



Socio-Demographic Profile and Complications of Patients with Retained Placenta in a Tertiary Centre, South-South Nigeria

Christopher U. Iklaki, Cajethan I. Emechebe*, Charles O. Njoku, Boniface U. Ago, Brown S. Ugwu

Department of Obstetrics and Gynaecology, University of Calabar Teaching Hospital (UCTH), Calabar, Nigeria
Email: *Newlifecj@yahoo.com

Received 11 January 2016; accepted 26 January 2016; published 29 January 2016

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Abstract

Retained placenta is a life threatening emergency and a major cause of primary postpartum haemorrhage and maternal morbidity in the developing world. **Objectives:** To determine the socio-demographic characteristics and complications in patients presenting with retained placenta in this centre. **Materials and Method:** This was a retrospective study of all cases of retained placenta managed at the UCTH from January 1st 2008 to December 31st 2012. The case records of these patients were retrieved and analysed using Epi info 3.3.2. **Results:** There were 138 patients with retained placenta during the period, giving an incidence of 1.02%. The mean age was 27.7 ± 4.6 years with a range of 17 - 41 years. Majority of the cases of retained placenta occurred in the age group of 26 - 30 years (37%); para 4 (36.1%); traders (48.7%) and unbooked (68.1%). Most patients delivered outside the hospital by unskilled birth attendants at churches, traditional birth attendants and patient's home (69.0%). Eleven (9.2%) patients had previous caesarean sections while 7 (5.9%) had placenta retention in the past. The complications observed were mostly primary postpartum haemorrhage 67 (56.3%) and anaemia 79 (66.4). Unbooked patients significantly had more primary postpartum haemorrhage (P-value = 0.0325) and anaemia (P-value = 0.0000) than the booked patients. Nineteen (16.0%) patients presented in shock out of which 1 died due to severe haemorrhagic shock, giving a case fatality rate of 0.8%. **Conclusion:** Poorly managed labour and delivery is the major cause of retained placenta. Therefore, supervised hospital delivery is paramount to reduce the observed complications.

Keywords

Retained Placenta, Anaemia, Postpartum Haemorrhage, Maternal Morbidity, Caesarean Section

Subject Areas: Gynecology & Obstetrics

*Corresponding author.

1. Introduction

Retained placenta is a life-threatening condition and a major cause of postpartum haemorrhage (PPH), hence a significant factor in maternal morbidity and mortality [1]-[4]. It is generally defined as failure of delivery of the placenta within 30 minutes after childbirth [3] [6], however, some authorities accept a time limit of 60 minutes [4]. With the traditional or expectant management, the placenta usually delivers within 10 - 20 minutes, while with active management; it is commonly delivered within 5 - 10 minutes [4]. Generally, 90% of placenta will be delivered within 15 minutes, and 96% within 30 minutes [4].

Retained placenta affects between 0.5% - 3.3% of women following normal vaginal deliveries depending on the population studied [1] [3]. There is considerable variation in the retained placenta rates between countries. The overall risk in the general population has been estimated to be about 2.1 % and where this had occurred before, the risk of repetition is said to be 2 - 4 times the risk of those patients without any such previous history [5] [6]. The difference in prevalence is related to the differences in aetiological factors for a prolonged third stage of labour [3].

A common cause of retained placenta is the poor management of third stage of labour [2] [4]. Various risk factors predispose to retained placenta and some of these factors independently affect the third stage of labour. They include multiparity, augmentation of labour with oxytocics, uterine inertia/atony, uterine fibroids and home delivery [7].

Other risk factors that have also been suggested to predispose to retained placenta include induction of labour, prolonged labour, preterm deliveries, previous placental retention, previous dilatation and curettage, previous caesarean section and morbidly adherent placenta [6] [8]-[11].

The gold standard of management of retained placenta is adequate emergency resuscitation and manual removal under anaesthesia to avoid postpartum haemorrhage. Alternative strategies include the use of uterotonic drugs plus controlled cord traction and the use of umbilical vein injection of saline solution plus oxytocin [12] [13]. The non-surgical strategies are very useful especially in rural areas where facilities and skills for manual removal are lacking.

