

## Risk Factors for Placenta Praevia in Jos, North Central Nigeria

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### Abstract

**Background:** Placenta praevia, a major cause of obstetric haemorrhage, is potentially life-threatening to the mother and frequently results in high perinatal morbidity and mortality. Several epidemiological and clinical studies report disparate data on the risk factors associated with this condition. Although several studies on risk factors for placenta praevia have been published, data obtained from the sub-Saharan Africa remains scanty. Our objective is to describe the spectrum of risk factors for placenta praevia in Jos, North Central Nigeria.

**Methods:** This was a retrospective cohort study of 96 women delivered from January, 1999 to December, 2002 at Jos University Teaching Hospital, Jos, Nigeria. Data on total number of deliveries, maternal age, parity, and past obstetrics history and abortion were carefully extracted from medical records and analyzed using the Epi Info 3.4.1 (CDC, Atlanta, Georgia).

**Results:** The prevalence of placenta praevia was 0.89%. Previous uterine evacuation was documented in 35.4% of cases, while previous caesarean section scar occurred in 5.2% of cases. About half (44.8%) of the cases had no known risk factor.

**Conclusion:** Uterine scaring following abortion management is an important risk factor for placenta praevia. However, majority of patients with placenta praevia in this work have no identifiable risk factor.

**Key Words:** placenta praevia, antepartum haemorrhage, risk factors, North central Nigeria

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### Introduction

Placenta praevia is an important cause of obstetric haemorrhage which is potentially life-threatening to the mother and frequently results in high perinatal morbidity and mortality.<sup>1,2,3</sup> It accounts for about 0.03% of maternal mortality ratio<sup>3,4</sup> high perinatal morbidity and mortality<sup>5</sup>, and places a high demand on health care resources, particularly in sub-Saharan African countries.<sup>6,7</sup> Placenta praevia, which complicates approximately 2.8 of every 1,000 live births,<sup>1,2</sup> is the implantation of the placenta entirely or in part in the lower uterine segment in advance of the fetal presenting part.

The exact aetiology of placenta praevia remains speculative, and is thought to be related to previous caesarean delivery, abortion, multiparity, multiple gestations, IVF and low socioeconomic factors.<sup>3,8,9</sup> Lifestyle factors such as smoking and cocaine abuse during pregnancy have also been related to the increased risk of placenta praevia.<sup>10,11</sup> Relative carbonmonoxide hypoxaemia associated with smokers has been postulated to increase the risk of placenta praevia two-fold.<sup>10,12</sup> The significance of race in placenta praevia remains uncertain. Some studies have suggested an increased risk of placenta praevia among African Americans and Asians,<sup>8</sup> while other studies cited no such difference. With the rising incidence of caesarean section worldwide, combined with increasing maternal age, the number of cases of placenta praevia and its complications may continue to increase.<sup>7,9,12</sup> There have been several studies on risk factors for placenta praevia, reports from the developing world have been scanty. The aim of this study is to supplement current literature especially as it affects developing nations, and to describe the spectrum of risk factors for placenta praevia in Jos, North Central Nigeria.

### Study Design/ Method

A retrospective cohort study of patients with placenta praevia who delivered at the Jos University Teaching Hospital (JUTH) from January, 1999 to December, 2002 was performed. As a tertiary institution, it serves as a referral center for majority of hospitals in North Central Nigeria. The operation register in the maternity theatre, and patient's records in the labour and antenatal wards were retrieved and records of total deliveries and those patients who had placenta praevia were noted. The case notes of patients who had placenta praevia were then retrieved from the medical records of the obstetric and gynaecological unit.

The total number of deliveries and the prevalence of placenta praevia were determined, while data on risk factors like maternal age, parity, previous uterine surgery, caesarean section and abortion history were extracted and their association with the occurrence of placenta praevia analysed. Previous myomectomy with breached endometrium was accorded similar risk as a previous caesarean operation. The study was approved by the ethical committee of JUTH.

