

Significance of Subchorionic Hematomas in Patients with Threatened Abortion: A Sonographic Study

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SUMMARY

SIGNIFICANCE OF SUBCHORIONIC HEMATOMAS IN PATIENTS WITH THREATENED ABORTION: A SONOGRAPHIC STUDY

Objective: Threatened abortion is one of the most common complications of early pregnancy. It is important to determine whether the pregnancy will continue or not. The aim of this study is to evaluate long-term significance and prognostic importance of the presence and the size of subchorionic hematomas in patients with threatened abortion.

Method: 101 women with a living fetus of more than 7 weeks are studied. Case group (n=51) was composed of the patients with subchorionic hematomas. 50 healthy pregnant women with no complaint served as controls. Student's t test was used to compare means.

Results: Abortion rate was 27.4 % in case group whereas controls had no abortion (P < .05). Preterm and small-for-gestational-age deliveries were not different significantly between two groups. Abortion rate was increased with the increase of the hematoma volume, whereas preterm and small-for-gestational-age deliveries were not.

Conclusion: Presence of the subchorionic hematoma and growth of its volume significantly increases the abortion rate.

Key Words: Subchorionic hematoma, Threatened abortion, Ultrasonography

ÖZET

SUBKORYONİK HEMATOMUN DÜŞÜK TEHDİDİ OLGULARINDA ÖNEMİ: SONOGRAFİK BİR ÇALIŞMA

Amaç: Düşük tehdidi erken gebeliğin en sık komplikasyonlarından biridir. Gebeliğin devam edip etmeyeceğinin belirlenmesi önemlidir. Bu çalışmanın amacı düşük tehdidi olan hastalarda subkoryonik hematoma varlığının ve boyutunun uzun dönem belirleyiciliğini ve prognostik önemini değerlendirmektir.

Yöntem: Canlı tek fetusu olan ve gebelik yaşı 7 haftadan büyük olan 101 kadın çalışmaya alındı. Vaka grubu (n = 51) subkoryonik hematomlu olgulardan oluştu. 50 sağlıklı ve herhangi bir yakınması olmayan olgu kontrol grubu olarak izlendi. İstatistiksel yöntem olarak Student t test kullanıldı.

Bulgular: Vaka grubunda abortus oranı %27.4 iken kontrol grubunda abortus olmadı (p<.05). Preterm ve SGA bebek oranı iki grup arasında istatistiksel olarak farksızdı. Abortus oranının subkoryonik hematoma volümü ile arttığı, preterm ve SGA doğum oranının ise etkilenmediği gözlemlendi.

Sonuç: Subkoryonik hematoma varlığı ve büyüklüğü abortus oranını belirgin bir şekilde arttırmaktadır.

Anahtar Kelimeler: Subkoryonik hematoma, Düşük tehdidi, Ultrasonografi

Threatened abortion is one of the most common complications of pregnancy with an incidence of 20-25 % (1). Because of the effort to determine the prognosis of pregnancy in these patients, several hormonal and sonographic methods have been described. Ultrasonography is very important in clinical examination of pregnancy. Pre-

sence of fetal heart activity, sizes of the gestational sac and yolk sac are the main parameters to be determined in early pregnancy (2).

Detection of specific intrauterine disease may influence the frequency of abortion (3). Subchorionic Hematoma (SH) is described as the collections with circular or crescent-shaped ecogenity localised between the chorionic membrane and the uterine wall (4, 5). The aetiology of SH is doubtful. Most widely accredited mechanism is minimal pla-

central abruption (5, 6). SH has been reported to occur with a varying incidence of 4- 48 % in pregnancies, which experienced vaginal bleeding in early stage (7). Since the first description of SH, several authors have addressed the question of clinical significance (8). Another question is the effect of the volume of haemorrhage on pregnancy outcome.

The aim of this study is to evaluate the clinical aspects of presence and size of SH in patients with threatened abortion.

METHOD

101 women with a living fetus of more than 7 weeks were studied. Threatened abortion was defined as vaginal bleeding or contractions with a live embryo or fetus occurring before 20 weeks' gestation. Cases with the history of any systemic disease or recurrent abortion were excluded. Case group (n=51) was composed of patients with vaginal bleeding and SH. 50 healthy pregnant women with no complaint served as controls. Ultrasonographic examinations were performed by the same radiologist who was trained in obstetric sonography with a real-time B-mode scan device (Toshiba Sonolayer SSA- 270 A [Japan]).

SH was diagnosed as the collections with circular or crescent-shaped ecogenity between the chorionic membrane and the uterine wall (Figure 1). The volume of the hematoma was calculated with the "width x depth x length x 0.5" formula. The gestational ages of patients were obtained by measuring the length of the crown-rump distance or the biparietal diameter.

Pregnancy outcome measures such as abortion, preterm delivery or SGA (Small-for-Gestational-Age) deliveries were recorded. Abortion was defi-



Figure 1: Ultrasonographic appearance of subchorionic hematoma.

