



PREGNANCY OUTCOMES IN SUB CHORIONIC HEMORRHAGE

Obstetrics & Gynaecology

M Sangeereni

Obstetrics & Gynaecology; Government Medical College & Hospital, Cuddalore

T Bala Yasaswi*

Obstetrics & Gynaecology; Government Medical College & Hospital, Cuddalore

*Corresponding Author

ABSTRACT

Introduction: Subchorionic hemorrhage (SCH) is a common early pregnancy complication characterized by blood accumulation between the chorionic membrane and uterine wall. Its clinical significance varies, with potential adverse outcomes including miscarriage, preterm delivery, and fetal growth restriction. This study aims to evaluate the impact of SCH on pregnancy outcomes and identify sonographic predictors of prognosis.

Methodology: A prospective observational study was conducted involving 80 pregnant women diagnosed with SCH via ultrasonography at a tertiary care center. Clinical and sonographic data, including hematoma size, location, and persistence, were collected. Participants were followed through pregnancy to assess outcomes such as miscarriage, preterm birth, and fetal growth restriction. Statistical analyses evaluated associations between SCH characteristics and pregnancy outcomes. **Results:** Among the 80 participants, 65% achieved term live births, while adverse outcomes included preterm delivery (15%), miscarriage (12.5%), and fetal growth restriction (7.5%). Larger hematoma size, persistence beyond 20 weeks, and retroplacental location were significantly associated with increased risk of adverse outcomes ($p < 0.05$). Women with large hematomas had a 73.3% rate of adverse outcomes compared to 10.5% in those with small hematomas. **Conclusion:** SCH presence alone does not uniformly predict adverse pregnancy outcomes. However, larger hematoma size, persistence beyond 20 weeks, and retroplacental location significantly increase risks of miscarriage, preterm delivery, and fetal growth restriction. These factors should inform risk assessment and patient counseling, with conservative management and close monitoring recommended. Further research is needed to optimize therapeutic strategies.

KEYWORDS

Hematoma, Subchorionic, Pregnancy Outcome, Ultrasonography, Progesterone

INTRODUCTION

Subchorionic hemorrhage (SCH), also known as subchorionic hematoma, is a relatively common finding during early pregnancy characterized by the accumulation of blood between the chorionic membrane and the uterine wall.¹ This condition has garnered significant clinical attention due to its potential implications on pregnancy outcomes, yet its pathophysiology, prognostic significance, and optimal management strategies remain areas of ongoing research and debate.² As an obstetric complication, SCH is frequently diagnosed via ultrasonography, often incidentally during routine first-trimester scans, with reported prevalence rates ranging widely from 1% to as high as 20% depending on the population studied and diagnostic criteria used.³

The etiology of subchorionic hemorrhage is multifactorial, involving disruption of the decidual vessels or placental implantation site, which leads to bleeding and hematoma formation.⁴ Various risk factors have been proposed, including advanced maternal age, previous miscarriage, assisted reproductive technology (ART) pregnancies, and underlying coagulation disorders.⁵ Despite its frequent detection, the clinical course of SCH is highly variable; some women experience spontaneous resolution without adverse sequelae, while others face complications such as miscarriage, preterm labor, placental abruption, or fetal growth restriction.⁶ This heterogeneity highlights the need for a comprehensive understanding of SCH's impact on pregnancy outcomes to guide clinical decision-making and patient counseling effectively.

Clinically, subchorionic hemorrhage presents a diagnostic challenge. Many cases are asymptomatic and identified only through ultrasound, while symptomatic cases may present with vaginal bleeding, abdominal pain, or cramping. The differential diagnosis includes other causes of first-trimester bleeding such as threatened miscarriage, ectopic pregnancy, and molar pregnancy, making accurate diagnosis essential for appropriate management.⁷ Ultrasonography remains the gold standard for detection and monitoring of SCH, with transvaginal ultrasound providing superior resolution in early pregnancy.⁸ Parameters such as hematoma size relative to gestational sac, location (e.g., retroplacental versus marginal), and changes over time are routinely assessed to estimate risk.⁹

