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Original article

Obstetric and Perinatal Outcomes in Pregnancies Complicated by Placenta Previa and Placental Abruption

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Abstract
Antepartum hemorrhage is a grave and potentially life-threatening condition and a major cause of both maternal and fetal mortality. The study aims to compare the fetal and maternal outcomes of patients with placental abruption and placental praevia. This was a comparative retrospective case series study conducted in the University Hospital, Tripoli/Libya, during the year 2025. Seventy patients (35 with placenta previa and 35 with placental abruption) who were diagnosed by ultrasound were randomly selected for the study. The following data were obtained from the files: the age, gravidity, parity, history of previous abortion, history of bleeding, maternal outcome, mode of delivery, and fetal outcome. The mean age of the previa group was 28.4 years, and the mean of the abruption group was 26.7 years. Regarding the past obstetric history, the present study showed no significant differences between the two groups in terms of gravidity, parity, and previous abortion. Regarding the bleeding in previous pregnancies, about 5.7% of both groups had APH. PPH were as following 5.7% of the previa group and 11.4% of the abruption group. Only 1 case of the previa group had intrapartum bleeding. about 5.7% of the previa group had hypertension, and about 42.8% of the abruption group had hypertension. Only the abruption group had diabetes, with a percentage of 22.9%. PROM was higher in the abruption group (25.7%) than in the previa group (5.7%), while anemia was higher in the previa group (48.6%) than in the abruption group (28.6%). Regarding fetal outcome, the result showed the following: 2 cases (5.7%) of the previa group died compared to 13 cases (37.1%) of the abruption group. About 54.3% of the previa group neonates needed resuscitation, and about 85.7% of the abruption group needed resuscitation. Nursery admission was almost the same between the two groups (42.9% in the previa group and 40% in the abruption group). About 20% of both groups had respiratory problems. Prematurity was seen in 42.9% of the previa group versus 54.3% of the abruption group. Despite similarities, some patient characteristics and outcomes in APH due to placenta praevia compared to abruptio placenta differ. Abruptio placentae was associated with younger age, hypertension, diabetes, PROM, prematurity, fetal death, and neonatal resuscitation. Placenta previa was associated with older age, anemia, and nursery admission.

Keywords. *Antepartum Hemorrhage, Maternal Outcome, Abruption Placenta, Placental Praevia, Libya.*

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Introduction

The placenta is the life support system of the fetus. Weighing about a pound and measuring about six inches in diameter, it allows the transport of oxygen and nourishment as well as transfer into the fetal circulation of antibodies, metabolites, hormones, and other substances in the maternal bloodstream. Complications involving the placenta, membranes, cord, and fetus usually place the fetus at risk and may also increase maternal risk in the intrapartum period. An important complication is antepartum hemorrhage [1]. It is usually defined as bleeding from the birth canal after the 24th week of pregnancy.1 It can occur at any time until the second stage of labour is complete; bleeding following the birth of the baby is postpartum haemorrhage. No definite cause is diagnosed in about 50% of all women who present with APH; however, placenta praevia and placental abruption are the major identifiable causes. Placenta praevia: insertion of the placenta, partially or fully, in the lower segment of the uterus. See the separate Placenta Praevia article. Placental abruption: premature separation of a normally placed placenta. See the separate Placenta and Placental Problems article. Local causes - eg, vulval or cervical infection, trauma, or tumours [2]. Partner violence is common in pregnancy, occurring in 2.8% of pregnant women in a Canadian population-based study.5 It may result in APH. Women should be asked about this, particularly if there are repeated episodes. See the separate Domestic Violence article. Vasa praevia: bleeding from fetal vessels in the fetal membranes, leading to high risk of fetal haemorrhage and death at rupture of the membranes. See the separate Placenta and Placental Problems article, Uterine rupture: rare but very dangerous for both mother and baby. See the

