

Correlates of Retained Placenta at a Rural Tertiary Hospital in South Western Nigeria

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How to cite this paper: Adeniyi, A.A., Adebisi, M.O., Bakare, A., Adeyemo, O.T., Afolabi, O.B., Aderukuola, B., Adekanye, E.A. and Amerijoye, A.M. (2024) Correlates of Retained Placenta at a Rural Tertiary Hospital in South Western Nigeria. *Open Journal of Obstetrics and Gynecology*, **14**, 1896-1904.
<https://doi.org/10.4236/ojog.2024.1412157>

Received: November 15, 2024

Accepted: December 27, 2024

Published: December 30, 2024

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Abstract

Background: Detachment of the placenta occurs in about 96% of patients within 30 minutes of completion of the second stage of labour, thus any further delay there after is usually considered as retained placenta. It is associated with the risk of post-partum haemorrhage and anaemia. **Objectives:** To determine the incidence, risk factors, clinical presentation and complications of retained placenta at the study centre during the period under review. **Methods:** This was a retrospective case-control study in which records of women with retained placenta between January 2011 and December 2015 were retrieved and analysed for their age, parity, risk factors, clinical presentation and associated complications and compared with equal number of patients without retained placenta. **Results:** There were 11 cases of retained placenta recorded among the total number of 2068 deliveries during the study period, giving an incidence of 0.53% retained placenta in this study. Majority of cases (45.4%) were between age 30 and 39 years which was similar to the controls (54.5%). Most of the cases were unbooked (81%). Similarly, most women in both cases (82%) and controls (73%) were multiparae. All the 5 cases (45.5%) that had post-partum haemorrhage received blood transfusion. The overall incidence of post-partum anaemia was 54%. The average weights of the placentae were significantly smaller in the cases with placental retention ($p = 0.010$). **Conclusion:** Retained placenta is associated with significant risks of post-partum haemorrhage and blood transfusion. Non-booking for antenatal care is the commonest risk factor identified for retained placenta in this study.

Keywords

Retained Placenta, Risk Factors, Third Stage of Labour, Complications

1. Introduction

Retained placenta affects 0.1% - 3.3% of women following delivery, and is a major factor in the cause of maternal death from post-partum haemorrhage (PPH) and puerperal sepsis [1] [2]. Developing countries contribute up to 90% to maternal mortality globally and about 25% of these deaths are due to haemorrhage during pregnancy, birth or post-partum period, of these, 15% - 20% is due to retained placenta [3] [4]. After uterine atony, retained placenta is the second major indication for blood transfusion in the third stage of labour with blood transfusion required in 10% of retained placenta group compared to 0.5% of the control group in a retrospective study conducted in Tanzania [5].

Appropriate management of the third stage of labour can help to reduce complications associated with this stage of labour, including retained placenta. Retained placenta is a potentially preventable cause of primary post-partum haemorrhage. Although some factors that predispose a pregnant woman to retained placenta have been identified, there is no consensus on its significance and relative importance. For example, some authors have reported a significant increase in the incidence of retained placenta due to factors that include multiparity, augmentation of labour with oxytocin, uterine inertia/atony, uterine fibroids and home delivery [6] [7]. Others include pre-term labour/deliveries, prolonged labour, induction of labour, previous retained placenta, previous dilatation and curettage, and previous caesarean section [8].

It would be relevant to investigate and identify independent risk factors for retained placenta before applying the risk approach for its prevention in any health facility. This will help to increase the sensitivity and specificity of the methods and selected risk factors in preventing retained placenta.

In the light of these facts, this study has reviewed the incidence, clinical presentation, risk factors, treatment and complications of retained placenta at our centre in order to proffer appropriate preventive measures to the menace.

2. Materials and Methods

The case record of patients with retained placenta, including those who had antenatal care at the our centre and all cases of retained placenta referred to our facility (the unbooked women from other healthcare facilities and those delivered at home, faith clinics and herbal homes) between 1st January, 2011 and 31st December, 2015 were retrieved and reviewed. A total of 11 of such case records were retrieved, and the needed information for analysis with respect to age, parity, risk factors, past and present obstetric and gynaecological characteristics, complications, conditions on admission and place of delivery prior to retained placenta were extracted. Also, 11 patients with similar demographic and Obstetric characteristics such as age and parity that were admitted and had normal deliveries after those with retained placenta, served as controls. All identified cases during the period were included in the study. The data were extracted from the case records by two of the authors (AAA and AMO) using standardized proforma designed for

the purpose. The data so collected were analysed by Epi-Info software version 6 for statistical analysis. The variables were tested with Chi-square and Fisher's exact test as appropriate. The level of significance was set at p-value of ≤ 0.05 .

3. Results

3.1. Socio-Demographic Characteristics

During the period under study, there were 11 cases of retained placenta and total number of deliveries was 2068, thus giving an incidence of 0.53%. The age distribution of the patients is as shown in **Table 1**. The highest incidence 5 (45.4%) was in the age group 30 to 39 years. Only one patient aged 40 years and above, had retained placenta giving an incidence of 9.1%. There is no statistically significant difference between the ages of the women with retained placenta and the controls

Table 1. Socio-demographic characteristics of the cases versus the controls.

