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Subchorionic Hemorrhage in First Trimester and in Second Trimester

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Abstract: ***Subchorionic hemorrhage (subchorionic hematoma) is the most common sonographic abnormality in the presence of a live embryo. Subchorionic hemorrhage is bleeding beneath the chorion membranes that enclose the embryo in the uterus and appears to occur because of partial detachment of the chorion membranes from the wall of the uterus. Results: The present study reported 50 cases 76% (38 patients) with first trimester bleeding and 24% (12 patients) in 2nd trimester bleeding. This shows that subchorionic haemorrhage is more common in first trimester. The study showed most of the patients with subchorionic haemorrhage were in early reproductive age rather than the late one. 40% cases were from the age group 20-24 years. Maximum number of SCH patients were primi gravida. Distribution of SCH patients according parity was not found to be significant with maximum patients (52%) had a POG OF 8-12 weeks at the time of admission. There were total of 3 cases (6%) of anaemia for which blood was transfused. Out of 3 patients, 2 cases were diagnosed with SCH in first trimester and 1 in second trimester. Conclusion: Subchorionic hemorrhage is more in cases of 1st trimester as compared to 2nd trimester. The most important factor which effects the outcome is gestational age at which SCH was diagnosed and volume of hematoma.***

Keywords: Subchorionic hemorrhage, First trimester bleeding, Pregnancy outcome, Gestational age, Hematoma volume

1. Introduction

subchorionic hematoma or subchorionic clot is a “bag of waters” within the uterus is composed of two layers, called the chorion and the amnion. The inner layer, closer to the baby, is the amnion. The outer layer, which is normally against the uterine wall, is the chorion. The term “subchorionic clot” or “subchorionic hematoma” describes a blood clot between the bag of waters and the uterus.

Subchorionic hemorrhage (subchorionic hematoma) is the most common sonographic abnormality in the presence of a live embryo. Subchorionic hemorrhage is bleeding beneath the chorion membranes that enclose the embryo in the uterus and appears to occur because of partial detachment of the chorion membranes from the wall of the uterus. Vaginal bleeding affects 25% of all women during the first half of pregnancy and is a common reason for first-trimester ultrasonography. Subchorionic hematoma occurs in 18-22% of intrauterine pregnancies with vaginal bleeding.[1]

Sonographic visualization of a subchorionic hematoma is important in a symptomatic woman because pregnant women with a demonstrable hematoma have a prognosis worse than women without a hematoma. However, small, asymptomatic subchorionic hematomas do not worsen the patient's prognosis. [2-3,5]

The subchorionic hemorrhage (subchorionic hematoma) collects between the uterine wall and the chorionic membrane and may leak through the cervical canal. Later in the first trimester and early second trimester, the subchorionic hematoma may partially strip the developing placenta away from its attachment site. Therefore, the prognosis of patients with this type of hematoma is worse than the prognosis of patients with hematoma early in first trimester. [7-8]

Heller et al reported earlier in pregnancy a subchorionic hemorrhage detected, the higher the rate of pregnancy failure and the rate of demise for hematomas diagnosed at or before 7 weeks was 19.6%, versus 3.6% for those diagnosed after 8 weeks. The overall rate of first-trimester pregnancy failure was 12.0%.[6]

Small hematomas on the surface of the placenta (subamniotic hemorrhage) are common in first trimester at 18-20 weeks on ultrasound, but hemorrhages identified beneath the placenta, at the edge of the placenta, or behind an isolated area of the fetal membranes is of greater significance. Large intrauterine hematomas in the second trimester may compromise maternal health.[9]

Tuuli MG et al meta-analysis on women with subchorionic hematoma observed hematomas were associated with an increased risk of early and late pregnancy loss, abruption, and preterm premature rupture of membranes. Sequela of subchorionic hemorrhage includes extra spontaneous abortion per 11 women and one extra stillbirth per 103 women.[10]

Hence the present study was done at our tertiary care centre to assess subchorionic hemorrhage in first trimester and in second trimester.

2. Methodology

Women admitted to the Department of Obstetrics and Gynaecology, District Hospital, Chitradurga, with present or past history of clinical diagnosis of subchorionic hemorrhage condition during 1st and 2nd trimester.

Study design: A Cross Sectional Study.

Period of study: 1 Year

Place of study: Dept. of Obstetrics & Gynecology, District Hospital, Chitradurga.

Sample size: 50

Patients who experienced vaginal bleeding between 10 and 20 weeks of gestation, SCH were demonstrated on ultrasound examination. In 15 patients the outcome was favorable (FTVD) and in 15 patients the outcome was unfavorable (7 preterm births, 4 stillbirths, 3 spontaneous abortions, 1 therapeutic abortion). The major prognostic factor related to pregnancy outcome was volume of hematoma and to lesser extent the relative volume of the hematoma.

