



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

ABRUPTION PLACENTA AND ITS FETOMATERNAL OUTCOMES, STUDY DONE IN GOVERNMENT BANGUR HOSPITAL PALI RAJASTHAN

KEY WORDS:

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ABSTRACT

Introduction: Placental abruption (PA) is a major obstetric complication leading to increased risk of maternal and neonatal morbidity and mortality globally. This study aims to determine the prevalence and its fetomaternal outcome in cases of placental abruption in our population. **Method:** A retrospective descriptive case study was carried out from April 2023 to December 2022, encompassing all patients who were admitted with suspected placental abruption at 28 weeks of pregnancy or later. The study focused on examining various clinical details such as the mothers' age, childbirth history, prenatal risk factors, the gestational age at which delivery occurred, the method of delivery, any complications following childbirth, and the outcomes for the newborns. **Result:** During the study period, 5000 deliveries took place, with placental abruption (PA) occurring in 0.61% of cases. Among the women, 62% disclosed abruption, while 38% concealed it. Antenatal risk factors linked to abruption included diabetes (26%), chronic hypertension (2.2%), pre-eclampsia (19.5%), previous cesarean section (26%), and multiple pregnancies (9.8%). Cesarean section was the predominant delivery mode in 78% of abruption cases. Postpartum hemorrhage affected 33%, and 20% received blood products. **Conclusion:** In conclusion, despite awareness of risk factors, the occurrence of placental abruption remains unpredictable and challenging to prevent. Enhancing obstetric and neonatal units with comprehensive, multidisciplinary management has the potential to enhance outcomes for both mothers and infants in cases of placental abruption.

INTRODUCTION :

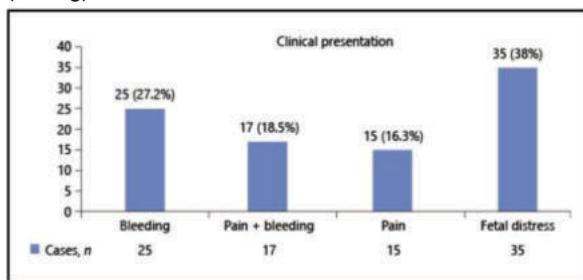
Placental abruption (PA) is the detachment of a normally implanted placenta before delivery, posing a serious obstetric complication with a complex etiology. It occurs in 0.38–1% of singleton births and 1–2% of twin pregnancies, being a significant factor in antepartum hemorrhage (20–25%). PA is linked to heightened risks for both maternal and fetal morbidity and mortality, especially in developing countries where the incidence can reach 4 to 6%. Maternal risks include disseminated intravascular coagulopathy, postpartum hemorrhage, shock, emergency hysterectomy, and renal failure. Fetal complications range from intrauterine growth restriction to stillbirth. Although PA is often unpredictable, identified risk factors encompass a history of PA, maternal age extremes, prior cesarean section, grand multiparity, multiple gestation, diabetes, smoking, hypertension, pre-eclampsia, trauma, and polyhydramnios. While research on PA is extensive globally, limited studies exist in Gulf countries. This retrospective study aims to assess PA prevalence and its consequences in a multinational population within our hospital.

METHOD :

We conducted a retrospective observational study spanning from April 1, 2011, to 2021, reviewing genital tract pathology, bleeding disorders, and missing PA records. Data, encompassing maternal age, gravidity, parity, antenatal care, delivery gestational age, birth weight, and medical complications, were extracted from maternity registers and patient files. Maternal outcomes, including delivery mode, postpartum hemorrhage, blood transfusion, disseminated intravascular coagulation (DIC), intensive care unit admission, and multiorgan failure, were evaluated. Neonatal outcomes, such as preterm birth, low Apgar score, neonatal intensive care unit admission, and perinatal death, were also assessed. The Dubai scientific research ethics committee (DSREC-02/2018_04) approved this study, ensuring data confidentiality.

RESULT:

Results revealed that among cases of placental abruption, 38% were concealed and 62% were revealed. The most common clinical presentation was bleeding, often accompanied by pain. Fetal distress occurred in 35 cases, with PA diagnosed post-delivery through placental inspection (see Fig).



The average maternal age was 32.0 ± 4.8 years, ranging from 22 to 43 years. Of the 92 abruption cases, 80 were booked (with over 3 antenatal clinic visits), while 12 were unbooked. Antenatal risk factors included diabetes in 24 patients (26%), chronic hypertension in 2 (2.2%), pre-eclampsia in 18 (19.5%), multiple pregnancies in 9 (9.8%), and preterm premature rupture of membranes in 7 (7.6%). Among the cases, only 4 (4.3%) had a history of previous abruption, 24 (26%) had a history of previous cesarean section, and 7 (7.6%) experienced intrauterine issues.

Concerning growth restriction (see Table 1), a predominant 78% of patients experiencing abruption underwent cesarean section delivery, in contrast to 22% who opted for vaginal delivery.

