



Placenta Praevia: Diagnosis and Management outcomes in a Medical Centre, South East Nigeria

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Abstract

Background: Maternal as well as perinatal morbidity and mortality from placenta praevia could be considerable. Early diagnosis, and appropriate management could reduce significantly unfavourable fetomaternal outcomes associated with placenta praevia.

Objective: This study sought to determine the diagnostic modality and management outcomes of patients with placenta praevia in our centre.

Materials And Method: A retrospective survey of all patients diagnosed with placenta praevia between January 2007 to December 2014 was undertaken. The case records of the patients were obtained from the hospital Medical Records Department.

Results: The incidence of placenta praevia in this study was 1.1%. Majority (74.6%) of the patients were booked. The peak age group was 31-40 years which accounted for slightly more than half (51.6%) of the cases. Many (57.1%) were of low parity (1-2). More than half (69.1%) were delivered at term. Most (96.0%) presented with antepartum haemorrhage. Also, most (81.0%) had major degree placenta praevia. Uterine evacuation was the commonest documented risk factor. More than half (58.7%) were managed expectantly. Majority (95.2%) were delivered by caesarean section. About 42% were transfused with blood. Postpartum anaemia was the commonest (21.0%) maternal morbidity. There was no maternal death. About 12.0% of the babies had birth asphyxia while 31.0% of the babies were of low birth weight. There were seven perinatal deaths (5.3%).

Conclusion: Only an insignificant proportion of these patients were diagnosed as asymptomatic cases during ultrasound scan for other indications. A policy of routine ultrasound scanning is recommended to enhance early diagnosis and improve fetomaternal outcome.

Introduction

Obstetric haemorrhage is the leading cause of maternal death worldwide.¹ This is particularly so

in developing countries where few women receive antenatal care, there is shortage of blood for transfusion and delays of operative delivery due to

logistic problems.² Antepartum haemorrhage complicates 2-5% of pregnancies of which approximately one-third are due to placenta praevia.³ About 7% of maternal deaths caused by obstetric haemorrhage are related to placenta praevia.⁴

Placenta praevia, aside being a significant contributor to maternal mortality, represents a major clinical problem because the patient may need blood transfusion following massive antepartum, intrapartum and postpartum haemorrhage.⁵ Again, previous caesarean delivery with associated placenta praevia has been recognized as a risk factor for life threatening haemorrhage following placental removal as well as peripartum hysterectomy.⁶⁻⁸

Preterm delivery and low birth weight which could result from placenta praevia are important causes of perinatal death.^{9,10} Perinatal mortality rates are three to four times higher in pregnancies complicated by placenta praevia than in normal pregnancies.^{8,10} Sometimes, in a bid to minimize the risk and problem of prematurity, patients with placenta praevia, especially when symptomatic may require prolonged hospitalization. This has considerable economic as well as social implications and may place huge demands on health resources.¹¹

Placenta praevia is a relatively uncommon condition with overall incidence of between 0.84%¹² and 1.65%¹³ in Nigeria. However, the incidence rates are higher among women with advanced maternal age, multiple gestation, high parity, past history of placenta praevia and previous uterine surgery including uterine curettage and caesarian section.^{2,12,14} Data from Eastern Europe shows 2-to 3-fold increase in the incidence of placenta praevia subsequent to liberalization of abortion law in 1960.¹⁵ With the rising rate of caesarean section, the incidence of placenta praevia and its complications, including morbidly adherent placenta, will continue to increase.^{17,18}

Several studies on the diagnosis and fetomaternal outcomes of placenta praevia in Nigeria have been

published.^{9,12-14,18} However, there is a paucity of data on placenta praevia in Abia State, Nigeria where the Federal Medical Centre Umuahia is located and no study on placenta praevia has been carried out in this centre. This study was therefore undertaken to determine the incidence, risk factors, diagnostic modality and fetomaternal outcomes of placenta praevia at Federal Medical Centre, Umuahia. It is hoped that the findings of this study may aid in formulating crucial measures that will improve diagnosis, management and fetomaternal outcomes of placenta praevia in this locality.