Method of collection of data:

Inclusion criteria:
- Single viable gestation
- Patients with vaginal bleeding and in whom subchorionic hematoma and a live fetus had been identified.

Exclusion criteria:
- Multiple gestation
- Nonviable fetus (blighted ovum, missed abortion)
- Early fetal death
- Molar pregnancy (partial/complete)

3. Method

On admission to the labour room, a complete, but quick history was taken. Information regarding her identity, age, address, socioeconomic status and dietary habits was noted. Special enquiry was made, regarding smoking and drug use, history regarding her previous antenatal checkups, The kind of antenatal care received and number of antenatal visits were noted.

History of present complaint:

Antenatal checkups, the kind of antenatal care received and the number of antenatal visits was noted. History was taken in detail, so as to ascertain the amount and character of bleeding, any initiating factors such as trauma or coitus, previous vaginal bleeding, association of abdominal pain or labour pains; duration between time of onset of bleeding and time of admission and distance traversed to get admitted to the hospital.

Period of gestation was calculated from her last menstrual period (nearest number of weeks from the patient's last menstrual period to time of presentation) or previous ultrasonography.

Obstetric History
History was taken regarding the number of previous pregnancies and their outcome, number of live issues, complication during previous pregnancies, mode of delivery and complications during and after deliveries.

Any previous: history of bleeding PV was specifically enquired.

4. Results and Discussion

Intrauterine hematoma is not an uncommon finding at ultrasound scanning in the early stages of pregnancies. Pre-existing medical conditions, autoimmune diseases and immunological factors have been associated with intrauterine hematoma, but the etiology of this condition is still unknown. SCH is defined as a collection of blood between the uterine wall and chorionic membrane and it is believed to result from Subchorionic bleeding caused by partial detachment of trophoblast from the uterine wall; this condition was diagnosed only by USG.

The present study reported 50 cases 76% (38 patients) with first trimester bleeding and 24% (12 patients) in 2nd trimester bleeding. This shows that subchorionic haemorrhage is more common in first trimester. The study showed most of the patients with subchorionic haemorrhage were in early reproductive age rather than the late one. 40% cases were from the age group 20-24 years.

Maximum number of SCH patients were primi gravida. Distribution of SCH patients according parity was not found to be significant with maximum patients (52%) had a POG OF 8-12 weeks at the time of admission. Outcome of the pregnancy depends on gestational age at time of diagnosis of subchorionic haemorrhage. Prognosis being worst if bleeding occurs <8 weeks. Priyanka R et al[11] similar study showed 50 cases 76% (38 patients) had come with first trimester bleeding and 24% (12 patients) 2nd trimester bleeding and observed most of the patients with subchorionic haemorrhage were in early reproductive age rather than late 40% cases were from the age group 20-24yrs and maximum number of SCH patients was primi gravida. Günay T et al[12] case control study observed Subchorionic hematoma was associated with significantly lower gestational age at delivery and higher rate of first trimester bleeding compared with the control group, regardless of the size of the hematoma.

Similarly Narayanan S et al[13] prospective observational study found majority of SCH were detected in the first trimester, indicating that SCH is predominantly an early pregnancy finding and subchorionic hematoma was more frequently observed among primigravida women compared to multigravida women and nearly half of SCH cases were diagnosed between 8 and 13 weeks of gestation.

The present study found 92.3 % of patients had abortion if SCH is >10 ml, only 4.3 % patient had abortion if SCH <1ml. 34.2% of patients in first trimester had abortion as compared to 8.3% in second trimester and 65.8% of the patients had reached viability period in first trimester. There were total of 3 cases (6%) of anaemia for which blood was transfused. Out of 3 patients, 2 cases were diagnosed with SCH in first trimester and 1 in second trimester. There was one case of abruptio placentae. There were no other complications seen.

Günay T et al[12] case control study showed Placental abruption and early pregnancy loss were significantly more common in SCH-II and -III groups than in the control group. SCH-III group was associated with a significantly higher rate of <37 gestational weeks at delivery, first trimester vaginal bleeding,

early pregnancy loss, IUGR and preterm delivery compared to both lesser size hematoma and control groups.

