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Placenta Praevia in a Tertiary Hospital in Southern Nigeria: A Six-Year Review of Prevalence, Trend, and Risk Factors

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ABSTRACT

Background: Placenta praevia is a major cause of antepartum haemorrhage. It is associated with high foeto-maternal morbidity and mortality. The study was aimed at reviewing cases of placenta praevia managed at the Rivers State University Teaching Hospital (RSUTH) over 6 years, to determine the prevalence, trend, and sociodemographic/obstetrics factors.

Methods: A descriptive cross-sectional study of all recorded cases of placenta praevia managed at RSUTH from 1st January 2016 to 31st December 2021. Descriptive and inferential statistics were derived using IBM, Statistical Product and Service Solution (SPSS) version 25.0 Armonk, NY.

Results: There were 14,195 deliveries and 137 cases of placenta praevia; giving the prevalence of 0.97% or 9.7 per 1000 or 1 in 103 deliveries The rate of placenta praevia per 1000 deliveries increased from 0.98 in 2016 to 3.03 in 2018 and then decreased to 1.54 in 2021. The mean (SD) age and gestational age of the participants were 32.5±4.9 (95% CI: 31.67, 33.34) years and 36.7 ±2.6 (95% CI: 36.34,37.10) weeks. The modal parity was para 1. The median blood loss was 600mls range 300-3,200 mls. The majority of the patients were booked 116 (84.7%), multiparas 65(47.4%) and had tertiary level education 56(40.9%). The most common risk factor identified was the history of a previous caesarean section 66(37.5%).

Conclusion: The prevalence of placenta previa in RSUTH is 0.97%; with a declining pattern of occurrence. Placenta praevia occurs more among multiparous women with a history of previous caesarean sections. Knowledge of this will be helpful to clinicians in making diagnosis and management of cases.

KEYWORDS: Placenta praevia, Haemorrhage, Abnormal placentation, RSUTH.

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INTRODUCTION

Placenta praevia is a major cause of antepartum haemorrhage. It occurs when the placenta is wholly or partially located at the lower uterine segment after a period of foetal viability. It is one of the most dreaded complications of pregnancy and is associated with maternal and foetal morbidity and mortality[1, 2].

The prevalence of placenta praevia varies across different regions of the world. A global overall prevalence of 5.2 per 1000 deliveries has been reported[3]. The prevalence is higher in Asia (12.2 per 1000 deliveries) and Europe (3.6/1000) compared to North America and sub-Saharan Africa 2.9/1000, and 2.7/1000 deliveries respectively. In a previous cross-sectional study conducted in Port Harcourt, Nigeria on antepartum haemorrhage, placenta praevia was the most common cause of antepartum haemorrhage accounting for 28.2 % of cases of APH[4]. Patients often present with painless vaginal bleeding in the late second and /or third trimester. The placenta as a fastidious organ usually implants at a new site in each pregnancy, avoiding previously

implanted sites or scarring[5]. Although the aetiology of placenta praevia is not fully known, the above feature of the placenta explains the following risk factors: previous history of uterine scars (from myomectomy, manual removal of placenta, evacuation of retained products of conception), previous placenta praevia, induced and spontaneous miscarriages, coexisting uterine fibroids, multiparity, endometritis and advanced maternal age [4-6]. Large placenta size as seen in cases of multiple gestations, diabetes mellitus, severe anaemia, smoking and polyhydramnios makes it extend to the lower segment [5, 7, 8]. Abnormal placentation (morbidly adherent placenta) is known to be associated with life-threatening haemorrhage, increased requirement for blood transfusion[4], peripartum hysterectomy and foeto-maternal complications[9, 10]. A study on placenta previa is lacking in our setting. Thus, the present study is aimed at reviewing all cases of placenta praevia managed at the RSUTH, to determine its prevalence, pattern of occurrence, and risk factors.

MATERIALS AND METHODS

The study was conducted at the Rivers State University Teaching Hospital (RSUTH), Port Harcourt, Rivers State, Nigeria. RSUTH is one of the tertiary health facilities in Rivers State and is located at the heart of Port Harcourt the capital of Rivers State. The Hospital receives referrals from within and neighbouring states.

This was a descriptive cross-sectional study of all recorded cases of placenta praevia managed at the RSUTH, from 1st January 2016 to 31st December 2021. All cases of placenta praevia were collated from the labour ward, post-natal and the theatre records. The total number of deliveries during the review period was obtained from the labour ward and theatre records/registers. A study proforma was designed and used to collect data on sociodemographic/obstetric factors, risk factors, type of placenta previa, nature of the surgery and foeto-maternal outcomes. Antepartum haemorrhage was defined as bleeding from the genital tract after the period of foetal viability. Placenta praevia was defined as a placenta that is partially or wholly implanted in the lower uterine segment after the period of foetal viability (which in our environment is 28 weeks). The diagnosis was made both clinically and radiologically.