Materials and Methods

This was a retrospective study conducted at the Department of Obstetrics and Gynaecology, Federal Medical Centre, Umuahia in the Southeast geopolitical zone of Nigeria. The folder numbers of all women who had placenta praevia between January 2007 and December 2014 were collected from the wards and maternity theatre registers. The diagnosis of placenta praevia was predicated on ultrasound scanning done following antepartum haemorrhage and findings during caesarean section. The folders were subsequently retrieved from the medical records department. Information on sociodemographic variables, clinical presentation, risk factors, diagnostic modality, mode of delivery and fetomaternal outcomes were extracted from the folders as well as ward and maternity theatre registers using a specially designed data form. The data were analysed using simple proportion and percentages. Permission to conduct the study was obtained from the Health Research and Ethical Committee (HREC) of the Federal Medical Centre, Umuahia.

Results

There were 12,012 deliveries during the period under review. Of these, 126 (1.1%) patients had placenta praevia. Most (74.6%) of the patients were booked while the remaining 25.4% were unbooked.

The ages of the patients ranged from 21 years to 45 years. The peak age group was 31-40 years which accounted for about (51.6%) of the cases. Many (57.1%) of the patients were of parity 1-2. Only 13(10.3%) of the patients were delivered before 34 weeks gestation. More than half of the patients (69.1%) were delivered from 37 weeks gestation and above.

One hundred and twenty-one patients presented with vaginal bleeding after 28 weeks gestation. Only 2 patients (1.6%) were asymptomatic and were diagnosed incidentally during ultrasound scan. Also 102(81.0%) patients had major degree placenta praevia while only 24 (19%) had minor degree placenta praevia.

Identifiable risk factors for placenta praevia in this study included previous history of uterine evacuation (46.8%), advanced maternal age ≥ 35 years, (29.4%), past history of caesarean section (18.3%) and previous history of placenta praevia.

More than half of the patients (58.7%) were managed expectantly while about 41% were delivered as soon as they presented after initial resuscitation. One hundred and twenty patients (95.2%) underwent caesarean section, three patients (2.4%) had emergency caesarean hysterectomy and another three patients (2.4%) were delivered vaginally. About 42% of the patients were transfused with blood.

About 21% of the patients had postpartum anaemia while about 8% had primary postpartum haemorrhage. Enterocutaneous fistula was noted in one of the patients. There was no maternal death.

About 12% of the total live births had birth asphyxia while 31.1% of all the babies were of low birth weight. There were seven perinatal deaths (5.3%).

Table I: Sociodemographic variables

Age (years)	Number	Percentage
< 20	0	0
21 – 30	56	44.4
31-40	65	51.6
>40	5	4.0
Total	126	100
Parity		

0	20	15.9
1 – 2	72	57.1
3- 4	27	21.4
≥ 5	7	5.6
Total	126	100
Gestational Age at Delivery(weeks)		
< 34	13	10.3
34 – 36	26	20.6
≥ 37	87	69.1
Total	126	100.0

Table II: Clinical Characteristics of Patients

Mode of presentation	Number	Percentage
Asymptomatic	2	1.6
Vaginal bleeding	121	96.0
Abnormal Lie/Malpresentation	3	2.4
Total	126	100.0
Types of Placenta Praevia		
Minor		
I	13	10.3
IIa	11	8.7
Major		
IIb	21	16.7
III	58	46.0
IV	23	18.3
Total	126	100.0
Risk Factors		
Previous Uterine Evacuation	59	46.8
Advanced maternal Age(>35yrs)	37	29.4
Previous Caesarean Section	23	18.3
Previous History of Placenta Praevia	6	4.7
No Documented Risk Factor	1	0.8
Total	126	100.0

Table III: Management Approach

Type of Management	Number	Percentage
Expectant Management	74	58.7
Immediate Delivery	52	41.3
Total	126	100.0
Mode of Delivery		
Vaginal Delivery	3	2.4
Emergency Caesarean Section	82	65.1
Elective Caesarean section	20	15.9
Caesarean hysterectomy	3	2.4
Total	126	100.0
Number of Units of Blood Transfused		
Nil	73	57.9
1	34	27.0
2	15	11.9
3	2	1.6
≥ 4	2	1.6
Total	126	100.0

Table IV: Maternal & Perinatal Outcomes

Maternal Outcome	Number	Percentage
Postpartum Anaemia	26	20.6
Primary Postpartum Haemorrhage	10	7.9
Puerperal Sepsis	1	0.8
Wound Infection	1	0.8
Enterocutaneous Fistula	1	0.8
Maternal Death	Nil	Nil
Perinatal Outcome		
Apgar Score(In 5mins)		
≥7	110	88
<7	15	12
Total	125	100.0
BIRTH WEIGHT		
≥2.5	91	68.9
2.0-2.49	26	19.7
<2.0	15	11.4
Total	132	100.0
Perinatal Death	7	5.3