The postpartum results, outlined in Table 2, reveal that for 67% of patients, the inpatient hospitalization duration exceeded 4 days, with a median of 5 days (ranging from -2 to 37). This underscores the association of placental abruption with an

extended hospital stay. Importantly, no maternal deaths were recorded throughout the study period

Table 1. Demographic and obstetric risk factors associated with placental abruption

	Cases	Percentage
Maternal age		
20–34 years	61	66
≥35 years	31	34
Antenatal care		
Booked	80	87
Unbooked	12	13
Gravidity		
1	17	18
2–4	46	50
≥5	29	32
Parity		
0	21	23
1–4	60	65
≥5	11	12
Antenatal risk factor		
Diabetes	24	26
Pre-eclampsia	18	19.5
Chronic hypertension	2	2.2
Multiple pregnancy	9	9.8
Previous cesarean section	24	26.1
Preterm premature rupture of membrane	7	7.6
Intrauterine fetal death	7	7.6

Table 2. Postpartum outcome associated with abruption
As far as neonatal outcome is concerned, it is summarized in Table 3. Thirty-five cases (40%) were labelled as fetal distress. Median gestational age of delivery was 36 weeks (range 28–41). Forty-three cases (47%) had a birth weight of less than 2.5 kg. Forty-nine babies were admitted to the neonatal intensive care unit due to prematurity and a hypoxic event. Eight out of 103 babies died of intrauterine fetal death and 1 of the 28 weeks' preterm baby died a neonatal death on day –5 of life accounting for a perinatal mortality rate of 8.7%.

Table 3.

	Cases	Percentage
Postpartum hemorrhage		
Yes	30	33
No	62	67
Need for blood products		
Yes	18	20
No	74	80
Duration of hospital stay		
>4 days	62	67
≤4 days	30	33
Admission to ICU		
Yes	5	6
No	87	94

DISCUSSION

In our research, we identified a 0.61% prevalence of abruption, aligning with the 0.5–1% range reported in India. Developing countries exhibit a higher incidence of 4–5%, likely due to varying study parameters. Abruption is more frequent in women over 35, often tied to multiparity rather than age. Among elderly patients, 64% were para 3 and above. Multiparity and multigravidity correlated with increased abruption compared to primigravida. Bleeding was the

primary presentation in 38% of cases. Diabetes mellitus was a notable antenatal risk factor at 26%, distinct from prior studies, possibly linked to our population's high diabetes prevalence. Chronic hypertension and pre-eclampsia were present in 2% and 19.5%, respectively. Chronic hypertension correlated with a 2.4-fold increased risk of abruption after adjusting for confounders. Placental insufficiency, a consequence of chronic diseases, particularly hypertension and diabetes, contributes to abruption. Preterm premature rupture of membranes before 37 weeks gestation accounted for 7.6% of cases of placental abruption, with risk escalating with decreasing gestational age at membrane rupture.

A previous cesarean section raises the risk of placental abruption (PA) by 30–40% in subsequent pregnancies compared to those with prior vaginal deliveries. In our study, 26% of abruption cases had a history of previous cesarean sections. The risk of PA is 2- to 3-fold higher in twin pregnancies, escalating with increasing multiplicity.

PA poses a substantial risk of maternal morbidity and mortality. PA-induced bleeding may lead to hypovolemic shock and multiorgan failure. Concealed hemorrhage, with significant placental detachment, can result in fetal death and trigger a coagulation cascade leading to disseminated intravascular coagulation (DIC). Our study identified 4 cases of DIC and 2 cases of acute renal injury, both associated with intrauterine fetal death at presentation. Cesarean section incidence was notably higher at 78% in PA cases compared to our hospital's average of 25%, primarily due to fetal distress or a previous multiple uterine scar.

PA contributes to fetal and neonatal morbidity and mortality, particularly linked to preterm birth, low birth weight, and fetal distress. Approximately 40–60% of babies born due to abruption arrive before 37 weeks, with around 14% before 32 weeks. In our cases, 51% were delivered before 37 weeks, 21% before 32 weeks, 47% had a birth weight below 2.5 kg, and 40% experienced fetal distress during the intrapartum period. Forty-nine babies were admitted to the neonatal intensive care unit, and one neonatal death occurred within 5 days. Abruption involving over 50% of the placental surface can lead to fetal death, as evidenced by 8 cases of intrauterine fetal death, with 4 associated with DIC.

Perinatal mortality rates can reach 60%, but in developed countries, the range is lower at 9–12%.

Differential Diagnosis

Distinguishing between placental abruption and placenta previa is crucial in managing pregnancy-related bleeding during the second half. A direct comparison of their presentation in an obstetrical examination includes:

- Placental abruption exhibits sudden and intense onset of symptoms, while placenta previa has a quiet and insidious onset.
- Bleeding in placental abruption may be visible or concealed, whereas in placenta previa, it is external and visible.
- The degree of anemia or shock surpasses visible blood loss in placental abruption, whereas in placenta previa, it equals the blood loss.
- Pain is intense and acute in placental abruption, whereas it is unrelated in placenta previa.
- Uterine tone is firm and board-like in placental abruption, contrasting with the soft and relaxed tone in placenta previa.

CONCLUSION

Placental abruption (PA) is a complex condition with known risk factors, yet its exact cause remains incompletely understood, often making its occurrence unpredictable or unavoidable. While adequate antenatal care, early

identification, and vigilant monitoring of risk factors, coupled with timely intervention, can potentially reduce the risk of PA and improve feto-maternal outcomes, the complexity persists. Despite the majority of our patients being under proper care (87%), we observed four cases of stillbirth among those with adequate antenatal care. This underscores the need for a comprehensive multidisciplinary management approach to mitigate maternal mortality. However, it's important to note that perinatal mortality, primarily occurring in utero, remains a challenge with limited preventability.