

Assessment of Retroplacental Hematoma in first Trimester Bleeding at a Tertiary Centre in Bihar

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Conflict of interest: Nil

Abstract

Background: Intrauterine hematoma is a common pregnancy complication and can occur at any time during the entire pregnancy.

Aims and Objectives: The present study was conducted to assess retroplacental hematoma in first trimester bleeding.

Materials and Methods: Two groups of 70 pregnant women with gestational age ranging from 6 to 14 weeks were formed. Group I were pregnant women who presented with threatened miscarriage, and group II (control) were pregnant women who presented without hematoma in the first trimester. Maternal and neonatal outcomes were assessed.

Results: Pre-term labour was seen in 7 in group I and 2 in group II; IUGR was seen in 5 in group I and 1 in group II; PIH was seen in 4 in group I and 1 in group II; abruption was seen in 6 in group I and 2 in group II; and pre-eclampsia was seen in 3 in group I and 1 in group II. The difference was significant ($P < 0.05$). The mean gestational age at birth was 39.1 weeks in group I and 39.5 weeks in group II. The mean birth weight was 3.6 kg in group I and 4 kg in group II. Meconium-stained liquid was seen in 2 in group I and 4 in group II, and an Apgar score of 1 min < 7 was seen in 18 in group I and 4 in group II, and an Apgar score of 5 min < 7 was seen in 7 in group I and 1 in group II. The difference was significant ($P < 0.05$).

Conclusion: Complications were more common with retroplacental hematoma than in the control group.

Keywords: First Trimester Bleeding, Intrauterine Hematomas, Preterm Labour.

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Introduction

Intrauterine hematoma is a common pregnancy complication and can occur at any time during the entire pregnancy, vaginal bleeding was more common in intrauterine hematoma affected women (5–25% of women in the first trimester).

Pregnancy outcomes are not adversely affected by the presence of an IUH in potentially high-risk patients.[1] The incidence of hematoma in the first trimester is reportedly 4–22%, with smaller hematomas often occurring in the first

trimester, whereas larger intrauterine masses are more common in the second trimester.[2] The chance of miscarriage, stillbirth, abruptio placentae, and premature labor increases in the presence of an ultrasonographically detected subchorionic hemorrhage. Bleeding alone appears to increase the chances of miscarriage. It is unclear whether the subchorionic hemorrhage is the cause of these adverse outcomes or whether it is just a sign of an additional underlying process.[3] Three prior controlled studies have found an association between the presence of intrauterine hematoma and preterm delivery as well as spontaneous abortion, but two of those studies involved a high-risk population.[4] Placental bleedings can be classified according to their location as retroplacental, subchorionic, subamniotic, or intraplacental hematoma. The latter are rare, and the literature on this entity is scarce.[5] Notably, in recent histological research, rounded intraplacental hematoma showed more morphological features than intervillous thrombo-hematomas that were not parasitically situated.[6] Sonographically, intraplacental hematoma is located in the intervillous cavity of the placenta, whereas retroplacental hematoma is located between the basal plate and myometrium, lifting the placental parenchyma toward the amniotic cavity.[7]

Aims & Objectives: The present study was conducted to assess retroplacental hematoma in first-trimester bleeding.

Materials & Methods

The present retrospective case control study was conducted on 70 pregnant women with gestational age between 6 and 14 weeks in the Department of Obstetrics and Gynaecology, Government Medical College, Bettiah, Bihar, India. All participants received signed consent after

being told about the study. Data such as name, age, etc. was recorded. The study duration was January, 2020 to December, 2021. The patients were divided into two groups. Group I were pregnant women who presented with threatened miscarriage, and group II (control) were pregnant women who presented without hematoma in the first trimester. Ultrasonography was performed transabdominally. The size of the gestational sac was recorded, and the position of the hematoma was described with regard to the placental site as being subchorionic, retroplacental, or both. The size of the hematoma in relation to the gestational sac size was also evaluated sonographically and classified as small (less than 20%), medium (20–50%), or large (more than 50%). Maternal and neonatal outcomes were assessed. Gestational hypertension, preeclampsia, abruption, preterm labor, intrauterine growth retardation, mode of delivery, birth weight, Apgar scores, meconium-stained liquor, and neonatal intensive care unit (NICU) were compared. Continuous variables with median and interquartile ranges are presented for nominal variables along with numbers and frequencies. Differences between groups were assessed using ANOVA tests, where appropriate, for numeric variables and the Chi square test for categorical variables. Multivariate logistic regression models were utilized to evaluate the risk variables for intrauterine growth restriction and placental insufficiency. For these studies, coefficient estimates, standard errors, and accompanying p-values are provided. The SPSS 22.0 software and Microsoft Excel 15 were used to perform the statistical analysis. The obtained data were then analyzed statistically. P values under 0.05 were deemed significant.