There were 4 twin deliveries and one Triplet Delivery

Discussion

The incidence of placenta praevia in this study was 1.1%. This figure was higher than 0.7%⁴ and 0.84%¹² reported in Bangkok, Thailand⁴ and Sokoto, Northern Nigeria¹² respectively. It was however lower than the incidence of 1.24%¹⁹, 1.65%¹³ and 2.6%²⁰ in Jos¹⁹, Nnewi¹³ and Lagos²⁰ respectively. This relatively lower incidence of placenta praevia in our study might not be unconnected with differences in diagnostic modalities and the fact that some of the patients with placenta praevia in this environment might have sought medical attention in nearby private clinics and some even prefer spiritual church based clinics.²¹

The peak incidence of placenta praevia in this review was observed in the 31-40 years age group. This probably was a reflection of the emerging global obstetric population as many women nowadays tend to defer child-bearing in pursuit of higher education and career²². In line with this peak age prevalence of placenta praevia in this series, it was not surprising that grandmultiparous women had the least incidence of placenta praevia while the highest incidence of placenta praevia was noted among women of low parity. This finding was consistent with the reports of previous studies from Southern Nigeria.^{9,13,14,20} It however contrasted sharply with the scenario in Northwest

Nigeria where the peak age incidence of placenta praevia was found in the 20-30 years age group and among grandmultiparous women¹². In Northern Nigeria women generally tend to marry early and achieve high parity at an earlier age.¹²

Most of the patients with placenta praevia in this review were booked. This observation was in consonance with the findings of Anzaku et al in Jos,¹⁹ North central Nigeria, but at variance with the situation in Ile-Ife⁹ and Osogbo²³, both in Southwest Nigeria, where majority of the patients with placenta praevia were unbooked.^{9,23} This variation could be a reflection of the divergent definitions of a booked patient and varying characteristics of different obstetric populations.

Given the fact that most patients with placenta praevia in this study were booked and ultrasound machines were readily available in our facility, it was rather paradoxical that only 1.6% of the patients were asymptomatic and only detected incidentally during ultrasound scan for other reasons. The policy of routine ultrasound scan in pregnancy had for long remained somewhat controversial and was not yet practised in our centre.

Antepartum haemorrhage was the commonest mode of presentation among patients with placenta praevia in this series. This was in agreement with other studies from within and outside Nigeria.^{2,4,8,9,12,13,18-20} Tendency to bleed seemed to correlate with the degree of placenta praevia as majority of the patients had major placenta praevia. This was similar to results in Kampala, Uganda², Peshavar, Pakistan¹⁵, Sokoto, Northwest Nigeria¹² and Nnewi, Southeast Nigeria¹³.

Examination in the theatre under a double set-up arrangement which was employed to diagnose a few cases of placenta praevia at Ile-Ife and Nnewi¹³, was not recorded in this study. Rather all suspected cases of placenta praevia were confirmed using transabdominal ultrasound scan. Ultrasound has now become the gold standard for the evaluation of cases with suspected placenta praevia³. As in other reports from Nigeria^{9,12,3,15,20}

there was a reluctance to use transvaginal ultrasound in making a sonographic diagnosis of placenta praevia in this study despite its excellent record of safety and greater accuracy in experienced and proficient hands.^{3,24,25,26}

Previous uterine evacuation, advanced maternal age (≥ 35 years) and past history of caesarean section were noted as risk factors for placenta praevia in this study. This was in keeping with the findings of earlier authors. Eniola et al confirmed past reports of increased risk of placenta praevia in women with a history of spontaneous or induced abortion¹⁴. Zang and Savitz noted an increased risk of placenta praevia with advanced maternal age²⁵. In a similar vein, Ananth et al reported dose response pattern of risk of placental praevia with rising number of previous caesarean deliveries¹⁰.

