteurs commun associés tel que dans l'étude précédent. 38 de mortalisé maternelle et 98 de mortalité du foeturs n'etaient pas trés différent du derniér rapport. Le seul changement significantif des 10 dermiéres années était la réduction du nombre de rendez-vous des patients de 44 á 3 cas ($P <$ 0,05) et la réduction au nombre de rupture provemant du trauma obstérique de 32 á 1 cas juste ($P <$ 0,05). Parce que le manque d'éducation et la pauvreté sont la base, nons avons décidé de diriger les résultats de nos recherches directement á la communanté et les chef religieux, expérant que dans les 10 procharies années, nous verons des changement plus positifs.

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## Introduction

Rupture of the pregnant uterus is an obstetric emergency known for high feto-maternal mortality [1,2,3]. It is still a very common problem in developing countries where there are unfavourable socio-economic factors,poor transportation system, inadequate obstetric care, as well as the high frequency of home deliveries and grand multiparity [4,5].

The Usmanu Danfodiyo University Teaching Hospital, Sokoto, Northern Nigeria, is one of two tertiary, referral, public hospitals in Sokoto metropolis with a wide catchment area. Patronage may come from communities as far as 80 kilometers from the city. It may however take hours to arrive Sokoto town because of the poor transportation system. Services in the Teaching Hospital are not free but they are highly subsidized.

In this study, we investigated the frequency, possible etiological factors and feto-maternal outcome in cases of ruptured uterus and compared our findings with the results of a previous study from the same institution, a decade earlier. The question we intended to answer was: Are we winning the battle against ruptured uterus?

## Subjects and method

Between January, 1995 and December 1997, there were 42 cases of uterine rupture managed at the Usmanu Danfodiyo University Teaching Hospital, Sokoto. A pro-forma was filled for each case on admission and it included data on age, literacy status, parity, booking status, clinical presentation, etiological factors, operative findings, type of surgery and feto-maternal outcome.

The findings were compared with the results of a previous study (1985-1987). Findings were also subjected to statistical analysis using chi square test, where necessary. $P < 0.05$ was considered as statistically significant.

## Results

During the study period, there were 3,106 deliveries and 42 cases of uterine rupture giving an incidence of 1 per 74 deliveries.

**Table 1:** Bio-social characteristics

| | 1985-1987 | 1995-1997 |
|---|---|---|
| Author | Ghatak D. P. | Present Study |
| Total deliveries | 10,506 | 3,106 |
| Uterine rupture | 146 | 42 |
| Incidence | 1:72 | 1:74 |
| Age range | 15 - 45 years | 16 - 40 years |
| Modal parity | 6 | 7 |
| Literacy status | 100% were illiterate | 97% were illiterate |
| Antenatal booking status (of those with rupture) | 30% booked | 7% booked |

The number of booked patients that had ruptured uterus reduced significantly from 44 to 3 in the present study ($P < 0.05$).

**Table 2:** Type of rupture, likely causes, type of surgery and feto-maternal outcome in the two groups.

| Author | 1985-1987 Ghatak D.P | 1995-1997 Present work |
|---|---|---|
| *Type of rupture* | | |
| Spontaneous | (104) 71% | (37) 88% |
| Traumatic | (32) 23% | (1) 2% |
| Previous scar | (10) 6% | (4) 10% |
| *Causes* | | |
| CPD | (83) 57% | (26) 62% |
| Malpresentation | (25) 17% | (7) 17% |
| Vaginal stenosis/ *Fetal abnormalities* | (16) 11% | (3) 7% |
| Not stated | (22) 15% | (6) 14% |
| *Operation* | | |
| Hysterectomy | (110)75% | (21)50% |
| Repair + BTL | (14)10% | (10)24% |
| Died Before surgery | (22)15% | (11)26% |
| Maternal mortality | (68)47% | (16)38% |
| Fetal mortality | (136)93% | (41)98% |

*Figures in parenthesis are actual number of cases.*

As shown in Table 2 traumatic rupture from syntocinon and obstetric manipulations reduced significantly from 23% previously reported to 7% in the present study ($P < 0.05$)

**Discussion**

An incidence of 1 in 74 deliveries for uterine rupture is perhaps one of the highest in world literature. Ghatak [6] had reported 1 in 72 deliveries from the same institution, while 1 in 93 deliveries had been reported from Uganda [7]. Recent figures of 1 in 167 deliveries [8] and 1 in 200 deliveries [9], reported from southern parts of Nigeria are still higher than the very low rates reported from the developed, western world [10,11]. Some of the reasons advanced for the very high rates from the underdeveloped countries are unyielding cultural and traditional beliefs, ignorance and inability to pay for services [4], which are also relevant in this series.

There was a sharp drop in the total delivery from the previous 10,506 to 3,106 because of the introduction of antenatal and delivery fees. It has been shown that even a slight increase in these fees can significantly affect the number of clientele [12]. Therefore, it could be argued that many of the "normal" women elected home delivery to avoid payments while those with complications like ruptured uterus had to eventually come to the hospital to seek assistance. This may partly account for the high rate of uterine rupture in the institution in the present review.

Worthy of note, is the significant reduction in the percentage of patients who booked for antenatal care that had uterine rupture, from 30% previously reported to 7% in the present review ($P < 0.05$). It is possible if not probable, that more of the booked patients are putting to practice lessons or instructions learnt during the health education sessions of antenatal clinics.

Spontaneous rupture of the unscarred uterus occurred in 88% of the cases due to cephalopelvic disproportion. Similar findings were reported by Faleyimu and Makinde [13]. The very high modal parity of 7, would have contributed to such spontaneous accidents. Obstetric trauma occurred in only one case (2%) which is significantly lower ($P < 0.05$) than the 32 cases (23%) earlier reported from the same institution [6]. This may be attributable to better supervision and monitoring of the parturient, as more skilled personnel joined the unit. Similar trend was reported by Ken et al. [14].

Hysterectomy still remains the operation of choice because of the type of injury encountered coupled with infected tissues. About 50% of those that had surgery benefitted from hysterectomy. This figure is higher than 30% and 28.8% reported from Ilorin and Lagos, respectively [4,9]. We did not find a poorer maternal outcome in those women that had hysterectomy as reported by Aboyeji [4] we would rather subscribe to the counsel of Ghatak [6] that if the infected and torn uterus is removed, the postoperative morbidity will be less. In this series, there were 13 cases of subtotal and 8 of total hysterectomies.

The overall maternal mortality was 38% with one-third of the deaths occurring before surgery because the patients were either brought in extremis (gasping) or there were delays in getting blood donors to combat hypovolaemic shock. Even when the Hospital authority exempts pauper patients from paying for the cost of investigations and surgery, some patients still do not have fit relations to donate blood neither do they have the wherewithal to patronize the commercial blood donors. Herein, lies the tragedy of poverty.

The type of uterine rupture in our centre is such that it will it be unwise to commence surgery without blood while autotransfusion of blood admixed with infected liquor is inadvisable. The good old days when volunteers donated blood, free to blood banks are gone in many centres like ours. It is thus cheaper to prevent uterine rupture than to treat the condition.

In conclusion, we are not winning the battle against ruptured uterus in our centre yet. It is a common obstetric emergency and also a leading cause of maternal mortality [15]. Because not much has changed over the last decade, we have decided to take our findings directly to the community and religious leaders, hoping that there would be positive changes as we enter the new millennium.

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