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separate Uterine Rupture article. Inherited bleeding problems are very rare, occurring in 1 in 10,000 women. 5 Whilst risk factors for APH, in particular for placenta praevia and placental abruption, have been identified, APH cannot be predicted; 70% of cases of placental abruption occur in low-risk pregnancies [3]. There is limited evidence that APH can be prevented, but women should be encouraged to change modifiable risk factors such as smoking, cocaine, and amphetamine abuse [4,5]. A descriptive case series to determine the pattern of intrauterine fetal death before or in the process of labor was conducted at the University Hospital Sindh. Among 697 pregnant women, there were 50 fetal deaths. Out of 697 deliveries, 7.17% of babies were stillborn. The commonest factors were antepartum hemorrhage, 30%, mismanaged labor, 26%, and premature rupture of membrane, 16%.10 A prospective study of analysis of maternal morbidity during the antepartum period in rural areas of Bangladesh, A convenient way of analyzing the risk of different types of disease conditions that women experience during the antenatal period for different age categories. The result of the study indicates that older women are at greater risk of antepartum hemorrhage 30%, fits and convulsions 14%. And the women aged 25 to 29 years are less susceptible to high-risk complications of pregnancy [7].

Methods

Comparative retrospective case series study. This study was conducted in the University Hospital, Tripoli/Libya, during the year 2025. Seventy patients (35 with placenta previa and 35 with placental abruption) who were diagnosed by ultrasound were randomly selected for the study. The following data were obtained from the files: the age, gravidity, parity, history of previous abortion, history of bleeding, maternal outcome, mode of delivery, and fetal outcome. Statistical analysis was computerized using the Statistical Program for Social Sciences (SPSS version 24), which was used for data entry and analysis. Descriptive statistics were used, and all results are presented as frequencies, means, standard ± deviation, and percentages. Quantitative data were analyzed using the Student's t-test. Categorical data were compared using the Chi-square test and Fisher's exact test if appropriate. For numerical data, the Student T test was used. A P-value of less than or equal to 0.05 was considered statistically significant.

Results

The majority of patients in both groups were aged 21–30 years, accounting for 71.4% of placenta previa and 65.8% of placental abruption cases. Multigravidas predominated in both groups (94.3% vs. 88.6%), and most patients were multiparous (85.7% vs. 74.3%). Younger patients (≤20 years) and primigravidas represented the smallest proportions in both groups, with slightly higher percentages observed in the placental abruption group. There were no statistically significant differences between the placenta previa and placental abruption groups regarding age distribution (p = 0.306), gravidity (p = 0.393), or parity (p = 0.232), indicating that both groups were comparable in baseline demographic and obstetric characteristics (Table 1). In the placenta previa group, 28.6% of patients had a history of abortion compared with 17.1% in the placental abruption group (p = 0.260). Regarding bleeding history, antepartum hemorrhage (APH) occurred in 5.7% of patients in both groups, intrapartum hemorrhage was noted only in the placenta previa group (2.9%), and postpartum hemorrhage (PPH) was slightly more frequent in the placental abruption group (11.4% vs. 5.7%). None of these differences was statistically significant.

Table 1. Demographic and Obstetric Characteristics with Statistical Comparison

Variable	Category	Placenta Previa (n = 35)	Placental Abruption (n = 35)	P-value*
Age (years)	≤ 20	2 (5.7)	6 (17.1)	
	21–30	25 (71.4)	23 (65.8)	0.306
	31–40	8 (22.9)	6 (17.1)	
Gravidity	PG	2 (5.7)	4 (11.4)	0.393
	G1-≥G3	33 (94.3)	31 (88.6)	
Parity	P0	5 (14.3)	9 (25.7)	0.232
	P1-≥P3	30 (85.7)	26 (74.3)	
History of Abortion	Yes	10 (28.6)	6 (17.1)	0.260
	No	25 (71.4)	29 (82.9)	
H/OBleeding	APH	2 (5.7)	2 (5.7)	
	IPH	1 (2.9)	0 (0.0)	0.514
	PPH	2 (5.7)	4 (11.4)	

**P-values were calculated using the chi-square test or Fisher's exact test where appropriate. A p-value < 0.05 was considered statistically significant.*

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Hypertension, diabetes, and PROM were significantly more frequent in the placental abruption group compared with the placenta previa group ($p < 0.05$). Anemia was more common in the placenta previa group, though this difference was not statistically significant ($p = 0.093$). Regarding the mode of delivery, all patients with placenta previa underwent cesarean section, while the majority of placental abruption cases were delivered vaginally (62.9%), showing a statistically significant difference ($p < 0.001$) (Table 2). Fetal outcomes differed significantly between the two groups. The proportion of live births was higher in the placenta previa group (94.3% vs. 62.9%; $p = 0.001$), while neonatal deaths were more frequent in the placental abruption group (37.1% vs. 5.7%; $p = 0.001$). Resuscitation was required more often in the placental abruption group (85.7% vs. 54.3%; $p = 0.007$). Nursery admissions and respiratory problems were similar between the groups, and prematurity was slightly higher in the placental abruption group, although this difference was not statistically significant (Table 3).