Majority of cases are treated by manual removal under general anaesthesia [3]-[5] [11]. The timing of the procedure depends on the availability of safe anaesthesia and also on the presence or absence of haemorrhage. The time allowed to elapse varies, and many authorities suggest a delay of 30 - 60 minutes in the absence of haemorrhage. This is because there is no increase in haemorrhage until at least 30 minutes post-partum and because of the finding that between 30 and 60 minutes a further 40% of placentas will spontaneously deliver with the loss of an average of only 300 ml of blood [12] [14].

Regarding the morbidities of retained placenta, haemorrhage, anaemia and hypovolaemic shock are common occurrences [13]. Other complications are acute renal injury, anaesthetic complications, genital tract laceration, hysterectomy, uterine inversion, uterine sub-involution, puerperal sepsis following manual removal and maternal death. Coagulation disorders with massive blood loss are lethal factors in this condition [13] [15] [16].

The most important prophylactic measure to prevent retained placenta is the active management of the third stage of labour [3] [16] [17].

There was a need to identify the risk factors of retained placenta and mode of presentation prevalent in our area with a view to making recommendations on the measures to reduce the incidence and associated complications. This study was therefore aimed to evaluate the socio-demographic characteristics and complications in patients presenting with retained placenta in our centre.

2. Materials and Methods

This is a retrospective cross-sectional study of all patients with retained placenta seen at the University of Calabar Teaching Hospital over a period of 5 years spanning from January 1st 2008 to December 31st 2012. The University of Calabar Teaching Hospital is a tertiary health care institution in Calabar Cross-River State, South-south geopolitical zone of Nigeria, with referrals of patients from primary and secondary health care facilities, private hospitals and maternity homes. Some other group of patients are from traditional birth attendant homes and churches where deliveries are conducted. The research protocol fulfilled the criteria for approval by the research ethics committee of the hospital. The case notes of the patients were retrieved from the Medical Records Department of the hospital and relevant data obtained from them. The labour ward and theatre records were also retrieved and analysed. Out of 138 cases of retained placenta, 119 case files were available and were used for

analysis. The derived data were analyzed using Epi-info 3.3.2 statistical package and represented by simple percentages and descriptive statistics. A p-value of <0.05 at 95% level of significance was considered statistically significant.

3. Results

A total of 138 cases of retained placenta were managed at the maternity unit of the University of Calabar Teaching Hospital over the study period of 5 years. During this period, a total of 13,557 deliveries were recorded giving an incidence of 1.02% of total delivery.

Table 1 shows the socio-demographic characteristics of the patients. The mean age was 27.7 ± 4.6 years with a range of 17 - 41 years. Majority of the cases of retained placenta occurred in the age group of 26 - 30 years (37%); para 4 (36.1%); traders (48.7%) and unbooked patients (68.1%). The age range of 21 - 35 constitutes 102 (85.7%). The parity of the patients prior to delivery was between 0 and 7. The third, fourth and grandmultiparous patients made up the majority of cases (75.6%), accounting respectively for 15 (12.6%), 43 (36.1%) and 32 (26.9%) cases. A total of 52 (43.70%) of the patients had secondary education while 43 (33.62%) had primary levels of education. Eleven (9.24%) of the patients did not have any formal education. Eighty one (68.1%) of the patients were unbooked for antenatal care while booked patients accounted for 31.9% of all the cases.

Table 2 shows that majority of the patients who had retained placenta delivered outside our hospital and only presented with the complications of retained placenta. Fifty six (38.7%) patients delivered in churches, 27 (22.7%) delivered at the traditional birth attendants' places, 9 (7.6%) delivered at their respective homes while only 29 (24.4%) of the cases delivered in the labour ward of our Hospital over the study period.

Table 1. Socio-demographic characteristics of patients with retained placenta.