Data collected were entered into Microsoft word Excel office 2019 and transferred to IBM, Statistical Product and Service Solution (SPSS) previously known as Statistical Package for the Social Sciences version 25.0, Armonk, NY, for analysis. Continuous variables were summarized using mean and standard deviations with 95% confidence intervals around the point estimates while categorical variables were summarized in frequencies and percentages. Ethical clearance for the study was obtained from the Hospital.

RESULTS

There were 14,195 deliveries and 137 cases of placenta praevia, giving the prevalence of placenta previa at the Rivers State University Teaching Hospital as 0.97% or 9.7 per 1000 deliveries. The rate of placenta praevia per 1000 deliveries increased from 0.98 in 2016 to 3.03 in 2018 and then a decrease to 1.54 in 2021 (Table 1). Of the 137 cases of placenta praevia, 39 (28.5%) were morbidly adherent while 98 (71.5%) were not morbidly adherent.

Table 1. Annual trend in the rate of placenta praevia in RSUTH

Year	Cases of placenta praevia (%)	Total no of deliveries	Percentage of total deliveries	Rate per 1000 deliveries
2016	14(10.2)	3495	0.098	0.98
2017	24(17.5)	2747	0.169	1.69
2018	43(31.4)	2294	0.303	3.03
2019	23(16.8)	1960	0.162	1.62
2020	11(8.0)	1910	0.077	0.77
2021	22(16.1)	1789	0.154	1.54
Total	**137 (100)**	**14195**	**0.965**	**9.65**

The mean (SD) age and gestational age of the participants at delivery were 32.5±4.9 years and 36.7 ±2.3 weeks. The modal parity was para 1 (Table 2). The majority of the patients were booked 116(84.7%), and Christians 137(94.9%). About half of the participants had tertiary level education 56 (40.9%) [Figure 1]. The most common risk factor observed was the history of previous caesarean section 66 (38%), followed by co-existing uterine fibroid 45 (26%) [Table 3].

Table 2. Sociodemographic/ Obstetric features of study participants

Variables	Number	Percentage
Age (Years)		
20-24	10	7.3
25-29	32	23.4
30-34	38	27.7

35-39	49	35.8
40-44	8	5.8
Mean age 32.5	SD 4.9	95%CI: 31.7, 33.3
Mean GA 36.7	SD 2.3	95%CI: 36.3, 37.1
Parity		
0	25	18.2
1	44	32.1
2	35	25.6
3	20	14.6
4	10	7.3
≥5	3	2.2
Religion		
Christianity	130	94.9
Islam	7	5.1
Mode of delivery		
Caesarean section	135	98.5
Vaginal delivery	2	1.5
Booking Status		
Booked	116	84.7
Unbooked	21	15.3