Variable	Case group n = 11 (%)	Control group n = 11 (%)	χ^2	p-value
Age (years)			0.96	0.812
<20	02 (18.2)	01 (9.1)		
20 - 29	03 (27.3)	02 (18.2)		
30 - 39	05 (45.4)	06 (54.5)		
≥ 40	01 (9.1)	02 (18.2)		
Parity			0.41	0.982
0	01 (9.1)	02 (18.2)		
1	01 (9.1)	01 (9.1)		
2	01 (9.1)	01 (9.1)		
3	07 (63.6)	06 (54.5)		
≥ 4	01 (9.1)	01 (9.1)		
Marital status			0.39	0.534
Married	09 (81.8)	10 (90.9)		
Unmarried	02 (18.2)	01 (9.1)		
Education			2.00	0.572
None	01 (9.1)	01 (9.1)		
Primary	01 (9.1)	03 (27.3)		
Secondary	06 (54.5)	06 (54.5)		
Tertiary	03 (27.3)	01 (9.1)		
Employment			5.24	0.022
Employed	05 (45.5)	10 (90.9)		
unemployed	06 (54.5)	01 (9.1)		
Total	11 (100.0)	11 (100.0)		

χ^2 = chi-square test.

($p = 0.812$). One patient (9.1%) was nullipara, while ten (90.9%) were multiparae. **Table 1** showed marital status and Educational level of the patients. Nine (81.8%) were married. One (9.1%) had no formal education, one (9.1%) had primary and 6 (54.5%) had secondary education. Only three (27.3%) had tertiary education. Six (54.5%) were unemployed as shown in **Table 1**. Unemployment status is a statistically significant risk factor for retained placenta ($p = 0.022$).

3.2. Clinical Characteristics

The past obstetric and gynaecological history of the women is as shown in **Table 2**. There was higher number of women with history of previous dilatation and curettage (54.5%) and previous retained placenta (18.2%) among the cases, compared with the controls, though this was not statistically significant ($p = 0.206$). One woman had previous caesarean section and previous myomectomy, each in the case group and the control group respectively (each 9.1%).

Table 2. Clinical characteristics of the cases versus controls.

Variable	Case n = 11 (%)	Control n = 11 (%)	χ^2	p-value
Antenatal booking			6.60	0.010
Unbooked	09 (81.8)	03 (27.3)		
Booked	02 (18.2)	08 (72.7)		
Gestational age at delivery			2.93	0.087
Pre-term (<37 weeks)	07 (63.6)	03 (36.4)		
Term (≥ 37 weeks)	04 (36.4)	08 (81.8)		
Duration of first stage of labour			2.33	0.127
<12 hours	07 (63.6)	10 (90.9)		
≥ 12 hours	04 (36.4)	01 (9.1)		
Placenta weight			6.60	0.010
≤ 500 g	08 (72.7)	02 (18.2)		
>500 g	03 (27.3)	09 (81.8)		
Previous risk factor			5.90	0.206
Retained placenta	02 (18.2)	01 (9.1)		
Dilatation and curettage	06 (54.5)	02 (18.2)		
Caesarean section	01 (9.1)	01 (9.1)		
Myomectomy	01 (9.1)	01 (9.1)		
No identifiable factor	01 (9.1)	01 (9.1)		
Total	11 (100.0)	11 (100.0)		

χ^2 = chi-square test.

Among the cases with retained placenta, only two (18.2%) were booked while nine (81.8%) were unbooked as shown in **Table 2**. There is statistically significant

difference between the patients (cases) and the controls in term of booking status ($p = 0.010$). Majority of the cases (72.7%) had their placentae weighing 500g or less as compared to the control group (18.2%), which is significant statistically ($p = 0.010$). Seven (63.6%) had preterm deliveries. Four (36.4%) had prolonged labour with first stage of labour exceeding 12 hours. Majority of the patients 9 (81.8%) delivered in health facilities where the skilled of the birth attendants could not be ascertained and only 2 (18.2%) had first and second stages of labour in tertiary centre prior to retention of the placenta as shown in **Table 3**.

3.3. Risk Factors and Complications

The clinical complications of women with retained placenta were as shown in **Table 3**; primary PPH occurred in five (45.5%) of the women, one (9.1%) was admitted in a state of haemorrhagic shock. Six (54.5%) were anaemic, five (45.5%) were transfused with 2 - 4 units of blood on admission as shown in **Table 3**. Oxytocic agents were used in the management of 8 (72.7%) prior to retention of placenta while the remaining 3 (27.3%) women had no prior use of oxytocic medications as shown in **Table 3**.

Table 3. Clinical complications, Place of delivery and Oxytoxics use prior to referral of women with retained placenta.

