



Research Article

Association Between Subchorionic Hematoma In The Second Trimester With Abnormal Placenta Insertion

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Abstract: This study aims to evaluate the association between subchorionic hematoma (ScH) and abnormal placental insertion during the second trimester of pregnancy, focusing on its potential impact on pregnancy outcomes. A retrospective analysis was conducted on 50 patients who presented with vaginal bleeding in the second trimester and were diagnosed with ScH at an Obstetrics Department between February and August 2024. Data were collected from ultrasonography reports, clinical profiles, and medical records, specifically documenting placental abnormalities such as placenta previa and circumvallate placenta. Statistical analyses were performed using SPSS 23.0, employing both descriptive and comparative statistical tests. The study found that the mean age of the participants was 28.2 years, with an average gestational age of 25 weeks and 2 days, and a mean hematoma size of 3 cm. Abnormal placentation was identified in 4 cases, including 3 cases of placenta previa marginalist and 1 case of circumvallate placenta, with a higher mean hematoma size (2.3 cm) observed among these cases. Early pregnancy complications noted were miscarriage and partial abortion, while late complications included preterm delivery, premature rupture of membranes (PPROM), and intrauterine growth restriction. The findings suggest that ScH in the second trimester is significantly associated with abnormal placental insertion, increasing the risk of adverse outcomes such as preterm delivery and fetal growth restriction. Early detection and careful monitoring of ScH are essential for improving pregnancy outcomes. Future studies with larger sample sizes and prospective designs are recommended to further explore the relationship between ScH and placental abnormalities, as well as potential intervention strategies.

Keywords: Subchorionic hematoma, Placenta insertion, Gynecology & Obstetrics.

INTRODUCTION

A crescent-shaped, echo-free region located between the uterine myometrium and chorionic membrane is known as a subchorionic hematoma (ScH). 1.3% to 3.1% is the range of incidence [1]. Especially in the first-trimester gestational period, ScH is reasonable for intermittent vaginal bleeding and spotting. Nevertheless, subchorionic hematoma is rare and may cause severe pregnancy-related complications (miscarriage, abruption of the placenta). The exact cause of ScH is unknown, however using low-molecular-weight heparin may be a risk factor in addition to increased assisted reproductive procedures [1]. Vaginal bleeding, clinically spotting to severe, non-specific pelvic pain ScH, can be asymptomatic and may be diagnosed in routine ultrasonography examinations [2].

Hematomas are categorized as tiny, medium, or large based on their diameter, which is comparable to that of the gestational sac [3]. Another classifying factor is the ratio of the ScH surrounding to the gestational sac[4]. Early pregnancy complications associated with subchorionic hematoma (ScH)

include missed miscarriages, full or partial abortions, and late pregnancy complications that have become more common include oligohydramnios, preterm delivery, premature rupture of membranes (PPROM), and intrauterine growth restriction [5-7].

The purpose of this study was to ascertain the connection between subchorionic hematoma, aberrant placentation, and clinical manifestation during the second trimester. In the ScH instances in our investigation, aberrant placentation was more complex.

MATERIAL AND METHODS

The study was conducted retrospectively, using patient files, images, and ultrasonography reports from an obstetric examination. The ultrasonography reports, archive files, and image records of 50 patients in the second trimester with vaginal bleeding at the Obstetrics Department between February 2024 and August 2024 were reviewed. We detected nine patients diagnosed with placenta previa, and one patient with placenta circumvallate

with ScH. Patients included were those with vaginal bleeding in the second trimester and a diagnosis of ScH by ultrasound. Exclusion criteria included pregnancies using assisted reproductive techniques, low-molecular-weight heparin use, and multiple gestations. Patients' ultrasonography reports visual hematoma measurements, and clinic profiles were recorded.

Three ScH cases in total—multiple pregnancies and pregnancies aided by supportive reproduction techniques—were disqualified due to the use of low molecular heparin, progesterone, or acetylsalicylic acid. Anamnesis information was used to gather patient data, including surgical history, age, parity, gravida, and method of pregnancy formation. Complaints made by the patient upon admission were also identified and documented. The ScHs were categorized in our study based on the region that lies between the placenta and the myometrium. The measurements were assessed by the same ultrasound and one obstetrician. The patients were compared based on placenta features, early complication status, hematoma size, and gestational age.

This study was conducted in compliance with the principles of the Declaration of Helsinki. Ethical approval was obtained from the Institutional Review Board of Bahçeşehir University

Statistics

The collected data were analyzed using the SPSS (SPSS Inc., Chicago, USA) 23.0 Package program and Excel (Microsoft Corporation, USA) 2016 versions. Descriptive statistics were used for baseline characteristics. Comparative analyses were performed using t-tests for continuous variables and chi-square tests for categorical variables.

RESULTS

During the study period, 50 pregnant women with ScH and vaginal hemorrhage were seen in the Obstetrics and Gynecology outpatient facility. The women were assessed in the second trimester. The average age of the patients was determined to be 28.2 years, with a range of 21 to 38 (min-max); the mean hematoma diameter was measured to be 3 cm, the mean gestational week to be 25 weeks and 2 days, and the mean gravity to be 2.

Table 1 : Clinical characteristics of patients with ScH

Parameter	Mean Value	Range
Age (years)	28.2	21 – 38
Gestational Week	25 weeks + 2 days	22 – 28 weeks
Gravidity (n)	2	1 – 4
Hematoma Size (cm)	3	1.5 – 5

Abnormal placentation for four patients with Sch; 3 patients diagnosed placenta previa marginalis and 1 patient placenta circumvallate.

Table 2: Clinical Characteristics of Patients with Abnormal Placentation

Parameter	Mean Value	Range
Age (years)	28.1	24 – 35
Gestational Week	26 weeks + 1 day	23 – 28 weeks
Gravidity (n)	2	1 – 3
Hematoma Size (cm)	2.3	2 – 3.5

DISCUSSION

We found similarities between Sch in the second trimester and Sch's complex aberrant placentation characteristics. Numerous research points to the XXX Literature's incidence of SCH in women experiencing vaginal bleeding. According to the Pearlstone analysis, the range of SCH in individuals experiencing vaginal hemorrhage is quite broad, ranging from 4% to 22% [8]. The placenta is considered low-lying when its edge on a transvaginal ultrasonography (TVS) measure between 0.1 and 2.0 cm from the internal cervical os. Placenta previa is diagnosed on TVS when its border covers the internal cervical os. Placenta implantation in the lower part of the uterus can increase vascularity and result in separation brought on by ScH (9). A morphological anomaly is a circumvallate placenta.

Especially early first-trimester bleeding and Sch was found to be at higher risk for pregnancy loss.(10) More research is necessary to fully comprehend the impact of anomalous placentation in the second trimester in complex Sch.

Limitations

This study has several limitations. The small sample size of 50 patients may limit the generalizability of the findings, as it lacks sufficient statistical power to detect smaller differences or broader trends. Additionally, the retrospective design introduces inherent biases, such as recall bias and selection bias, which could affect data accuracy and interpretation. The study did not control for confounding factors like maternal age, gravidity, and comorbidities (e.g., hypertension, diabetes), which might have influenced the outcomes. Moreover, the lack of standardized interventions or treatments for ScH makes it challenging to assess their impact on pregnancy outcomes. Future research with larger, prospective cohorts and controlled variables is needed to validate these findings and minimize biases.

Conflict of Interest: The authors declare that they have no conflict of interest

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Ethical approval: The study was approved by the Bahçeşehir University, Lefkoşa, Cyprus

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