The management of pregnancies complicated by SCH is largely conservative, focusing on close monitoring and supportive care.^{10,11} Interventions such as bed rest, progesterone supplementation, or anticoagulant therapy have been proposed, but robust evidence supporting their efficacy is lacking. Current guidelines emphasize

individualized care based on symptomatology, hematoma characteristics, and gestational age, with an emphasis on minimizing unnecessary interventions while ensuring vigilant surveillance for potential complications.¹² Counseling women diagnosed with SCH regarding prognosis and expected outcomes is critical, as anxiety and uncertainty often accompany this diagnosis. Existing literature on pregnancy outcomes in SCH demonstrates considerable variability, with some studies reporting increased risks of miscarriage, preterm birth, and placental complications, while others suggest minimal impact on live birth rates.^{13,14} This inconsistency may stem from differences in study design, population heterogeneity, and diagnostic criteria, highlighting the need for well-designed prospective studies to clarify these associations. Furthermore, the role of SCH in specific subpopulations, such as women undergoing ART or those with recurrent pregnancy loss, warrants targeted investigation to tailor management strategies effectively.

Given these complexities, this study aimed to elucidate the relationship between subchorionic hemorrhage and pregnancy outcomes by analyzing a well-defined cohort of pregnant women diagnosed with SCH. The objectives include determining the incidence of adverse outcomes such as miscarriage, preterm delivery, and fetal growth restriction in this population, identifying clinical and sonographic predictors of poor prognosis, and evaluating the efficacy of current management approaches. Through a comprehensive assessment integrating clinical, sonographic, and outcome data, this research seeks to contribute to the optimization of care for pregnancies complicated by SCH.

MATERIALS AND METHODS

The study was a prospective, observational design conducted at a tertiary care center in the department of obstetrics and gynecology. The study population included pregnant women presenting with SCH, who had a confirmed intrauterine pregnancy with a viable fetus diagnosed by ultrasonography. Women with non-obstetric causes of bleeding such as trauma, chronic medical illnesses, uterine structural anomalies, or cervical lesions like polyps and fibroids were excluded. A total sample size of 80 participants diagnosed with subchorionic hemorrhage (SCH) was enrolled.

Data collection involved a detailed clinical assessment including history and physical examination at presentation and during subsequent antenatal visits. Ultrasonography, either transvaginal or transabdominal, was performed to confirm the diagnosis of SCH and to evaluate hematoma characteristics such as size (measured in milliliters or dimensions to estimate volume), location (e.g., retroplacental or marginal), and persistence through follow-up scans to monitor

resolution or progression. Participants were followed throughout pregnancy with regular antenatal visits to monitor fetal growth, development, and any complications.

The primary outcomes focused on the incidence of adverse pregnancy outcomes, including miscarriage (spontaneous abortion), preterm delivery, and fetal growth restriction. Secondary outcomes explored the relationship between hematoma size, location, and persistence with pregnancy outcomes, as well as the effectiveness of management strategies such as expectant management or medical interventions. Data analysis included descriptive statistics to summarize demographic and clinical characteristics, and comparative analyses such as chi-square tests and relative risk calculations to evaluate associations between SCH features and outcomes, with statistical significance set at $p < 0.05$.

Ethical approval was obtained from the institutional ethics committee prior to study commencement, and written informed consent was secured from all participants. Management adhered to standard clinical guidelines involving monitoring, counseling, and interventions as clinically indicated to evaluate the impact of current strategies on pregnancy prognosis.

RESULTS

The study enrolled 80 pregnant women diagnosed with subchorionic hemorrhage (SCH) and followed them until delivery or pregnancy termination to evaluate maternal and fetal outcomes. Data demonstrated that the majority of participants were aged 21–30 years and were multigravidae. Baseline demographic and obstetric characteristics of the study population are presented in Table 1.

