ORIGINAL ARTICLE

A Comparison Of Booked And Unbooked Patients With Ruptured Uterus In A Referral Hospital In The Niger Delta Region Of Nigeria.

[1]P. I. OKONTA, *FWACS, FMCOG,* [2]G. O. Igberase, *FWACS, FMCOG.*

[1]Department of Obstetrics and Gynecology, College of Health Sciences, Delta State University, Abraka, Nigeria

[2]*Department of Obstetrics and Gynecology, Baptist Medical Centre, Eku, Delta state.*

Abstract

Objective: *To document differences in characteristics and outcome between booked and unbooked patients with ruptured uterus*

Methods: *A 10 year retrospective comparative analysis of booked and unbooked patients with ruptured uterus at the Baptist medical center, Eku, Delta State.*

Results: *The overall incidence of ruptured uterus was 1 in 271 deliveries while the incidence among booked and unbooked patients was 1 in 556 and 1 in 140 respectively. There were a statistically significant difference in number of booked patients with formal education beyond the primary level compared with the unbooked patients (p =0.0206; 95%CI 1.92-14.79). A higher proportion of booked patients with ruptured uterus had history of previous uterine scar. All the three maternal deaths occured in the unbooked patients. The overall case fatality rate for ruptured uterus was 23% or 1 in 4.3.*

Conclusion: *Booked and unbooked patients with ruptured uterus have different characteristics and outcome. Subsequent studies on ruptured uterus should disaggregate their data according to the booking category of the patients. This will assist in making effective intervention plans that will impact both groups.*

KEY WORDS: *Ruptured uterus, booking status, Niger Delta region.*

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INTRODUCTION

Ruptured uterus continues to be a tragic feature of obstetric practice in the developing countries [1-4]. Lack of access to emergency obstetric care facilities and low utilization of modern maternity services are identified causes for the higher incidence of ruptured uterus in developing countries than in developed countries[1]. Most reports have identified being "unbooked" for antenatal care as a risk factor for ruptured uterus. [1,2,5]

However, some of these reports have also observed that booked patients have contributed to about 30% - 40% of cases of ruptured uterus[1,3,4.] With such a significant proportion of ruptured uterus being contributed by booked patients it may appear that being booked for antenatal care alone has not yielded significant protection against the occurrence of ruptured uterus.

Against this backdrop, we decided to review all cases of ruptured uterus in our centre from January 1994 to December 2003. Specifically, we sought out to compare the maternal and fetal outcome between booked and unbooked patients who had ruptured uterus. We intend to document differences in characteristics and outcome between the two groups of patients with ruptured uterus. Such documentation will assist in planning interventions that will reduce the incidence of ruptured uterus in the booked and the unbooked patients.

MATERIALS AND METHOD

This study was done at the Baptist medical centre, Eku, Delta State, a mission hospital situated in a rural community. It has served as a major referral hospital in the Niger Delta for over 50 years. It provides specialist out- patient and in- patient medical care in Obstetrics and Gynaecology, and other specialties and also accepts referrals from private clinics, maternities and traditional birth attendants [6.]

The names and hospital numbers of all cases of ruptured uterus in the hospital from January 1994 to December 2003 were obtained from the labour ward and operating theatre registers. The case notes were subsequently retrieved from the medical records department and relevant information extracted. The labour ward register also provided information on the total number of deliveries. All the unbooked cases had their intrapartum care outside the hospital, while 4 out of the 6 booked cases had theirs outside the hospital.

Information generated was fed into the computer and data analysis was done using the Epi Info version 2000 statistical package. The test for statistical significance was done using the student t-test for continuous variables and fisher exact test for categorical variables. A p- value less than 0.05 was accepted as being significant.

Correspondence: **Patrick I Okonta,** *E Mail- patrickokonta@yahoo.com*

RESULTS

Incidence

During the period January 1993 to December 2003 there were a total of 19 cases of ruptured uterus out of 5153 deliveries, giving an incidence of 1 in 271 deliveries. Thirteen (68.4%) out of the 19 cases of ruptured uterus occurred in unbooked patients while 6 (31.6%) occurred in booked patients. The incidence of ruptured uterus in booked patients was 1 in 556 as against 1 in 140 in unbooked patients. This difference was statistically significant (p = 0.0053).

Patient characteristics

There was no significant difference in the mean age and parity of the booked and unbooked patients that had ruptured uterus (Table I). All 6 booked patients had formal education beyond the primary level with 50% of them educated up to the tertiary level. On the other hand only 23.8% of the unbooked patients had formal education beyond the primary level (Table I). This was statistically significant, (p= 0.0206; 95% CI 1.92 -14.79 ; RR 5.3)

TABLE I: Patient characteristics

Patient characteristics	Booked patients	Unbooked patients	P value
Mean Age	27.7 ± 3.4	28.5 ± 6.5	P = 0.7649
Parity	1.8 ± 1.3	3.3 ± 2.1	P = 0.1409
Education			
None	Nil	2 (15.4%)	P = 0.0206
Primary	Nil	8 (61.5%)	(95% CI, 1.92 -14.79)
Secondary	3 (50%)	3 (23.1%)	RR 5.33
Tertiary	3 (50%)	Nil	