Data analysis was conducted with Epi Info 3.4.1 (CDC, Atlanta, Georgia).

The diagnosis of placenta praevia was based on clinical findings and by ultrasonography. Caesarean section remained the mode of delivery in the institution.

The diagnosis was confirmed at the time of Caesarean section in all cases. Grandmultiparity was defined as five or more previous deliveries.

### Results

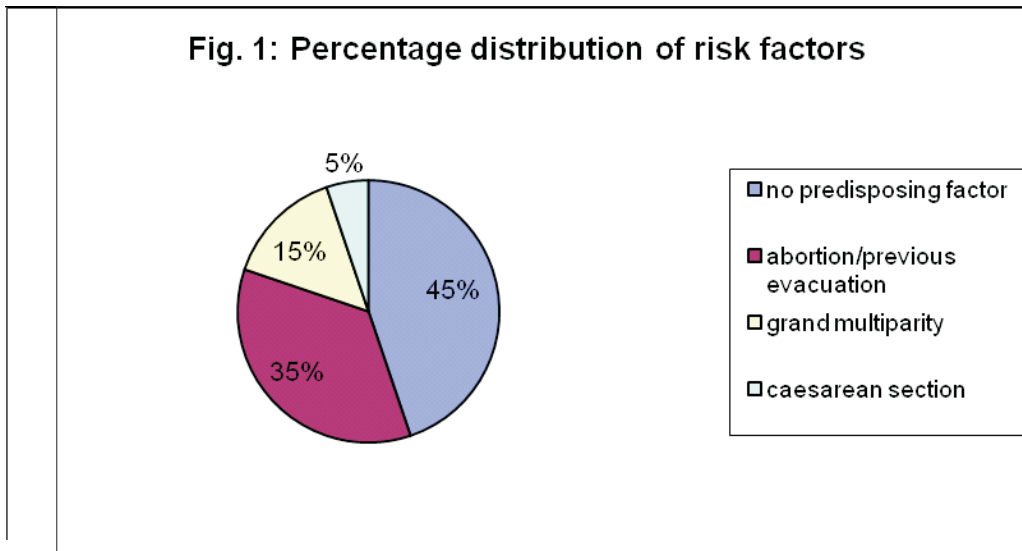
In the period under review, there were 10,733 deliveries out of which 96 cases were diagnosed as placenta praevia, giving a prevalence of 0.89%. The mean age of the patients was  $30.1 \pm 2SD$  years (Table I).

About sixty three percent (63.4%) of the patients had major degree placenta praevia, while 36.6% had minor degree. Previous dilatation and curettage, and manual vacuum aspiration for incomplete abortion were found in 35.4% of those with placenta praevia, previous caesarean section in 5.2%, while about half (44.8%) of the patients had no identifiable risk factor (Figure 1).

Patients of parity 2 and below accounted for majority (64.6%) of the cases of placenta praevia, while nulliparous and grandmultiparity accounted for 27.1% and 14.6% respectively (Table I). Slightly more than half (55.2%) of the patients were referred from other facilities. Linear trend by parity demonstrated a decline in the incidence of placenta praevia until parity five when it start rising again, suggesting a bimodal distribution (figure 2).

