Pregnancy Outcome of Primigravida with Threatened Miscarriage and Subchorionic Hematoma

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ABSTRACT:

BACKGROUND: :

Threatened Miscarriage is vaginal bleeding occurring any time between implantation and 20 weeks gestation , with or without uterine contraction, without dilatation of cervix , and without expulsion of the products of conception Threatened miscarriage tends to be associated with a high likelihood of adverse subsequent pregnancy outcome**.**

Subchorionic Hematoma is described as the collections with circular or crescent-shaped ecogenity localised between the chorionic membrane and the uterine wall and it has been reported to occur with a varying incidence of 4- 48 %in pregnancies, which experienced vaginal bleeding in early stage.

OBJECTIVE:

To evaluate the association between threatened miscarriage in the presence of subchorionic hematoma in first and second trimester and adverse pregnancy outcome with regard to maternal and neonatal outcome.

PATIENTS AND METHODS:

prospective case control study(follow –up study) done at the Department of obstetrics and gynecology, Baghdad Teaching Hospital, Medical City complex, Baghdad.

60 primigravida women with threatened miscarriage in their first and second trimester were included in the study . . Thirty women had Subchorionic hematoma (SCH) (study group) were matched with thirty women without Subchorionic hematoma (control group). The demographic feature, course of pregnancy, obstetric outcome and neonatal outcome were analyzed.

RESULTS:

Analysis of data show that there is statistically significant difference between both groups regarding maternal and neonatal outcome. There is increasing rate of miscarriage (50%),(p=0.032) and preterm labour in study group ((93.3%), (p=0.046), when compared to control group . Regarding neonatal outcome there is increasing rate of very LBW <1.5 kg(26.7%), and LBW <2.5kg (40.0%) (p=0.029) and poor Apgar score in one minute (86.7%) (p=0.015) and five minutes in study group(53.3%)(p=0.002) when compared with control group. Also the study show that there is no statistically significant difference regarding the gestational age. at presentation as threatened miscarriage ,placental site, volume of hematoma, method of delivery and sex of the fetus.

CONCLUSION:

Women with threatened miscarriage who had Subchorionic hematoma are at increased risk for adverse maternal and neonatal outcome.

KEY WORDS: threatened miscarriage, subchorionic hematoma, pregnancy outcome.

INTRODUCTION:

Miscarriage is the spontaneous or induced termination of pregnancy before fetal viability [(1)]. Because popular use of the word abortion implies a deliberate pregnancy termination some prefer the word miscarriage to refer to spontaneous fetal loss before viability. [(2)]

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The role of ultrasound and endocrinology in prediction this type of early pregnancy complication remains controversial, The bleeding may resolve spontaneously in a few days, never to recur or it may continue, or stop and start over several days or weeks[(3), (4)] The bleeding usually begins in first 20 wks of gestation, then abdominal cramp follows a few hours to several days later [(5)] During an actual miscarriage, low back pain or abdominal pain (dull to sharp, constant to intermittent) typically

occurs, and tissue or clot-like material may pass from the vagina, the combination of bleeding and pain predicts a poor prognosis for pregnancy continuation[5,6]**.** Subchorionic Hematoma (SCH) is described as the collections with circular or crescent-shaped ecogenity localised between the chorionic membrane and the uterine wall[7,8]. The etiology of SCH is doubtful. Most widely accredited mechanism is minimal placental abruption [9] SCH has been reported to occur with a varying incidence of 4- 48 %in pregnancies, which experienced vaginal bleeding in early stage. Since the first description of SCH, several authors have addressed the question of clinical significance. Another question is the effect of the volume of hemorrhage on pregnancy outcome [10].There is no known cause for a subchorionic hematoma, since this is also unclear hematoma has been shown but many researchers speculate that during egg implantation, the egg slightly separates or tears from the uterus causing a bleed.[10]

SCH also shown in patients with bleeding disorders [11],patients with the presence of autoantibodies,[9] as well as patients receiving anticoagulants, where Subchorionic hematoma is a potentially serious complication that can occur in pregnant patients receiving enoxaparin for the prevention of thromboembolism [10], also massive subchorionic hematomas may be observed in patients after thrombolytic therapy.
Indeed, vasculopathies associated with certain disease states such as hypertension have been suggested as being able to make placental vessels more fragile, and therefore at greater risk of hemorrhage[10,11]

RESULTS:

The study revealed that there was no statistically significant differences between the study groups with subchorionic hematoma and control groups in regard to maternal age and occupation(p=0.756),(p=0.83) respectively.

Table 1: Distribution of patients according to the maternal age & occupation.