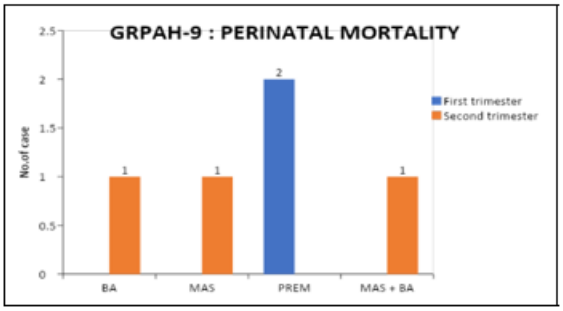
Priyanka R et al[11] study found maternal condition during ante, intra and postpartum period and during puerperium were 3 cases (6%) of anaemia for which blood was transfused. Out of 3 patients, 2 cases were diagnosed with SCH in first trimester and 1 in second trimesters. There was one case of abruptio placentae.

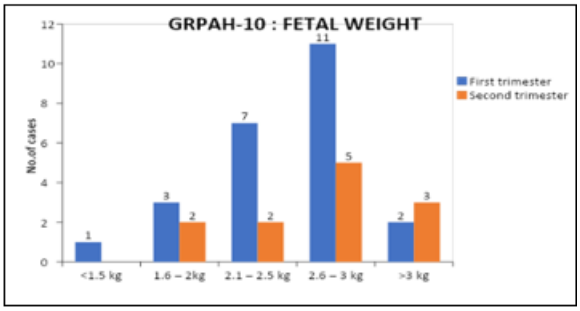
The present study observed most of the patients (58.3%) had normal perinatal outcome. 7 cases (19.4%) showed premature, birth asphyxia was seen in 1 case (2.7%) of cases. There were total of 5 perinatal mortality. 2 babies were premature and other babies had BA, MAS.

Tuuli MG et al[10] demonstrated an increased risk of miscarriage and preterm delivery in patients with SCH, which differs from the current study. Hashem A et al.[15] also reported a higher incidence of adverse outcomes such as miscarriage and placental abruption.

In all cases, 44.4% had apgar score 4-7 at 1 minute and apgar score >8 were seen in 47.22% cases at 1 minute. 36.1% had apgar 6-8 at 5 min and >8 in case of 47.2%. Priyanka R et al[11] study showed 44.4% had apgar score 4-7 at 1 minute and apgar score >8 were seen in 47.22% cases at 1 minute. 36.1% had apgar 6-8 at 5 min and >8 in case of 47.2%

44.5% of the babies had birth weight of 2.6-3kg only 1 baby had birth wt of <1.5 kg (preterm delivery). Priyanka R et al[11] found 44.5% of the babies had birth weight of 2.6-3 kg only 1 baby had birth wt of <1.5 kg (preterm delivery).





Narayanan S et al[13] prospective observational study found most SCH cases were asymptomatic and detected incidentally on ultrasound, while vaginal bleeding was the most common symptom among symptomatic patients. Most of the women with SCH had favourable pregnancy outcomes, with more than two-thirds delivering at term and demonstrated that larger subchorionic hematomas were significantly associated with higher rates of abortion, emphasizing hematoma size as an important prognostic factor.

Pakniat H et al[14] case control study assessing potential relationship between SCH during the first trimester of pregnancy and maternal and neonatal outcomes in singleton pregnancies found no significant differences identified between the SCH and control groups regarding other complications such as preeclampsia, Apgar scores at 1 and 5 minutes, placenta accreta, premature rupture of membranes (PROM), intrauterine growth restriction (IUGR), or low birth weight (LBW) (P>0.05). Moreover, 34 women (13.5%) had hematomas measuring greater than 3 cm in size, while 215 women (85.7%) had hematomas of 3 cm or smaller.

5. Recommendations

Based on the findings, it is recommended that mothers with SCH receive enhanced monitoring and specialized care to prevent known complications of this condition and avoid adverse pregnancy outcomes. This targeted approach should focus particularly on the early detection and management of preterm labor risks and potential miscarriage, while maintaining standard obstetric care for other pregnancy parameters that showed no significant association with SCH. The implementation of such specialized monitoring protocols could significantly improve maternal and neonatal outcomes in SCH-affected pregnancies.

6. Conclusion

Subchorionic hemorrhage is more in cases of 1st trimester as compared to 2nd trimester. The most important factor which effects the outcome is gestational age at which SCH was diagnosed and volume of hematoma. Chances of abortion are more if diagnosed in 1st trimester. There is no effect on perinatal outcome when patient reached term. Though anemia is not reported to be directly related to the SCH. This is because pregnancy in itself is a state of hemodilution and negative iron balance, and most of the patients presents with anemia the relationship between maternal anemia and SCH is not significant until and unless the amount / volume of SCH is large. Therefore, we can say there is no significance of SCH affecting the maternal outcome. Early diagnosis, bed rest, use of progesterone, regular antenatal checkup will help in continuing the pregnancy till term with good fetal outcome.

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