Associated risk factors

Five (83.3%) out of the 6 booked patients had a previous uterine scar while only 6 (46.2%) of the 13 unbooked patients had a previous uterine scar. Almost all the previous scars were caesarean section scars. About 17% and 15% of the booked and unbooked patients respectively have had 2 previous caesarean sections. The history of previous uterine scar was not statistically different in both groups. There was also no statistically significant difference in the history of prolonged labour and use of oxytocics in index labour (Table II)

TABLE II: Obstetric risk factors

Risk factor	Booked patients	Unbooked patients	P value
Previous uterine scar	5 (83.3%)	6 (46.2%)	P= 0.1533
Prolonged labour	3 (50%)	9 (69.2%)	P= 0.6169
Use of oxytocin	4 (30.8%)	2 (33.3%)	P= 0.6521

Type of uterine rupture

Four (66.7%) of the booked patients had rupture along the previous lower segment caesarean section scar. Fifty percent of these rupture were complete while the other 50% were incomplete scar rupture. The remaining 2 (33.3%) booked patient had tears on the lateral part of the anterior uterine wall. There was no associated bladder rupture among booked cases.

In the unbooked patients 8 (61.5%) had transverse lower segment rupture (6 in a previous caesarean section scar and 2 in an unscarred uterus). Two patients (15.4%) had tears on the lateral part of the anterior wall, while 3 (23.1%) patients had posterior midline rupture.

Maternal and fetal outcome

No booked patient with uterine rupture had her reproductive career terminated as a result of the surgery, unlike in unbooked patients where 7 (53.8%) had either a hysterectomy or repair of uterine rupture and bilateral tubal ligation (Table III). The amount of blood transfused to the patients is also shown in Table III. There were 11 (84.6%) fetal deaths in the unbooked patients while booked patients had 4 (66.7%) fetal deaths. There was no maternal death among the booked patients however the unbooked patients recorded 3 (23.1%) deaths. These differences did not reach statistical significance (Table III). The case fatality for ruptured uterus in the unbooked was 23% or 1 in 4.3

TABLE III: Fetal and maternal outcome

	Booked patients	Unbooked patients	
Type of Surgery			
Hysterectomy	Nil	3 (23.1%)	
Repair + BTL	Nil	4 (30.8%)	
Repair only	6 (100%)	6 (46.2%)	
Blood transfusion			
0	Nil	2 (15.4%)	
1 pint	5 (83.3%)	3 (23.1%)	
2 pints	Nil	6 (44.2%)	
3 pints	1 (16.7%)	Nil	
4 pints	Nil	2 (15.4%)	
Fetal outcome			
Still births	4 (66.7%)	11 (84.6%)	P=0.5573
Maternal deaths	Nil	3 (23.1%)	P=0.5170

DISCUSSION

The overall incidence of ruptured uterus in this study was 1 in 271 deliveries. This figure is lower that several reports from other parts of Nigeria. Such reports have ranged between 1 in 74 and 1 in 210 [3,-5, 7, 8.] However, our figure is higher than the 1 in 273 [2] and 1 in 426 [1] recorded in some other Nigerian studies. The significantly lower incidence of 1 in 556 in booked patients clearly demonstrates that being unbooked for antenatal care is associated with a higher risk for ruptured uterus.

Previous reports on ruptured uterus in Nigeria identified illiteracy, low socio-economic class and higher parity as risk factors for ruptured uterus [1,7,9]. Our study, however, shows that these factors are more associated with unbooked patients who invariably constitute a higher proportion of all cases of ruptured uterus. Comparative analysis showed that the booked patient with ruptured uterus has a significantly higher level of education and their parity is lower, although this did not reach statistically significant level.

The contribution of a previous uterine scar (mainly caesarean section) as a probable predisposing factor for uterine rupture found in our study was more with booked patients than with unbooked patients, 83.3% and 46.2% respectively. It appears that the booked patient with ruptured uterus and the unbooked patient with ruptured uterus may not represent a homogenous group after all.

This fact becomes more apparent considering that both groups had a somewhat different outcome. All the maternal deaths occurred in unbooked patients; no booked patient had her reproductive prospects prematurely terminated by virtue of the type of surgery. The fetal outcome was better in booked patients than in unbooked patients as there were 4 (66.7%) and eleven (84.6%) fetal deaths in the booked and unbooked patients respectively.

Admittedly some of these differences observed between the booked and unbooked patients did not reach statistically significant levels. However, it is the authors' belief that this is as a result of the small numbers involved rather than the absence of a true difference. We intend to continue updating our data and to present a larger series in future.

The findings in this study have significant implications in the effort to reduce the incidence of ruptured uterus in Nigeria. Past recommendations towards this goal have been largely influenced by the characteristics of the unbooked patients who form the majority of cases of ruptured uterus. However booked patients constitute over 30% of cases of ruptured uterus. They have made contact with the health care provider in the course of their pregnancy. They represent a different obstetric population. We suggest that subsequent studies on ruptured uterus should disaggregate their data based on the booking status of the patients. It is only by taking this into cognizance can we plan effective interventions

that will impact both groups. Also such analysis would help in evaluating progress of interventions in both groups.

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