		SCH		Non SCH		P value
		No	%	No	%	
Age (years)	<20	5	16.7	8	26.7	0.756
	20—24	10	33.3	11	36.7	
	25—29	6	20.0	6	20.0	
	30—34	7	23.3	4	13.3	
	35	2	6.7	1	3.3	
	Mean±SD (Range)	25.10±5.88 (16-35)		23.27±5.21 (16-35)		
Occupation	Employed	12	40.0	10	33.3	0.837
	Unemployed	15	50.0	16	53.3	
	Student	3	10.0	4	13.3	
*Significant using Pearson Chi-square test at 0.05 level of significance						

Table 2 shows that the range gestational age of the study group was in the range of 5-20 weeks,mean (9.97_+ 2.9) while the control group wasin the range of 6-18 weeks mean(9.97+-3.68).Regarding placental sites of insertion anterior &posterior placenta in study group was 60%,40% respectively which were matched with that of the control group.

Table 2: The association of GA (weeks) at presentation as threatened miscarriage & placental site with Subchorionic hematoma.

		SCH		Non SCH	
		No	%	No	%
GA (weeks) of presentation as threatened miscarriage	First trim. (=<12)	25	83.3	25	83.3
	Second trim. (>12)	5	16.7	5	16.7
	Mean ± SD (Range)	9.77±3.68 (5-20)		9.97±2.97 (6-18)	
Placental site	Anterior	18	60.0	18	60.0
	Posterior	12	40.0	12	40.0

PATIENTS AND METHODS:

This is a prospective (follow-up study) conducted on (75) pregnant women who presented at antenatal care out-patient clinic in Baghdad Teaching Hospital during the period from (1st of December 2011 to 1st of October 2012).Only (60) pregnant lady were continou in the study so the study sample was divided into two groups (30 cases and 30 controls).

The inclusion criteria of our study were primigravida of a known last menstrual period (LMP), regular cycles and they were in 1st and 2nd trimester of pregnancy and had threatened miscarriage.

Pregnant lady with medical disease like Diabetes Mellitus and chronic hypertension , multiple gestation, negative fetal heart, heavy vaginal bleeding, those who were on anticoagulant therapy like low molecular weight heparin were excluded from our study.

Pregnancy was confirmed by clinical & ultrasonic examination for confirmation the gestational age and detection of fetal cardiac activity& the diagnoses of threatened miscarriage was made in the pregnant women who were presented with vaginal bleeding or bloody vaginal discharge with or without abdominal cramp. The study group involves 30 cases of pregnant women who were primigravida with threatened miscarriage and had SCH diagnosed sonographically where a hematoma appear as a crescent-shaped, sonolucent fluid collection behind the fetal membranes or the placenta. The position of the hematoma relative to the placental site was also evaluated and described as subchorionic hematoma as being located between the chorion and the uterine wall. The location of the placenta was marked as anterior or posterior. The sonographic evaluation also included the volume of the hematoma in mm.

The same criteria of the study group were applied for control group except for the presence of SCH. Demographic data of both groups were recorded & gestational age was determined according to Neagle rule by the use of the date of last menstrual period and confirmed ultrasonographicaly. The following sonographic factors were evaluated, yolk sac diameter, crown–rump length & fetal heart rate. The verbal consent were obtained from the patients for participation in our study.

For both groups demographic and pregnancy data were obtained by interview, and review of medical history records, symptoms of threatened miscarriage (e.g. brownish discharge, spotting, bleeding, cramping) were documented. Women in both groups were seen two weeks later after the first visit when they were attending the antenatal clinic and then followed throughout their pregnancy course and they were informed to attend this hospital if any complication happend . maternal and neonatal outcome, where we record that if their pregnancy ended with miscarriage or continue, G.A at miscarriage and at delivery, mode of delivery, birth weight, Apgar scores, the intrapartum and postpartum complication e.g. placental abruption, postpartum hemorrhage and hysterrctomy were recorded as . The ultrasound examination for those patients who participated in the study was done in antenatal care out-patient clinic in Baghdad Teaching Hospital by ultrasono grapher ,both trans-vaginal and trans-abdominal approach had been done .

Statistical analysis:

Different percentages (qualitative data from study and control groups)

Were tested using **Pearson chi-square test (x_2-test).** Statistical significance

Was considered whenever the P-value was less than 0.05 .

As shown in table3 during the follow up of those pregnant women with threatened miscarriage throughout their pregnancy course, it was found that 15 cases of the study group ended with miscarriage, while 7 cases of control group found to be ended with miscarriage and the mean gestational age at miscarriage in the study group was (13.60±5.54) ranging 7-22 weeks, and for the control group (12.43±4.83) ranging 8-22weeks,with statistically significant difference (P=0.032).). We found that there is 93.3% of preterm labour in study group and 65.2% in the control group and the mean gestational age at delivery for the study group was (32.07±2.75) ranging 28-39wk. & for control group was (36.65±3.21) ranging28-40 wk,with statistically significant difference (p=0.046).No statistically significant difference can be obtained regarding the mode of the delivery (P=0.552).There is increasing rate of intrapartum & postpartum complication in the study group.