Table 2. Maternal Outcomes and Mode of Delivery in Placenta Previa and Placental Abruption Groups

Variable	Category	Placenta Previa (n = 35)	Placental Abruption (n = 35)	P-value*
Maternal Outcomes	Hypertension	2 (5.7)	15 (42.8)	<0.001
	Diabetes	0 (0.0)	8 (22.9)	0.004
	PROM	2 (5.7)	9 (25.7)	0.029
	Anemia	17 (48.6)	10 (28.6)	0.093
Mode of Delivery	Vaginal	0 (0.0)	22 (62.9)	<0.001
	Cesarean Section	35 (100)	13 (37.1)	

**P-values were calculated using the chi-square test or Fisher's exact test where appropriate. A p-value < 0.05 was considered statistically significant.*

Fetal Outcome	Placenta Previa (n = 35)	Placental Abruption (n = 35)	P-value*
Alive	33 (94.3)	22 (62.9)	0.001
Dead	2 (5.7)	13 (37.1)	0.001
Resuscitation required	19 (54.3)	30 (85.7)	0.007
Nursery admission	15 (42.9)	14 (40.0)	0.819
Respiratory problem	7 (20.0)	7 (20.0)	1.000
Prematurity	15 (42.9)	19 (54.3)	0.341

**P-values were calculated using the chi-square test or Fisher's exact test where appropriate. A p-value < 0.05 was considered statistically significant.*

Discussion

Antepartum hemorrhage (APH) remains a significant obstetric challenge due to its association with high maternal and fetal morbidity and mortality. Despite the identification of risk factors such as high parity, advanced maternal age, rupture of membranes, hypertension, and previous uterine scarring, adverse outcomes continue to occur. The present study compared maternal and fetal outcomes between patients with placenta previa and placental abruption. No significant differences were observed in maternal age, gravidity, parity, or history of abortion between the groups. The mean age of the placenta previa group was slightly higher, consistent with findings from Naz et al. and studies in Nigeria. Multigravidity, multiparity, and prior abortion were more frequent in the previa group, in line with reports by Siamalambwa. Maternal complications differed between the groups.

Hypertension, diabetes, and PROM were significantly more common in the abruption group, whereas anemia was more frequent in the previa group. These findings align with previous studies reporting higher rates of hypertension and diabetes in patients with placental abruption, and a strong association between PROM and abruption risk. Mode of delivery was also distinct: all patients with placenta previa underwent cesarean section, while 62.9% of those with abruption delivered vaginally. This pattern reflects prior observations by Siamalambwa and studies from Nigeria. Fetal outcomes were worse in the abruption group, with higher rates of neonatal death, prematurity, and resuscitation. Nursery admission was slightly higher in the previa group. These results corroborate prior studies showing increased perinatal mortality and preterm birth in placental abruption compared with placenta previa.

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Conclusion

While both placenta previa and placental abruption are critical causes of antepartum hemorrhage, their clinical profiles and outcomes differ. Placental abruption was more frequently associated with younger maternal age, hypertension, diabetes, premature rupture of membranes, prematurity, fetal death, and the need for neonatal resuscitation. In contrast, placenta previa was linked to older maternal age, anemia, and increased nursery admissions. Both placenta previa and placental abruption should continue to be managed as obstetric emergencies to minimize maternal morbidity and prevent stillbirths. Prevention and early management of hypertensive disorders in pregnancy, including judicious use of low-dose aspirin for high-risk women and prompt treatment of hypertension, are essential to reduce the risk of placental abruption and its adverse outcomes. Accurate and comprehensive documentation in the labour ward delivery book should be emphasized to improve record-keeping, facilitate audits, and enhance the quality of care.

Disclaimer

The article has not been previously presented or published, and is not part of a thesis project.

Conflict of Interest

There are no financial, personal, or professional conflicts of interest to declare.

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