DISTRIBUTION	FREQUENCY	PERCENTAGE (%)	CUMMULATIVE PERCENTAGE
AGE (YEARS)			
≤20	10	8.4	8.4
21 - 25	32	26.9	35.3
26 - 30	44	37.0	72.3
31 - 35	26	21.8	94.1
36 - 40	5	4.2	98.3
>40	2	1.7	100.0
PARITY			
0	14	11.8	11.8
1	10	8.4	20.2
2	5	4.2	24.4
3	15	12.6	37.0
4	43	36.1	73.1
≥5	32	26.9	100.0
OCCUPATION			
Traders	58	48.7	48.7
House Wives	18	15.1	63.8
Farmers	16	13.5	77.3
Civil Servants	14	11.8	89.1
Students	11	9.2	98.3
Unspecified	2	1.7	100.0
EDUCATIONAL STATUS			
None	11	9.2	9.2
Primary	43	36.1	45.3
Secondary	52	43.7	89.0
Tertiary	13	10.9	100.0
BOOKING STATUS			
Booked	38	31.9	31.9
Unbooked	81	68.1	100.0

The relevant clinical features at presentation and risk factors for retained placenta are shown in **Table 3**. Among the patients who had active vaginal bleeding from retained placenta, unbooked patient (38.3%) significantly had active bleeding than booked patient (15.8%) over the study period ($X^2 = 4.377$; P-value = 0.0364). Hypovolemic shock was significantly more among unbooked patients than the booked ($X^2 = 7.3988$; P-value = 0.0065). All booked patient who delivered in the hospital and had retained placenta received prophylactic oxytocics while only 21 (25.9%) of unbooked who delivered outside UCTH were given prophylactic oxytocics during the third stage of labour. A total of 9 (7.6%) of the patients with retain placenta had induction of labour, 47 (39.5%) had prolonged labour that lasted more than 12 hours and 11 (9.2%) of the patients had previous caesarean sections. Prolonged labour as a risk factor for retained placenta was significantly higher among unbooked-women than the booked patients ($X^2 = 16.2058$; P-value = 0.0001).

The complications observed were mostly primary postpartum haemorrhage 67 (56.3%) and anaemia 79 (66.4) as shown in **Table 4**. Unbooked patients significantly had more primary postpartum haemorrhage ($X^2 = 4.574$; P-value = 0.0325) and anaemia ($X^2 = 21.838$; P-value = 0.0000) than the booked patients. Haemorrhage was severe enough to result in shock in 19 (16.0%) of cases, out of which one women died due to severe haemorrhagic shock resulting in a case fatality rate of 0.8%. A total of 23 (19.3%) patients stayed for at least 5 days on admission because of the associated complications they were being managed for. Other complications observed in the study included puerperal sepsis 17 (14.3) and a case of acute renal injury (0.8%), who subsequently had dialysis at the dialysis unit of the hospital.

4. Discussion

The incidence of retained placenta of 1.02% in this study is within the reported incidence of 0.5% - 3.0% by

Table 2. Distribution of place of delivery of patients with retained placenta.

PLACE OF DELIVERY	FREQUENCY	PERCENTAGE (%)
Home	9	7.6
Church	46	38.7
Primary Health Care	4	3.4
Maternity Home	4	3.4
Traditional Birth Attendant Place	27	22.7
UCTH (Labour ward)	29	24.4
TOTAL	119	100

Table 3. Clinical features and risk factors.

CLINICAL PRESENTATION	TOTAL (%)	BOOKED NUMBER (%)	UNBOOKED NUMBER (%)	X ²	P-VALUE
Active bleeding	37 (31.1)	6 (15.8)	31 (38.3)	4.377	0.0364
Snapped cord	21 (17.7)	5 (13.2)	16 (19.8)	0.774	0.5789
Shock	19 (16.0)	1 (2.6)	18 (22.2)	7.3988	0.0065
Bulky atonic uterus	23 (19.3)	7 (18.4)	16 (19.8)	0.0294	0.8638
Prophylactic oxytocin given	48 (40.3)	27 (71.1)	21 (25.9)	26.958	0.0000
RISK FACTORS					
Induction of labour	9 (10.9)	9 (23.7)	-	-	-
Prolonged labour	47 (39.5)	5 (13.2)	42 (51.9)	16.2058	0.0001
Previous caesarean section	11 (9.2)	8 (21.1)	3 (3.7)	9.2799	0.0023
Previous myomectomy	4 (3.4)	3 (7.9)	1 (1.2)	3.532	0.0602
History of induced abortion	68 (57.2)	21 (55.3)	47 (58.0)	0.0805	0.7766
Uterine fibroid in pregnancy	6 (5.0)	2 (5.3)	4 (4.9)	0.0057	0.9398
Preterm (GA less than 37 weeks)	11 (9.2)	5 (13.2)	6 (7.4)	1.0195	0.3126
Placenta accreta	1 (0.8)	0 (0.00)	1 (1.2)	0.473	0.4916
Previous retained placenta	7 (5.9)	4 (10.5)	3 (3.7)	2.1747	0.1403

Table 4. Complications of retained placenta.