Table 1. Pregnancy Outcome Results in Case and Control Groups

PREGNANCY OUTCOME RESULTS	CASE		CONTROL		P
	N	%	N	%	
ABORTION	14	27.4	0	0	< .05
PRETERM DELIVERY	4	7.8	1	2	NS *
SGA DELIVERY	10	19.6	6	12	NS *

* NS: not significant

Table 2. Subchorionic Hematoma Volumes in Abortion and Non-abortion Cases

VOLUME (ml)	ABORTION (+)	ABORT
AVERAGE	17.6 ± 3.52*	8.67 ± 3.38*
MIN	1.2	1.0
MAX	42	25

*p < .05

Table 3. Relationship Between Volume Characteristics and Abortion

	ABORTION (+)	ABORTION (-)	Total
GROUP-A (≤10 ml)	6* 16.22%	31 83.78%	37 100%
GROUP-B (>10 ml)	8* 57.14%	6 42.86%	14 100%

*p<.05

Table 4. Comparison of Preterm and SGA Delivery Results in Group-A and B

	PRETERM DELIVERY	SGA DELIVERY	P
GROUP-A (≤10 ml)	3 9.68%	8 25.81%	NS*
GROUP-B (>10 ml)	1 16.67%	2 33.33%	NS*

*NS: not significant

ned as the conclusion of the pregnancy before 20 weeks' gestation. Preterm delivery was depicted as birth before 37 weeks' gestation. SGA was identified as estimated fetal weight and birth weight below the tenth percentile for gestational age.

Student' s t test was used to compare means. Statistical significance was defined as the P < .05.

RESULTS

The mean maternal ages were not different between two groups (25.7 in case and 25.4 in control

group). The mean gestational ages were 10.6 (ranging from 7 to 16) and 12.4 (ranging from 7 to 18) in case and control groups, respectively ($P > .05$).

Abortion was recorded in 14 (27.4 %) and 0 (0%) patient in case and control groups, these results were significantly different between two groups ($P < .05$).

Preterm delivery rates did not increase significantly in case group. Preterm delivery occurred in 4 (7.8 %) of the case group, and 1 (2 %) of the controls ($P > .05$). Similarly, SGA was not statistically different between two groups. SGA deliveries were 10 (19.6 %) in case group and 6 (12 %) in controls ($P > .05$) (Table 1).

In patients whose pregnancies concluded as abortion, the mean hematoma volume was 17.6 ± 3.52 ml (ranging from 1.2 to 42 ml). Whereas, in patients whose pregnancies sustained, the mean volume was 8.67 ± 3.38 ml (ranging from 1.0 to 25 ml). This intergroup difference was significant ($P < .05$) (Table 2).

To evaluate the significance of the hematoma size, the case group was divided into two subgroups according to the calculated volume of hematoma. The group with hematoma volume below 10 ml (Group-A) and the group whose volumes are above the 10 ml (Group-B) were compared for the pregnancy outcome measures.

Abortion was increased in Group-B compared to the Group-A ($P < .05$). Table 3 represents this significant intergroup difference.

Nevertheless, preterm and SGA delivery were not different significantly in Group-B and Group-A (Table 4). There were no association between the localisation of hematoma and the pregnancy outcome measures. No placental pathology or no fetal anomalies were detected in our series of patients.

DISCUSSION

It is substantial to ascertain the abortion risk in threatened abortion cases. Several methods have been proposed for this purpose by many authors (2, 9-12).

Sonographic basis consists of presence of fetal heart activity, bradycardia, improper size of gestational sac and absence or improper size of yolk sac. Wilson et al. reported 90 % continuation of pregnancy when the fetal heart activity was present in threatened abortion cases (10). Bradycardia (< 85 beat / minute) has been claimed as a poor prognostic factor in early pregnancies (11). Reece et al. suggested more recent follow-up when yolk sac observed in an abnormal position or size (12).

Since the first description of SH, several authors have addressed the question of clinical signifi-

ce (8). The incidence of SH varied greatly among studies from 4 to 48 per cent and previous reports are conflicting in their results (4, 13). Stabile et al. found a 5.4 % incidence of SH's, and none of their patients aborted (14). Karl Gerhard et al. reported an abortion rate of 20 % in their series (15). Conversely Pedersen found an identical abortion rate between SH and control groups' (4).

The volume of haemorrhage should influence the prognosis, theoretically. Small sized hematomas were reported as not increase the risk of abortion (14). Whereas, a large SH was found to be associated with an almost three-fold increase in risk of abortion (16). Sauerbrei and Pham reported a 93 % abortion rate with a volume greater than 60-ml (8). Antithetically, some authors reported no association between abortion rate and hematoma size (4, 7, 15).

We detected an increased abortion rate in relation to volume of SH. Abortion rates were 57.14 % versus 16.22 % in Group-B and Group-A ($P < .05$). This finding potentialized our thesis that increasing volumes of hematoma are indicating a higher incidence of abortion risk.

Hematomas have also been related to preterm delivery (5- 8). In our study, overall observed preterm delivery rate in SH group did not differ significantly from that in the control group (7.8 % versus 2 %). Preterm delivery rates were also not significantly related to the size of hematoma. Although statistically insignificant, the difference in preterm delivery rates might be determined with higher numbers of patients.

We could not reach any report in current literature that aimed to investigate the relationship between SH and SGA deliveries. In our series of patients, SGA deliveries have been occurred 19.6 % and 12 %, respectively, in case and control groups ($P > .05$). SGA delivery rates were not significantly related to the size of hematoma (9.68 % and 16.67 % in A and B Groups, respectively). Although there was an insignificant difference of SGA delivery rate in control and SH groups, larger series with controls are needed.

According to our findings; subchorionic hematoma is a significant factor in abortion within relation to the volume of hematoma, whereas there is not significant relation with preterm and SGA deliveries.

The presence of the subchorionic hematoma and largeness of its volume significantly increases the abortion rate, whereas there is not significant relation with preterm and SGA deliveries.

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