SD- Standard deviation CI-Confidence interval GA- Gestational age

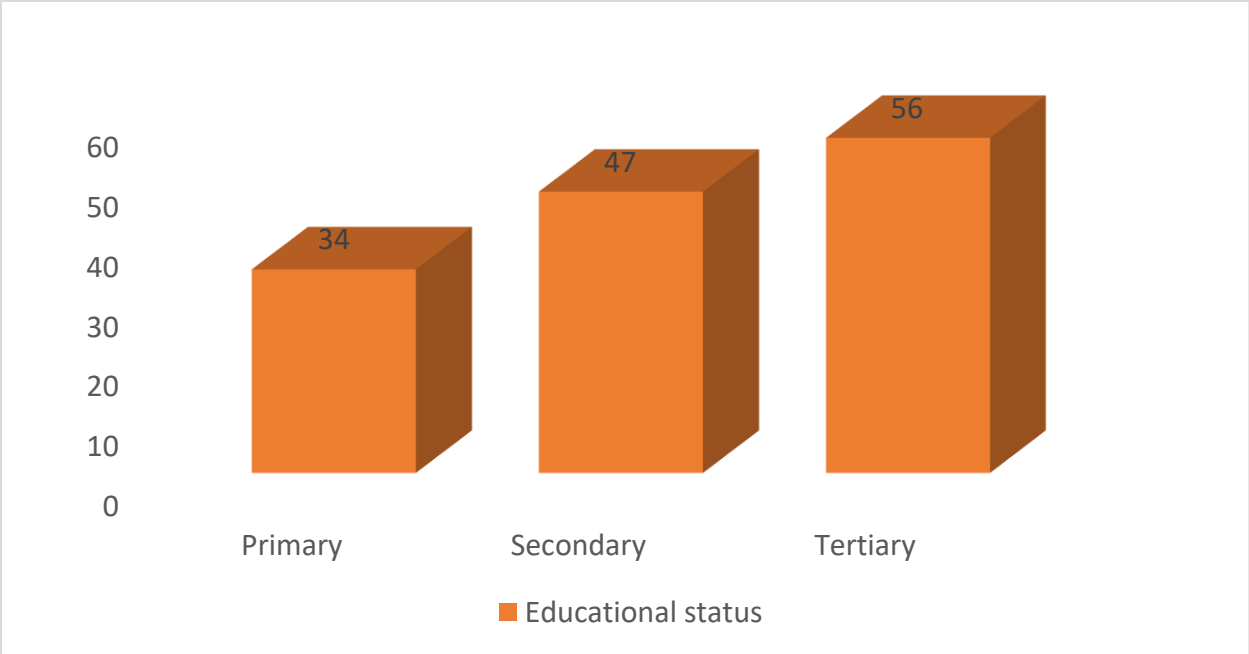

Figure 1. Educational status of participants

Table 3. Risk factors for Placenta Praevia

Risk Factor	Number*	Percentage
Previous caesarean section	66	37.5
Previous myomectomy	20	11.4
Miscarriage/evacuation	21	11.9
Co-existing uterine fibroid	45	25.5
Multiparity	17	9.7
Undetermined	7	4.0
Total	**176**	**100**

*Multiple risk factors

DISCUSSION

The prevalence of placenta praevia at the Rivers State University Teaching Hospital is 0.97% or 9.7 per 1000 deliveries or 1 in 103 deliveries. This is similar to the findings of previous studies conducted in Nigeria [11-13] but lower than 8%[14], 2.6% [15] and 2.4%[16] reported by Sahel et al. in the Middle East, Kurdistan region of Iraq, Ezechi et al., in Lagos and Ayodeji et al., in Ondo state, Western Nigeria respectively. However, our finding is higher than the overall reported prevalence of 2.7 per 1000 pregnancies in sub-Saharan African[3]. The differences in the period of review, and number of deliveries amongst other factors across studies could have accounted for the variations in the rate of placenta praevia observed. Our review was for 6 years and the total number of deliveries recorded in the present study was higher compared to those of previous studies. Over the period reviewed, a decrease in the rate of placenta praevia was observed following an initial rise in the first three years. The increased rate of occurrence in the first three years may be due to high number of patients managed in our hospital during the free medical services in Rivers State. With the increasing rate of caesarean delivery in RSUTH [17], one would have expected an increasing trend in the cases of placenta praevia. However, this finding is not surprising as the number of deliveries in the hospital also decreased perhaps with the 'out of pocket' payment system (as against free medical services carried out in the past years) as well as limiting of family sizes by couples. This finding corroborates those of previous study in Nigeria [5]

The mean ±SD age of the participants was 32.5 ±SD 4.9 and the modal age group was 35-39 years. This is similar to findings of previous studies where older women had a higher risk of placenta praevia compared to younger age groups [11, 16, 18, 19]. In the present study, placenta praevia occurred more among the multiparous women 47%. This is in keeping with the finding of increased occurrence of placenta praevia among multiparas and grand multiparas[13, 20, 21] compared to women of lower parity in literature.

Over 80% of the study participants booked antenatal care in the Hospital. This corroborates the findings of a study done in South-East [12] and Jos, Northcentral, Nigeria [22] but contrary to those of Omokanye et al. in Ilorin, western Nigeria [13] and Sagamo, western Nigeria [11]. The finding of a higher number of booked patients in this study is not surprising as women with a diagnosis of placenta praevia are often book for antenatal care in a tertiary health facility and/or are referred from peripheral health facilities to a tertiary health facility like ours for expert management. Additionally, pregnancy complicated with placenta praevia is a high risk, as such often present to centres with specialist care.

The majority of the participants 135 (98.5%) had a caesarean section for major degree placenta praevia while 2 (1.5%) had minor degree placenta praevia delivered vaginally. This finding is consistent with those of previous studies [12, 15, 22, 23].

The most common risk factor identified from this study was a previous caesarean section. Others in decreasing order occurrence are the history of co-existing uterine fibroid, miscarriage/evacuation, and multiparity. This is in keeping with the findings of previous studies[12, 22]

CONCLUSION

The prevalence of placenta previa in RSUTH is 0.97%. The commonest risk factors identified were previous caesarean section followed by co-existing uterine fibroid diagnosis. Knowledge of this is important in the management of cases. Also, prompt diagnosis and efficient blood transfusion services will improve management outcomes.

COMPETING INTEREST

Authors have no competing interests to declare

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