

The prevalence, risk factors and the management outcome of placenta praevia at Federal Teaching Hospital Gombe: A 5-year retrospective study

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Abstract

Background: Placenta praevia is one of the main causes of antepartum haemorrhage, which may be associated with severe maternal and perinatal morbidity and mortality, especially in developing countries. This study aimed to evaluate the prevalence, risk factors and the feto-maternal outcome of placenta praevia among patients managed in Federal Teaching Hospital Gombe, Northern Nigeria.

Methodology: This was a retrospective study where all cases of placenta praevia managed in Federal Teaching Hospital Gombe, over 5 years, from January 1st 2017 to December 31st 2021 were analyzed using SPSS V 20.

Results: There was a total of 11,937 deliveries during the study period and 63 cases of placenta praevia were managed, giving an incidence of 1.9%. Also, a total of 2,907 Caesarean deliveries were done during this period, and placenta praevia cases contributed 2.2% of the CS. About half of the cases also (47.4%) were asymptomatic and diagnosed incidentally with routine ultrasound scan while painless vaginal bleeding (32.2%) and warning bleeds (20.4%) were the other noted symptoms. The commonest risk factors noted in this study were previous dilatation and curettage (28.6%), previous CS and multiparity (22.6%) each. The fetal complications noted in this study were low birth weight (13.2%), birth asphyxia (10.3%) and 2.9% had intrauterine fetal death. Maternal complications were postoperative anaemia 55.4%, shock 7.7%, and 1.5% had peripartum hysterectomy. There was no maternal mortality noted in this study.

Conclusion: Placenta praevia is fairly common at our Centre and associated maternal and perinatal morbidities. Therefore, routine late obstetric ultrasound scan should be performed to diagnose it in women with risk factors so that they can receive optimal care.

Keywords: Prevalence; Risk factors; Outcome; Placenta; Retrospective study

1. Introduction

Placenta praevia is a severe pregnancy complication with considerable maternal and neonatal morbidity whereby the placenta implants partially or wholly in the lower uterine segment after 20 weeks of gestation.^{1,2,3} It may be complicated by fetal loss, preterm deliveries and associated postpartum haemorrhage, especially when done by inexperienced hands^{3,4}.

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The incidence of Placenta praevia varies from region to region. Globally, the incidence is 0.5% and 0.27% in sub-Saharan Africa⁵. In Nigeria, an incidence of 1.4% was recorded in Benin³, 1.6% in Ilorin⁴, and 1.1% in Umuahia⁵. The incidence of placenta praevia is highest among grand multipara, which is as high as 1/20 deliveries⁴.

Several risk factors for placenta Praevia exist including multiparity, multiple gestations, advanced maternal age, prior caesarean delivery, myomectomy scarred uterus, manual removal of placenta and smoking⁵ previous history of placenta praevia, previous induced and spontaneous miscarriages, smoking, advanced maternal age greater than 35 years, chronic fetal anaemia, high altitude and in vitro fertilisation^{2,3,6,7}

Placenta praevia can be classified into four types based on the relationship of the placenta to the internal cervical Os.⁹⁻¹²

Placenta praevia may be asymptomatic and the diagnosis an incidental finding at the surgery or during routine obstetric scans. However, many patients present with spotting per vaginal (warning bleeds) or life-threatening symptoms such as torrential unprovoked and painless vaginal bleeding, with symptoms and signs of shock.^{2,3,9,13}

The treatment of these patients depends on the gestational age at presentation, the severity of symptoms, and the clinical state of the mother and fetus^{2,9,13}. Conservative management (McAfee regimen) is offered when there is minimal or vaginal bleeding had stopped, gestational age is less than 34 weeks and both mother and foetus are in good clinical state^{2,11}.

Caesarean delivery is the safest route of delivery to improve maternal and fetal outcomes, requiring the services of an experienced surgeon who is capable of performing a peripartum hysterectomy. Several fetal and maternal complications have been documented, postpartum haemorrhage, preterm delivery and low birth weight and associated problems, increased caesarean delivery, blood transfusion, acute renal injury, DIC, prolonged hospital stay and fetal, neonatal or maternal death^{2,3,9,11,12}.

Presently, there is no documented literature on placenta praevia in Federal Teaching hospital Gombe, Gombe state. Hence the need for this study to determine the prevalence, risk factors and management outcome of placenta praevia in FTHG, Gombe state.

2. Material and method

This was a retrospective study of cases of placenta praevia that were admitted into the labour ward and antenatal ward and were managed at the Federal Teaching Hospital Gombe during the study period which spanned from January 1st 2017 to December 31st 2021. The folders of all the cases managed were retrieved from the medical records department, antenatal ward, postnatal wards and theatre records and the required data were obtained using a proforma. The data was analyzed using a commercial statistical package (SPSS/PC version 23). The analyzed data were represented with frequency tables and percentages.