COMPLICATIONS	TOTAL (%)	BOOKED (38) Number (%)	UNBOOKED (81) Number (%)	X ²	P-VALUE
Primary postpartum haemorrhage	67 (56.3)	16 (42.1)	51 (63.0)	4.574	0.0325
Anaemia (haematocrit < 30 %)	79 (66.4)	14 (36.4)	65 (80.3)	21.838	0.0000
• Severe (≤18%)	11 (9.2)	0 (0.00)	11 (13.6)	5.6861	0.0171
• Moderate (19% - 26%)	27 (22.7)	3 (7.9)	24 (29.6)	0.9659	0.0083
• Mild (27% - <30%)	41 (34.5)	11 (28.9)	30 (37.0)	0.7495	0.3866
Hypovolemic shock	19 (16.0)	1 (2.6)	18 (22.2)	7.3988	0.0065
Puerperal sepsis/Endometritis	17 (14.3)	2 (5.3)	15 (18.5)	3.7115	0.0540
Acute renal failure	1 (0.8)	0 (0.00)	1 (1.2)	0.4731	0.4916
Maternal mortality	1 (0.8)	0 (0.00)	1 (1.2)	0.4731	0.4916
Secondary postpartum haemorrhage	16 (13.5)	2 (5.3)	14 (17.3)	3.2116	0.0731
Prolonged hospital stay (≥5days)	23 (19.3)	4 (10.5)	19 (23.5)	2.7736	0.0958

several authors in most hospitals in Nigeria and elsewhere [1] [6]-[9]. An incidence of 0.8% was reported in Jos North-Central Nigeria [18], while a relatively lower incidence of 0.6% was reported in Saudi Arabia [8]. This slight difference may be due to the difference in the number of unbooked pregnant women who delivered outside the hospital unsupervised and subsequently present to the hospital with complications of retained placenta. The incidence is likely to be lower in areas where pregnant women utilised the available antenatal care facilities and subsequently had skilled care in labour.

There was a preponderance of retained placenta among patients within the age range of 21 - 35 years who constituted 85.7% of the patients. Similarly, high figures of 76.9%, 71.2% and 89.1% were recorded for the same age range of 21 - 35 years in Thailand [15], Saudi Arabia [8] and Nigeria [16] respectively. This relationship to age may be a reflection of the reproductive age group of the study population [19]. The age group of 21 - 35 years is in fact the peak age of child bearing when most women are likely to be pregnant and deliver and hence, the observed finding.

A greater percentage of the patients in this study (75.6%) were of parities 3 and above. This is congruent with figures of studies from Jos [18] and Ile Ife, Nigeria [6]. Repeated pregnancy and delivery is a risk factor implicated in retained placenta [20]. The reason is due to increased fibrous tissues from repeated deliveries which reduces the contractile power of the uterus and this may lead to uterine atony and therefore placental retention. In Nigeria with heterogeneous population and low utilisation of contraceptive [21], the problem of high parity still exists. This finding in multiparous women in our environment coupled with unbooked status may have increased the incidence of retained placenta in this study.

Majority of the patients with retained placenta were of low educational status as only 10.9% had tertiary education while 36.1% had primary education and 9.2% have no formal education. This finding is comparable to the report in Ibadan where only 17% of the patients in that study had tertiary education [9]. This is a clear reflection of low educational background among majority of the patients with retained placenta. This observation is not unusual as formal education is likely to enhance women knowledge, attitude and practice toward utilisation of health care facility during pregnancy and delivery with subsequent reduction in pregnancy complications.