Expectant management which entailed hospital admission of patients with antepartum haemorrhage due to placenta praevia and correction of anaemia if there was significant vaginal bleeding till fetal maturity or fetomaternal compromise (Macafee regimen);^{3,28} was employed in 58.7% of cases who were either remote from term or did not have life-threatening haemorrhage. Macafee regimen was adopted for all cases in Nnewi¹³ but in Jos¹⁹ only placenta praevia cases diagnosed preterm were admitted and managed expectantly.¹⁹ Macafee regimen helps to reduce the incidence of preterm delivery and obviates the delays of intervention in the event of severe haemorrhage due to placenta praevia at home. However in developed countries with very good emergency obstetric care, outpatient management of placenta praevia may be appropriate for stable women with home support, close proximity to a hospital, readily available transportation and efficient communication network.^{11,29}

Caesarean section was performed in majority (95.3%) of the patients because most of them had major placenta praevia and the few patients who had minor degree placenta praevia presented with severe antepartum haemorrhage. This finding was in line with the reports of other studies.^{9,12,13,15,19,20}

Caesarean hysterectomy was carried out on three patients (2.4%) with placenta praevia apparently complicated by morbidly adherent placenta. Peripartum hysterectomy is a marker of severe maternal morbidity^{6,7}. Previous studies revealed that this outcome was experienced by 2-11% of patients undergoing caesarean section due to placenta praevia.^{6,12,18,19,29}

Postpartum anaemia was the commonest maternal morbidity in this study. This could be a reflection of late presentation^{9,12,19} and the high prevalence of anaemia in pregnancy in developing countries.³⁰ This finding was in agreement with reports in Peshawar, Pakistan,¹⁵ Sokoto¹² and Jos¹⁹. Enterocutaneous fistula was a rare but curious complication noted in one of the patients in this review. In caesarean section procedures for placenta praevia, especially in the context of abnormal placentation, injury to bowel, bladder and ureters are well documented complications.^{29,30} Onwere et al found that the risk of these injuries during elective caesarean section for placenta praevia was, for unclear reasons, doubled.³⁰ About 42.1% of the patients were transfused with blood. The incidence of blood transfusion in cases of placenta praevia was 4.5%¹³ and 51.1%¹⁹ in Nnewi¹³ and Jos¹⁹ respectively. The use of blood transfusion has been interpreted as a marker of the severity of haemorrhage.^{29,30}

Maternal death was not recorded in this study. The absence of maternal mortality could be due to quick response, improved blood banking services as well as early involvement of obstetric and anaesthetic consultants in the management of cases of placenta praevia.^{13,19,20,30,33,34} Similarly, in Ile-Ife⁹, Nnewi¹³ and Lagos²⁰, there was zero maternal death. However, in Sokoto¹² and Jos¹⁹, a maternal mortality rate of 1.0%¹² and 1.4%¹⁹ respectively was reported. The maternal deaths in these cases resulted from massive haemorrhage.^{12,19}

Birth asphyxia was noted in 12% of the babies. In a study in Bangkok Thailand, there was no birth asphyxia⁴ while 3.1%¹² and 7.9%¹⁹ of neonates suffered birth asphyxia in Sokoto¹² and Jos¹⁹

respectively. The relatively higher incidence of birth asphyxia in this study could be due to late presentation and diagnosis. The incidence of low birth weight in this review was 31.1% and it was comparable to 33.3%⁴ and 27.3%¹³ reported in Thailand⁴ and Nnewi¹³ respectively. This could be attributed to the contribution of preterm deliveries which was 31.0% in this study. This was lower than the incidence of 61.3% of prematurity due to placenta praevia at Peshawar Pakistan¹⁵. A combination of late presentation, massive haemorrhage, prematurity, birth asphyxia and low birth weight^{14,9,12,13,19} was responsible for a neonatal mortality of 5.3% in this study. This figure was comparable to 4.5% reported from Nnewi¹³ but lower than 17.7%,⁹ 12.5%¹,¹² 18.7%,¹⁹ and 7.64%²⁰ recorded in Ile-Ife,⁹ Sokoto,¹² Jos¹⁹ and Lagos²⁰ respectively. An efficient neonatal backup within the study setting might explain this comparatively lower perinatal mortality in this review.

Conclusion/Recommendation

It was paradoxical that only a negligible proportion of patients with placenta praevia were diagnosed as asymptomatic cases during ultrasound scan for other indications despite the ready availability as well as expertise for ultrasound and the high percentage of booked patients in this study. To reverse this trend, it is suggested that a policy of routine ultrasound scanning in early and late pregnancy be implemented in our centre as this would enhance pick-up of asymptomatic cases and improve management planning and fetomaternal outcome. Again, a paradigm shift from transabdominal to transvaginal ultrasound scan in suspected cases of placenta praevia is advocated, whenever feasible, as transvaginal ultrasound scan is more accurate in localizing the placenta and has been proven to have excellent safety profile in experienced hands.

Conflict of Interest

The authors declare that they do not have any competing or conflict of interest.

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