3. Results

There were 11,937 deliveries during the study period, 2,907 patients had caesarean sections and 63 patients had placenta praevia and 50 case notes were retrieved, with a retrieval rate of 79.0%, giving the incidence of placenta praevia to be 0.5%. The study also showed that placenta praevia contributed to 2.2% of all Caesarean deliveries in Federal Teaching Hospital, Gombe in Gombe state. Table 1 shows the sociodemographic characteristics of the studied patients. The commonest age group affected by placenta praevia is 35-39, and the mean age is 31.8 years. Most of the patients were Muslims and married. The study also revealed that 52.0% of placenta praevia was seen in patients with a secondary level of education and 48.0% in multiparous women. Almost two-thirds (64.0%) of the patients were booked for antenatal care and the diagnosis was made during a routine ultrasound scan.

Table 1 Sociodemographic characteristics

Age	Frequency	Percentages
20-24	6	12.0
25-29	9	18.0
30-34	12	24.0
35-39	17	34.0
≥40	6	12.0
Total	50	100
Marital status		
Single	-	-
Married	50	100
Religion		
Islam	41	82.0
Christianity	9	18.0
Educational status		
Primary	13	26.0
Secondary	26	52.0
Tertiary	11	22.0
Total	50	100
Parity		
Nullipara	7	14.0
Primipara	13	26.0
Multipara	24	48.0
Grand multipara	6	12.0
Total	50	100
Booking status		
Booked	32	64.0
Unbooked	18	36.0
Total	50	100

Table 2 shown below is made up of a variety of risk factors identified in this study, with some of the patients having more than one risk factor.

The common risk factors noted in this study are previous history of dilatation and curettage (28.6%), while previous CS and multiparity were seen in 22.6% each. Previous history of myomectomy was 7.14% and the presence of coexisting uterine fibroids noted at the surgery or via ultrasonography was 8.3%, while the presence of DM as a risk factor was (4.8%), previous history of placenta praevia was 6.0% and unknown causes had 3.6%. The study did not identify any congenital uterine anomaly or smoking as a risk factor.

Table 3 shown below revealed the pattern of presentation, types of placenta praevia and the gestational age at delivery. Many of the patients had more than one symptom. Almost half of the cases (47.4%) were asymptomatic and diagnosed with a scan while 32.2% had painless vaginal bleeding. The last presentation noted was warning bleeds (20.4%). The

commonest form (type) of placenta praevia is type iii seen in 42.0%. The last form of placenta praevia noted in this study is type 1 (6.0%). The study also showed that 92.0% of the patients presented at ≥ 34 weeks gestation. The majority (90.0%) of the patients were actively managed at presentation while conservative management was done in 10.0% of the cases managed. All the cases managed in this study had Caesarean delivery, with over half (58%) of the cases having an emergency CS. About one-third, (28.0%) of the patients presented with anaemia while 72.0% had postoperative anaemia.

Table 2 Risk factors of placenta praevia

Risk factors	Frequency	Percentage
Unknown	3	3.6
Previous D/C	24	28.6
Previous placenta praevia	5	6.0
Previous myomectomy	6	7.14
Previous C/S	19	22.6
Multiparity	19	22.6
Diabetes mellitus	4	4.8
Uterine fibroid	7	8.3

Table 3 Types of anaesthesia used, pre/post-operative pcv and units of blood transfused

Type of anaesthesia		
SAB	39	78.0
GA	11	22.0
Pre-operation PCV		
<30	14	28.0
≥ 30	36	72.0
Post-operation PCV		
<30	36	72.0
≥ 30	14	28.0
Units of blood transfused		
1	6	20
2	15	50
3	6	20
4	3	10

Table 4 consists of the fetomaternal outcome. The study revealed a relatively fair outcome. The fetal complications noted in this study were low birth weight (13.2%), birth asphyxia (10.3%), and intrauterine fetal death (2.9%). More than half (60.3%) of the babies had normal birth weight; while (13.2%) of the babies were admitted into SCBU for neonatal sepsis, neonatal jaundice, low birth weight, hypoglycaemia and birth asphyxia. These babies were all discharged home in good clinical condition.

The maternal complications noted were postoperative anaemia (55.4%), PPH (32.3%), shock (7.7%), peripartum hysterectomy (1.5%) and wound infection (3.1%) each. There was no maternal mortality noted in the study.

Table 4 Feto-maternal outcome

Fetal outcome	Frequency	Percentage
SCBU Admission	9	13.2
Birth asphyxia	7	10.3
IUFD	2	2.9
LBW (<2.5kg)	9	13.2
Normal birth weight	41	60.3
Maternal outcome		
PPH	22	32.3
Peripartum hysterectomy	1	1.5
Anaemia	36	55.4
Wound infection	2	3.1
Shock	5	7.7
Maternal mortality	-	-

4. Discussion

Placenta praevia is one of the leading causes of antepartum haemorrhage, associated with increased maternal and perinatal morbidity and mortality^{2,7} and often taxes the best and well equipped obstetric team in the health facility. The prevalence incidence of placenta praevia from this study was (0.5%) of all deliveries and (3.0%) of all Caesarean deliveries. The prevalence gotten from this study was lower than (1.4%) in Benin, (1.6%) noted in Ilorin, (1.1%) in Umuahia and (1.24%) in Jos^{7,9,12,13}. This may be due to the differing sociodemographic characteristics of the two studied populations. The incidence of placenta praevia increased in older multiparous women as also seen in Ilorin, Umuahia and Jos^{7,9,12}.