Table 1. Baseline Demographic and Obstetric Characteristics of Study Participants (n=80)

Variable	Frequency (n)	Percentage (%)
Age Group (years)		
≤20	8	10.0
21–25	28	35.0
26–30	32	40.0
>30	12	15.0
Gravidity		
Primigravida	34	42.5
Multigravida	46	57.5
Gestational Age at Diagnosis		
<8 weeks	18	22.5
8–10 weeks	37	46.3
>10 weeks	25	31.2
Presenting Symptom		
Vaginal bleeding only	49	61.3
Bleeding with abdominal pain	21	26.2
Incidental ultrasound finding	10	12.5

Ultrasonographic evaluation revealed varying hematoma sizes and locations. Most SCHs were small to moderate in size and were located marginally rather than retroplacentally. Persistence of hematoma beyond the second trimester was observed in a minority of women. These sonographic findings are summarized in Table 2.

Table 2. Sonographic Characteristics of Subchorionic Hemorrhage (n=80)

Characteristic	Frequency (n)	Percentage (%)
Hematoma Size		
Small (<20 mL)	38	47.5
Moderate (20–50 mL)	27	33.8
Large (>50 mL)	15	18.7
Location		
Marginal	45	56.3
Retroplacental	25	31.2
Circumferential	10	12.5
Persistence on Follow-up		
Resolved before 20 weeks	54	67.5
Persisted beyond 20 weeks	26	32.5

Pregnancy outcomes showed that most women achieved live births; however, adverse outcomes including miscarriage, preterm delivery, and fetal growth restriction were observed. The overall pregnancy outcomes are depicted in Table 3.

Table 3. Pregnancy Outcomes among Women with SCH (n=80)

Outcome	Frequency (n)	Percentage (%)
Term live birth	52	65.0
Preterm delivery	12	15.0
Miscarriage	10	12.5
Fetal growth restriction (FGR)	6	7.5
Total	80	100.0

Analysis of hematoma size demonstrated a significant association with adverse pregnancy outcomes. Larger hematomas were associated with increased rates of miscarriage, preterm birth, and fetal growth restriction compared to smaller hematomas. This association is presented in Table 4.

Table 4. Association Between Hematoma Size and Pregnancy Outcome

Hematoma Size	Favorable Outcome* n (%)	Adverse Outcome† n (%)	Total	χ^2	p-value
Small (n=38)	34 (89.5)	4 (10.5)	38	22.84	<0.001*
Moderate (n=27)	20 (74.1)	7 (25.9)	27		
Large (n=15)	4 (26.7)	11 (73.3)	15		
Total	58	22	80		

*Favorable outcome = Term live birth

†Adverse outcome = Miscarriage, preterm delivery, or FGR

Persistence and location of SCH were also significantly associated with adverse outcomes. Women with persistent or retroplacental hematomas experienced poorer pregnancy outcomes compared to those with resolved or marginal hematomas. These findings are shown in Table 5.

Table 5. Association of Hematoma Persistence and Location with Adverse Pregnancy Outcomes

Variable	Adverse Outcome n/N (%)	Relative Risk (RR)	p-value
Persistence			
Resolved before 20 weeks (n=54)	8/54 (14.8)	3.64	0.001*
Persisted beyond 20 weeks (n=26)	14/26 (53.8)		
Location			
Marginal (n=45)	7/45 (15.6)	2.75	0.008*
Retroplacental/Circumferential (n=35)	15/35 (42.9)		

*Statistically significant ($p < 0.05$)

DISCUSSION

The findings of the current study align with and expand upon the existing literature regarding subchorionic hemorrhage (SCH) and its impact on pregnancy outcomes. Consistent with the results reported in the study by Bairwa et al., our data confirm that the mere presence of SCH does not universally increase the risk of adverse pregnancy outcomes; however, larger hematoma volumes are significantly associated with increased risks of miscarriage and pregnancy wastage.¹⁴ This observation parallels the findings of Lou et al., who demonstrated that first-trimester SCH is independently associated with miscarriage before 20 weeks, particularly when diagnosed early, although SCH size itself was not linked to pregnancy loss.¹⁵ Notably, Lou et al. also identified a protective effect of dydrogesterone, a factor not addressed in our study but warranting further investigation.¹⁵