Results

Table 1: Distribution of patients

Parameters	Group I (35)	Group II (35)	P value
Preterm labour	7	2	0.03
IUGR	5	1	0.02
PIH	4	1	0.01
Abruption	6	2	0.04
Pre-eclampsia	3	1	0.05

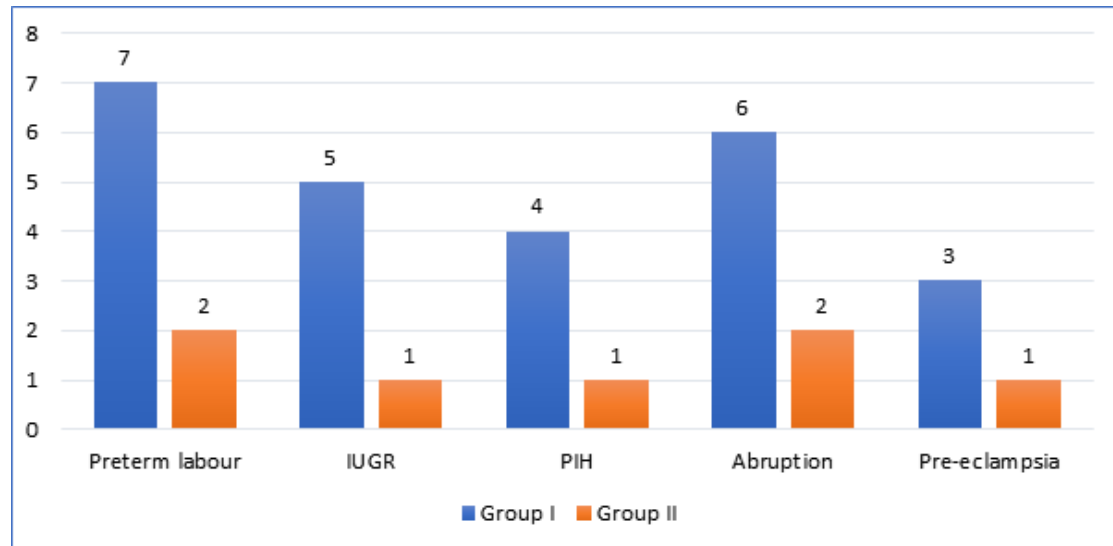
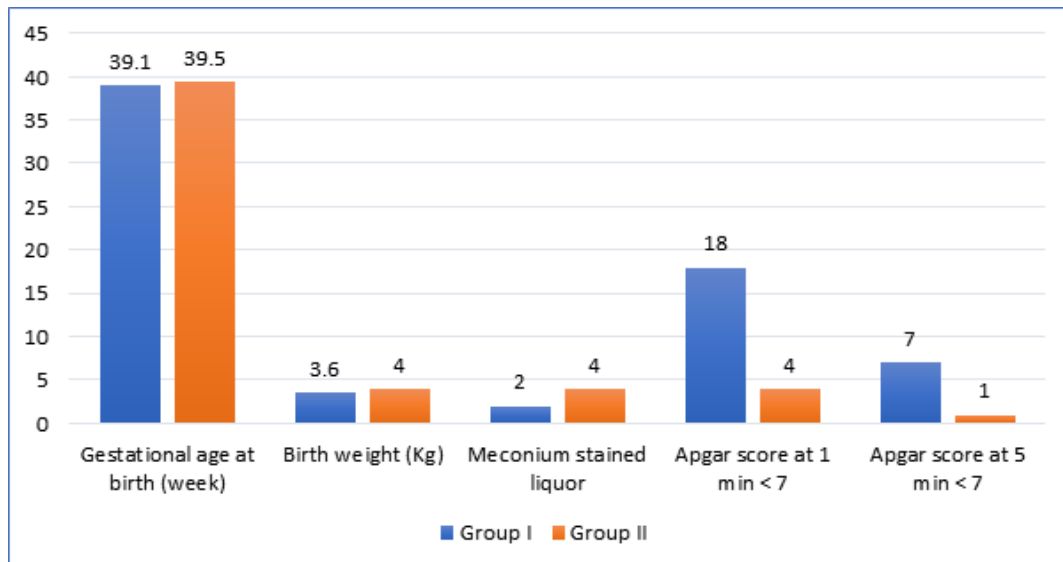
**Graph 1: Distribution of patients**

Table I and Graph I shows that pre-term labor was seen in 7 in group I and 2 in group II, IUGR in 5 in group I and 1 in group II, PIH in 4 in group I and 1 in group II, abruption in 6 in group I and 2 in group II, and pre-eclampsia in 3 in group I and 1 in group II. The difference was significant ($P < 0.05$).