Majority of the patients (68.1%) were unbooked for antenatal care. This is similar to the study in Ibadan where 62.2% of the study population were unbooked for antenatal care [9]. In most sub-Saharan African countries, utilization of antenatal care is still low and unbooked patients are more likely to be supervised by unskilled birth attendants and hence at risk of delayed or poor management of the third stage of labour [6]. A Nigerian study carried out in Ile Ife also demonstrated that non-booking for antenatal care constitutes an approximately 23 fold increase in the risk of retained placenta [6]. Majority of the patients delivered outside the hospital while only 24.4% of the cases delivered in the labour ward of our hospital. Most of the patients delivered in churches (38.7%), traditional birth attendants' places (22.7%). These unskilled birth attendants usually manage the third stage of labour wrongly and usually do not refer these cases at the appropriate time until serious complications arise.

Induction of labour contributed 10.9% of cases of retained placenta in this study. Induction of labour contributed 10.3% to the incidence of retained placenta in a Saudi Arabian study [22]. Placental retention may be the

result of uterine atony caused by uterine muscle exhaustion sometimes encountered in cases of induced and oxytocin-augmented labours [23].

Sixty eight (57.2%) patients had previous dilatation and curettage, 9.2% of the patients had previous caesarean sections while 3.4% patients had a previous myomectomy. Caesarean section, dilatation and curettage and myomectomy for uterine fibroids are procedures which can inadvertently cause endometrial injury facilitating the infiltration of the uterine muscles by the chorionic villi due to deficient or damaged endometrium at such site. This may account for placenta accreta often encountered in cases of retained placenta as was recorded in this study where 0.8% of placenta accrete was observed.

The major complication in this study was primary postpartum haemorrhage, which occurred in 56.3% of the cases. It was also a common complication observed in studies in developing countries [6] [7] [9]. A lower incidence was observed in a similar study in Aberdeen, where postpartum haemorrhage was reported in 21.3% of women with retained placenta [24]. This disparity may be due to the relatively higher rate of out-of-hospital deliveries and unbooked pregnancy in developing countries [19]. The common clinical features observed in this study were active vaginal bleeding, anaemia and shock. Seventy nine (66.4%) of patients in this study were anaemic with packed cell volumes of less than 30%. Haemorrhage was severe enough to warrant blood transfusion in 33 (27.7%) of patients in the study population. This finding is similar to some studies in Nigeria [9] [16] [18]. However, only 10% of the retained placenta group in a large Norwegian cohort study were transfused [25]. This may be due to the relatively higher number of hospital deliveries in the developed countries, with timely intervention that reduces the risk of primary postpartum haemorrhage and hence a huge reduction in the need for blood transfusion.

One patient died of severe haemorrhagic shock resulting in a case fatality rate of 0.8%. The patient was an unbooked woman who presented in a state of irreversible shock secondary to massive haemorrhage following unsupervised home delivery. Two cases of maternal mortalities were recorded in similar studies in Ibadan resulting in case fatalities of 2.2% [9]. The patients were unbooked, and died from severe haemorrhagic shock following home deliveries. The mortality rate in this study was lower than the outcome in a study carried out in Zaria, Nigeria, where the mortality was 3% amongst 894 women treated for retained placenta [26].

5. Conclusion

Retained placenta still remains a potentially life-threatening condition and one of the major obstetric problems in our environment. Our study revealed that the majority of the cases of retained placenta occurred in the age group of 26 - 30 years; para 4 and unbooked. Most patients delivered outside the hospital attended by unskilled birth attendants. The common risk factors observed were previous history of induced abortion, prolonged labour, induction of labour, preterm delivery and previous caesarean sections. The common complications were high rate of postpartum haemorrhage, anaemia with multiple blood transfusion and puerperal infections, which are also the significant factors responsible for high maternal morbidity and mortality in developing country. Therefore, improvements in the quality of obstetric care available in our country and the utilization by our pregnant women, through enhanced education, booking for antenatal care and economic empowerment of women will go a long way in reducing the complications in our society. Skilled care in labour and provision of emergency obstetric care services that are accessible and affordable will help a lot in reducing the incidence of retained placenta and the observed complications.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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