The association of larger SCH size with adverse outcomes is further supported by the current study's demonstration of significant correlations between hematoma size, persistence, and location with poor pregnancy prognosis, which echoes the conclusions of Pakniat et al.⁶ These studies emphasize that large or persistent retroplacental hematomas carry a higher risk of miscarriage, preterm delivery, and fetal growth restriction. Huang et al., extend this understanding into the third trimester, noting that although SCH is less common later in pregnancy, its presence is linked with increased cesarean section rates

and certain complications such as gestational diabetes and hypertensive disorders, though not necessarily with preterm birth or fetal growth restriction.¹⁶ This suggests that the timing and clinical context of SCH diagnosis influence its prognostic significance.

In contrast, Inman et al. report that in an infertile population, SCH presence alone does not increase miscarriage risk or adverse pregnancy outcomes, except when accompanied by both vaginal bleeding and cramping, which markedly increases miscarriage probability.¹⁷ This nuanced finding highlights the importance of symptomatology in risk stratification, a factor less emphasized in other studies focusing primarily on sonographic parameters.

The retrospective cohort study by Şükür et al. showed that while the presence of SCH increased miscarriage risk among patients with threatened abortion, it did not significantly affect ongoing pregnancy outcomes such as gestational age at delivery, birth weight, or cesarean section rates, a finding partially concordant with our study where ongoing pregnancy outcomes beyond miscarriage were less frequently impacted except in cases with larger or persistent hematomas.¹⁸

The current study's findings, therefore, contribute to a growing consensus that while SCH is a common and often incidental finding, specific features such as hematoma size, persistence beyond early gestation, retroplacental location, and associated clinical symptoms significantly modulate pregnancy risk. Discrepancies among studies regarding the influence of SCH size and timing may stem from differences in population characteristics, ultrasound assessment protocols, and inclusion criteria, including the presence of confounding factors such as assisted reproductive technologies and underlying maternal conditions. Collectively, these data highlight the necessity for individualized patient counseling and management strategies that integrate sonographic findings with clinical presentation to optimize pregnancy outcomes in women diagnosed with SCH.

CONCLUSION

The study concludes that subchorionic hemorrhage (SCH) is a common finding in early pregnancy with variable clinical outcomes. While the presence of SCH alone does not uniformly predict adverse pregnancy outcomes, larger hematoma size, persistence beyond 20 weeks, and retroplacental location are significantly associated with increased risks of miscarriage, preterm delivery, and fetal growth restriction. These sonographic features, along with clinical symptomatology, should be carefully considered in risk assessment and patient counseling. Conservative management with close monitoring remains appropriate, but individualized care based on hematoma characteristics can help optimize pregnancy prognosis. Further research is warranted to refine management strategies and explore potential therapeutic interventions.