Table 2: Assessment of fetal outcome

Parameters	Group I (35)	Group II (35)	P value
Gestational age at birth (week)	39.1	39.5	0.95
Birth weight (kg)	3.6	4.0	0.82
Meconium-stained liquor	2	4	0.05
Apgar score at 1 min < 7	18	4	0.02
Apgar score at 5 min < 7	7	1	0.01



Graph 2: Assessment of fetal outcome

Table II and Graph II shows that the mean gestational age at birth was 39.1 weeks in group I and 39.5 weeks in group II. The mean birth weight was 3.6 kg in group I and 4 kg in group II. Meconium-stained liquid was seen in 2 in group I and 4 in group II, and an Apgar score at 1 min <7 was seen in 18 in group I and 4 in group II, and an Apgar score at 5 min <7 was seen in 7 in group I and 1 in group II. The difference was significant ($P < 0.05$).

Discussion

Sonographically, intraplacental hematoma is located in the intervillous cavity of the placenta, whereas retroplacental hematoma is located between the basal plate and myometrium, lifting the placental parenchyma toward the amniotic cavity.[8,9] This suggests that intraplacental hematoma is a separate entity and validates our clinical experience that intraplacental hematoma is associated with an extraordinarily increased risk of foetal and maternal adverse events.[10] The present study was conducted to assess retroplacental hematoma in first-trimester bleeding.

We found that pre-term labour was seen in 7 cases in group I and 2 in group II, IUGR in 5 cases in group I and 1 in group II, PIH in 4 cases in group I and 1 in group II,

abruption in 6 cases in group I and 2 in group II, and pre-eclampsia in 3 cases in group I and 1 in group II.

Ott et al.[11] compared intraplacental hematoma-complicated pregnancies to cases with retroplacental hematomas and to a control group. Women with an intraplacental hematoma (9.4%), those with a retroplacental hematoma (4.2%), and controls (0%; $p = 0.007$) experienced second-trimester miscarriage the most commonly. The rates of placental insufficiency, intrauterine growth retardation, premature preterm rupture of the membranes, preterm labour, preterm delivery <37 weeks, and early preterm delivery <34 weeks were highest in the intraplacental hematoma group ($p < 0.05$), followed by the retroplacental hematoma group. Intraplacental hematoma is independently associated with placental insufficiency ($\beta = 4.19$, $p < 0.001$) and intrauterine growth restriction ($\beta = 1.44$, $p = 0.035$) when assessed in multivariate models. Only mothers who had a retroplacental hematoma reported intrauterine foetal deaths ($p = 0.042$).

We observed that the mean gestational age at birth was 39.1 weeks in group I and 39.5 weeks in group II. The mean birth weight was 3.6 kg in group I and 4 kg in group II. Meconium-stained liquid was seen in 2 in

group I and 4 in group II, and an Apgar score at 1 min <7 was seen in 18 in group I and 4 in group II, and an Apgar score at 5 min <7 was seen in 7 in group I and 1 in group II. Karumanchi et al.[12] evaluated the retroplacental hematoma in the first trimester haemorrhage. The first group included 100 pregnant women, and the second group, as controls, included 400 pregnant women.

The gestational sac's size was recorded, and the hematoma's location in relation to the placental site was classified as either subchorionic (located between the chorion and the uterine wall, external to the chorionic leave), retroplacental (behind the placenta, external to the frondosum), or both. Hematoma was significantly associated with frequent miscarriage (RR=1.86, P=0.003), preterm labour (RR=1.79, P=0.005), IUGR (RR=3.20, P=0.001), and abruption (RR=2.62, P=0.003) when pregnancy complications were compared between the hematoma and control groups. On the other hand, no significant association has been found between hematoma and pregnancy-induced hypertension (P=0.79) or preeclampsia (P=0.43). On the other hand, neonates in the hematoma group were around 1.68 times more likely than those in the control group to need admission to the NICU (RR =1.68, P=0.015). In contrast, an uneventful pregnancy was more frequent in the subchorionic group (66%) compared to those with retroplacental hematoma (38%; p< 0.001).

The limitation the study: In present study, there is small sample size.

Conclusion

We found that complications were more with retroplacental hematoma than control group.

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