Variable	Number of cases n = 11	Percentage (100%)
Incidence of primary post-partum haemorrhage		
Yes	05	45.5
No	06	54.5
Incidence of anaemia (Packed cell < 30%)		
Yes	06	54.5
No	05	45.5
Haemorrhagic shock		
Yes	01	9.1
No	10	90.9
Blood transfusion on admission		
Yes	05	45.5
No	06	54.5
Place of delivery		
Home	01	9.1
Primary Health Centre	05	45.4
Secondary Health facility	03	27.3
Tertiary Health facility	02	18.2
Oxytocics use prior to referral		
Yes	08	72.7
No	03	27.3

4. Discussion

The 0.53% incidence of retained placenta in this study was within the reported incidence of 0.1% - 3.3% [1] [2]. The incidence was lower when compared with the previously reported incidence of 1.02% in Calabar but similar to incidence of 0.59% in Port Harcourt [9] [10]. Of women with retained placenta, 81.8% were not booked for antenatal care. This figure was similar to 81.2% unbooked women reported in Port Harcourt, Nigeria [10]. However, this was higher than 8.01% in the earlier study by Soltan and Khashoggi [11].

Deliveries supervised by unskilled birth attendants or deliveries in inappropriately-staffed health centres are associated with a high incidence of poor management of third stage of labour especially with lack or poor implementation of active management of third stage of labour, leading to a high incidence of retained placenta in the unbooked women [9].

The utilization of health services has fallen over the years as a result of many factors. These include illiteracy, unemployment, poverty and the charging of fees in most tertiary public health institutions. All these have contributed to the increased incidence of unbooked women with emergencies and the attendant obstetrical morbidity and mortality over the years [12] [13].

This study identified non-booking for antenatal care, previous retained placenta, previous dilatation and curettage, previous myomectomy and unskilled birth attendants as factors associated with retained placenta. This is in agreement with the findings of other researchers [1] [2] [14] [15]. It is hypothesized that these factors cause injuries that lead to deficient or damaged endometrium predisposing the implanted ovum's chorionic villi to penetrate into the uterine muscle. This penetration of the endometrium and the uterine muscle predisposes to placental retention. The severe form of this phenomenon is believed to be the cause of placenta accreta [16].

Aversion to caesarean section by pregnant women in our environment causes a lot of high-risk women to deliver at inappropriate and under-equipped health facility with attendant complications including retained placenta [12] [17]. Increased abnormalities of placental implantations in grand multiparous women [18] and the notable association with uterine atony in this group of women, constitute factors leading to retained placenta [18] [19]. Each of the preterm delivery and low placental weight contributed a significant risk of retained placenta in this study.

Retained placenta was associated with primary post-partum haemorrhage in five (45.5%), this is comparable to a study done by Owolabi *et al.* (48.3%) in OAUTH, Ile-Ife [14]. One (9.1%) of the women was admitted in a state of shock and five (45.5%) of the women had blood transfusion.

Poor management of the third stage of labour, even in low-risk women, can lead to retained placenta. This may result from attempts to deliver the placenta when uterine contraction has not taken place, to separate the placenta from the decidua. Forceful traction on the umbilical cord may lead to snapping of the

umbilical cord resulting in placental retention. The need for manual removal of placenta can be reduced by 20% by the use of intra-umbilical oxytocin (30 iu in 30 ml of saline) [20]. This could be further reduced by 49% with the use of Sulprostone, a potent stimulator of uterine smooth muscle contraction with high abortifacient activity [21].

Occasional entrapment of the placenta results from uterine and cervical constriction ring following delay in the delivery of the placenta after the injection of an oxytocic agent during the active management of the third stage of labour. This was noted in three (27.3%) of women in this study, which is comparable to the 24.4% findings in a study by Onwudiegwu and Makinde in OAUTH Ile-Ife [22]. However, a trapped placenta may respond to glyceryl trinitrate 500 microgram sublingually [23].

This study has been able to identify some of the important risk factors, mode of presentation, management and complications of retained placenta among the women presented at Federal Teaching Hospital, Ido-Ekiti during the period under review (January 2011 to December 2015). Some of these risk factors include; non-booking for antenatal care during pregnancy, unemployment, previous history of retained placenta, previous history of dilatation & curettage and pregnancies that end up in preterm delivery or low placental weight.

5. Conclusion

Retained placenta remains an important cause of post-partum haemorrhage, maternal morbidity and a major factor in the cause of maternal mortality especially in Africa and other developing countries. There is a need for training and retaining of birth attendants at all levels in proper conduct of delivery and third stage of labour to prevent placental retentions and post-partum haemorrhage. Government should also improve the socio-economic conditions of the populace and provide free maternity services especially in rural communities where home deliveries abound to encourage early antenatal booking in centres with skilled health staff. The informal sector and the rural populace should be fully incorporated into the National health insurance scheme (NHIS). All these will improve the utilization of available delivery care services and reduce the number of unbooked emergencies. The generalization of the findings from this study is limited by the small sample size and being a retrospective and a single centre study, thus a larger, prospective and multi-centre study is desirable.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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