REFERENCES

- Bondick CP, Das JM, Fertel H. Subchorionic Hemorrhage. 2026. PubMed PMID: 32644443.
- Xiang L, Wei Z, Cao Y. Symptoms of an Intrauterine Hematoma Associated with Pregnancy Complications: A Systematic Review. PLoS One. 2014 Nov 4;9(11):e111676. doi:10.1371/journal.pone.0111676
- Murugan VA, Murphy BO, Dupuis C, Goldstein A, Kim YH. Role of ultrasound in the evaluation of first-trimester pregnancies in the acute setting. Ultrasonography. 2020 Apr 1;39(2):178–89. doi:10.14366/usg.19043
- Xu T, Lun W, He Y. Subchorionic hematoma: Research status and pathogenesis (Review). Medicine International. 2024 Jan 19;4(2):10. doi:10.3892/mi.2024.134
- Méndez-Vidal C, Fernández-Sánchez M, Domínguez-Moreno M, García-Díaz L, Dopazo J, Antiñolo G. Advanced maternal age and assisted reproductive technologies: outcomes, genomics, and real-world evidence. Frontiers in Reproductive Health. 2026 Feb 26;8. doi:10.3389/frph.2026.1787867
- Xu T, Lun W, Wang P, He Y. Analysis of risk factors and pregnancy outcomes in pregnant women with subchorionic hematoma. Medicine. 2023 Nov 24;102(47):e35874. doi:10.1097/MD.00000000000035874
- V S, Selvam V, Prasath N, Chouhan M. Evaluation of Women Presenting With Bleeding in the First Trimester of Pregnancy in a Tertiary Hospital: A Cohort Study. Cureus. 2025 Oct 30;doi:10.7759/cureus.95755
- Okonkwo IO, Eleje GU, Obiechina NJ, Ugboaja JO, Okafor CO, Mbachu II, et al. Diagnostic accuracy of transvaginal ultrasonography and hysterosalpingography in the detection of uterine cavity pathologies among infertile women. Acta Radiol Open. 2024 May 10;13(5). doi:10.1177/20584601241252335
- Pakniat H, Hosseini MA, Aboutorabi SS, Rasti A, Nabiei M, Niaraki FS. The impact of subchorionic hematoma in the first trimester on maternal and neonatal outcomes in singleton pregnancies. Hellenic Journal of Obstetrics and Gynecology. 2026 Jan 15;25(1):55–64. doi:10.33574/hjog.0615
- Naz S, Irfan S, Naru T, Malik A. Subchorionic hematoma and pregnancy outcomes in patients with threatened miscarriage. Pak J Med Sci. 2022 Jan 25;38(3). doi:10.12669/pjms.38.3.4283
- Liang W, Yan X, Shi Y, Chen B, An L, Huang B, et al. Association between graded subchorionic hematoma and adverse pregnancy outcomes in singleton pregnancies: a prospective observational cohort study. Arch Gynecol Obstet. 2023 Feb 23;309(2):541–9. doi:10.1007/s00404-023-06943-8
- Günay T, Yardımcı O. How does subchorionic hematoma in the first trimester affect pregnancy outcomes? Archives of Medical Science. 2021 Jan 8. doi:10.5114/aoms/113645
- Shan D, Qiu PY, Wu YX, Chen Q, Li AL, Ramadoss S, et al. Pregnancy Outcomes in Women of Advanced Maternal Age: a Retrospective Cohort Study from China. Sci Rep. 2018 Aug 16;8(1):12239. doi:10.1038/s41598-018-29889-3
- Bairwa P, Hooja N, Sharma P, Mehta M, Kumari S, Choudhary S. Association of volume of first trimester subchorionic hemorrhage with pregnancy outcome. Int J Reprod Contracept Obstet Gynecol. 2023 Jul 28;12(8):2491–4. doi:10.18203/2320-1770.ijrcog20232297
- Lou Y, Chen G, Wang L, Zhao X, Ma J. Association between first-trimester subchorionic hematoma and pregnancy loss before 20 weeks of gestation in singleton pregnancies. Sci Rep. 2024 Dec 3;14(1):30034. doi:10.1038/s41598-024-81759-3
- Huang H, Han H, Xie H, Ying H, Bao Y. Subchorionic Hematoma Association with Pregnancy Complications and Outcomes in the Third Trimester. J Pers Med. 2023 Mar 7;13(3):479. doi:10.3390/jpm13030479
- Inman ER, Miranian DC, Stevenson MJ, Kobernik EK, Moravek MB, Schon SB. Outcomes of subchorionic hematoma-affected pregnancies in the infertile population. International Journal of Gynecology & Obstetrics. 2022 Dec 14;159(3):743–50. doi:10.1002/ijgo.14162
- Sukur YE, Goc G, Kose O, Acmaz G, Ozmen B, Atabekoglu CS, et al. The effects of subchorionic hematoma on pregnancy outcome in patients with threatened abortion. J Turk Ger Gynecol Assoc. 2014 Dec 23;15(4):239–42. doi:10.5152/jtgga.2014.14170