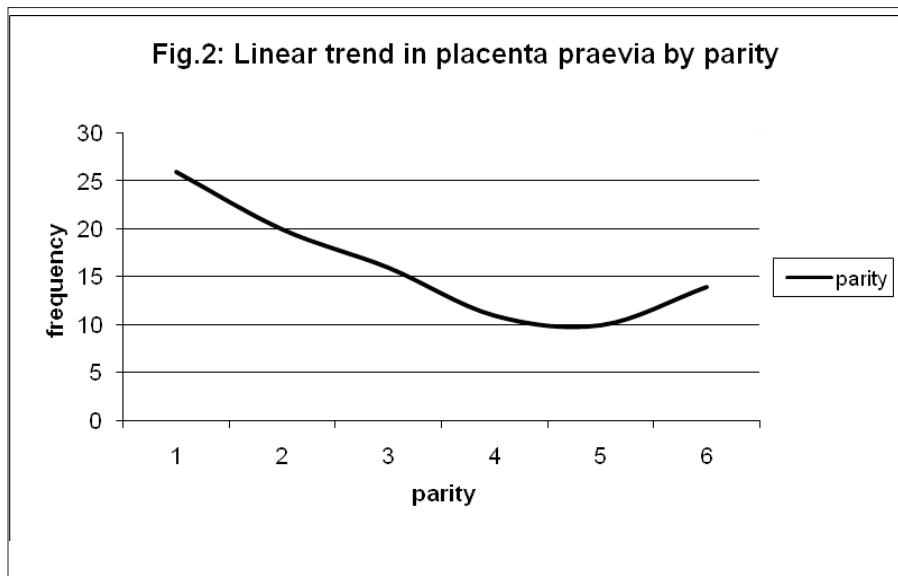
**Table I Age/parity distribution of patients with placenta praevia**

Age in years	Number	Percentage
20-24	15	15.6
25-29	35	36.5
30-34	29	30.2
35-39	12	12.5
>40	5	5.2
<b>Parity</b>		
0	26	
1	20	27.1
2	16	
3	11	20.8
4	10	16.7
5	14	
		11.5
		10.4
		14.6



**Figure 1: Percentage distribution of aetiological factors for placenta praevia**

No predisposing factor = 45%, Abortion/previous evacuation = 35%  
 Grandmultiparity = 15% Caesarean section = 5%



**Figure 2: Linear trend in occurrence of placenta praevia by parity**

X - axis = Parity, Y- axis = Frequency

### Discussion

Placenta praevia is the most common cause of third trimester bleeding, and contributes significantly to iatrogenic preterm deliveries.<sup>13</sup> The finding of previous uterine scarring as a major predisposing factor to placenta praevia in this work is in keeping with previous observation<sup>9</sup>. Evacuation of the uterus for abortion was the most frequently occurring risk factor (35.4%) for placenta praevia in this study.

This suggests a critical review of the restrictive abortion laws in our environment. Increased myometrial fibrosis associated with increasing parity and spacious endometrial cavities in multiparous women have been postulated to account for the association of placenta praevia with higher parity. In this study, however, we found a higher incidence of placenta praevia in women of lower parity, with a progressive decline until after the 4th delivery when it begins to rise

again. This observation is in contrast with other studies that reported progressive increase in the incidence of placenta praevia with increasing parity.<sup>1,7,9</sup> This could be attributed to the fact that these studies were carried out in the developed world where confounding socioeconomic factors have little or no significant influence. It may be interesting that 44.8% of our women had no identifiable risk factor. This may be attributed to under-reporting of previous termination of pregnancies; this is shrouded in secrecy due to restrictive abortion laws in Nigeria. There is well documented association between placenta praevia and previous caesarean section.<sup>2,4,9,14</sup> Eniola et al showed that women with a past history of caesarean section were five times at risk of placenta praevia<sup>14</sup>. Genital tuberculosis, sexually transmitted infections and infestation, a triad associated with

low socio-economic conditions in sub-Saharan Africa could cause uterine synechia; an identifiable risk factor for placenta praevia.<sup>5,14,15</sup>

Relationship of multiple gestations with placenta praevia<sup>1</sup> due to encroachment on to the lower uterine segment by the larger placental mass could not be evaluated since no woman in our cohort had multiple gestations.

A major limitation of this study was the poor documentation of information in the case files.

### Conclusion

Uterine scarring following abortion management is an important risk factor for placenta praevia in this work. However, majority of patients with placenta praevia in this work have no identifiable risk factor. A controlled prospective work may be required to support the findings in this retrospective study.

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