The study noted that almost half of the patients (47.4%) were asymptomatic and were diagnosed by routine obstetric ultrasound scanning. Other symptomatology were painless vaginal bleeding (32.2%) and warning bleeds (20.4%). This was similar to other studies done in Benin, and Jos^{7,13}. The fact that (3.6%) of the patients had no recognizable risk factors suggest that the aetiology of placenta praevia could be unclear^{2,3,6}. Other risk factors identified in this study are previous dilatation and curettage (28.6%), previous CS (22.6%), myomectomy (7.1%), coexisting uterine fibroids (8.3%) and diabetes mellitus (4.8%); this was similar to other studies done in Benin, Jos and Egypt^{7,13,14}. Other risk factors such as multiple gestations, uterine congenital anomalies, smoking, chronic fetal anaemia, in-vitro fertilization, high altitude, succenturiate lobe and metroplasty, as reported in a study done in Jos⁷, were not seen in the patient studied.

The commonest form of placenta praevia seen in this study is type iii in (42.0%) of the patients. These values suggest that major degree placenta praevia is the most commonest, as also noted elsewhere^{7,9,14}. The majority (90.0%) of the patients did not qualify for the McAfee regime as they presented at or after 34 weeks and also actively bleeding per vagina, with feto-maternal compromise. These findings were similar to other findings in other similar studies in Benin and Umuahia^{9,13}. None of the patients had a vaginal delivery in this study. All the patients had caesarean sections, with the aim of practicing safe obstetrics. Other studies were done in Nigeria and Egypt revealed that vaginal delivery was conducted for some of the patients^{7,14-16}.

The perinatal outcome of patients managed was as good as more than half (60.3%) of the babies had normal weight; while 13.2% had low birth weight. Although 13.2% of the babies were admitted to the special care baby unit for low birth weight, hypoglycaemia, neonatal sepsis, neonatal jaundice, and birth asphyxia, which were discharged in a good clinical state. Only 2.9% of perinatal mortality (IUFD) was noted which was due to delays in arriving at the health facility for care. Other studies also revealed similar findings^{7,9,13}.

The study also revealed good maternal outcomes, although the majority of the patients were transfused. The main complications observed were postoperative anaemia 55.4%, PPH 32.3%, and shock 7.7%, while 1.5% and 3.1% each were seen in peripartum hysterectomy and wound infection respectively. This was also observed in studies done in Benin, Ilorin, Jos and Egypt^{7,12-14}. There was no maternal death recorded from this study which may be attributed to good resuscitative skills, the availability of experienced obstetricians and blood bank services.

5. Conclusion

The reduction of severe maternal and fetal complications associated with placenta praevia; a life-threatening condition will involve a multidisciplinary approach. This will entail focused health education to the general public and pregnant mothers, improvement in contraceptive services to prevent unwanted pregnancies that will lead to dilatation and curettage or progressing to term and increases the parity of these women. It is also crucial to improve health services utilization by providing more well-equipped health facilities which will be manned by experienced obstetricians, anaesthetists, paediatricians and blood bank services. The availability of ultrasound scans and encouraging routine scanning will aid in early diagnosis and appropriate health education to be offered to such patients. Also, the provision of adequate antenatal care services and making available management drills in the event of an emergency from placenta praevia; and the provision of neonatal and blood bank services are key considerations in ameliorating the severity of complications that may arise.

Challenges and limitations

The limitations encountered during this study were related to the paucity of cases being managed, poor or scanty documentation and difficulties with folder retrievals (79.0% retrieval rate). Also, the study was one-centered and to have a robust study, a multi-Centre study is encouraged.

Recommendations

Having understood the risk factors and dangers associated with this condition during this study, the following are hereby recommended;

- Women should be counselled on contraception and offered to reduce surgical management of abortions and parity that could predispose the women to placenta praevia.
- There is a need for the hospital to set up protocols that will help reduce caesarean section rates as a previously scarred uterus increases a woman's risk of placenta praevia.
- Women should be sensitized to the need to book antenatal care early for improved antepartum diagnosis and care.
- Ultrasound scan should be done routinely on all pregnant women who have had previous uterine surgeries (caesarean section, curettage or myomectomy) in the mid-trimester to exclude placenta praevia.
- Women diagnosed with placenta praevia should be counselled at each antenatal visit on reserving cross-matched blood in the blood bank since they may require a blood transfusion.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of ethical approval

Ethical clearance was obtained from the hospital's research and ethical committee. Further more, present research work does not contain any studies performed on animals/humans' subjects by any of the authors.

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