Table 3: Comparison of pregnancy outcome, intrapartum & postpartum complication between the control &study groups.

		SCH		Non SCH		P value
		No	%	No	%	
Pregnancy outcome	Miscarriage	15	50.0	7	23.3	0.032*
	Delivery	15	50.0	23	76.7	
GA (weeks) at miscarriage	First trim (=<12)	13	86.7	7	100	-
	Second trim (>12)	2	13.3	-	-	
	Mean±SD (Range)	13.60±5.54 (7-22)		12.43±4.83 (8-22)		
Type of delivery	NVD	7	46.7	13	56.5	0.552
	CS	8	53.3	10	43.5	
GA (weeks) at delivery	Prterm (<37 weeks)	14	93.3	15	65.2	0.046*
	Term (=>37 weeks)	1	6.7	8	34.8	
	Mean±SD(Range)	32.07±2.75 (28-39)		36.65±3.21 (28-40)		
Complications	PPH	5	33.3	4	17.4	
	Abruptio Placentae	3	20.0	1	4.3	
	Hysterectomy	1	6.7	-	-	
	No complications	6	40.0	18	78.3	
*Significant using Pearson Chi-square test at 0.05 level of significance						

Table.4 show that there is no statistical significant difference regarding sex of baby with occurrence of SCH (P=0.84).

Regarding neonatal birth weight there was statistically significant higher rate of having a baby with very LBW (<1.5 kg) and LBW (<2.5) in the study group compared to that of control group (P= 0.029).There is significant lower Apgar score of infants born to mothers with SCH for both Apgar score in 1 & 5 minutes (P=0.015, 0.002) respectively .

Table 4: Association between neonatal outcome and Subchorionic hematoma.

		SCH		Non SCH		P value
		No	%	No	%	
Sex of baby	Male	7	46.7	10	43.5	0.847
	Female	8	53.3	13	56.5	
Birth weight (Kg)	Very LBW (<1.5)	4	26.7	1	4.3	0.029*
	LBW (<2.5)	6	40.0	5	21.7	
	Normal BW (=>2.5)	5	33.3	17	73.9	
	Mean±SD (Range)	2.133±0.761 (1.000-3.200)		2.730±0.652 (1.200-3.500)		
Apgar 1 minute	Poor Apgar1 (<7)	13	86.7	11		0.015*
	Good Apgar 1(=>7)	2	13.3	12		
	Mean±SD (Range)	4.80±1.52 (3-8)		6.26±1.39 (3-8)		
Apgar 5 minutes	Poor Apgar5 (<7)	8	53.3	2	8.7	0.002*
	Good Apgar5 (=>7)	7	46.7	21	91.3	
	Mean±SD (Range)	6.53±1.30 (5-9)		7.65±0.83 (6-9)		

* Significant using Pearson Chi-square test at 0.05 level of significance

medium to large size hematoma >20mm was 60.0%.(the size of haematoma taking was depend on the size of haematoma in our study ,it is self classification).

Table.5 shows that there is no significant relation between the size of SCH and pregnancy outcome. The percentage of miscarriage and delivery in those who were with small size hematoma <20mm. was 40.0% and for those with

Table 5: The association between the size of hematoma and the pregnancy outcome.

		SCH size (average size in mm)[3]				P value
		Small (<20)		Large (>20)		
		No	%	No	%	
Pregnancy outcome	Miscarriage	6	40.0	9	60.0	-
	Delivery	6	40.0	9	60.0	
Type of delivery	NVD	1	14.3	6	85.7	0.06
	CS	5	62.5	3	37.5	
Prematurity	Premature (<37)	5	35.7	9	64.3	-
	Term (=>37)	1	100	-	-	
Complications	PPH	3	60.0	2	40.0	0.530
	Abruption	1	33.3	2	66.7	
	Hysterectomy	-	-	1	100	
	No	2	33.3	4	66.7	
Birth weight	Very LBW(<1.5)	1	25.0	3	75.0	0.732
	LBW(<2.5)	3	50.0	3	50.0	
	Normal BW(=>2.5)	2	40.0	3	60.0	
Apgar 1 minute	Poor Apgar1(<7)	5	38.5	8	61.5	0.756
	Good Apgar 1(=>7)	1	50.0	1	50.0	
Apgar 5 minutes	Poor Apgar1(<7)	3	37.5	5	62.5	0.833
	Good Apgar 1(=>7)	3	42.9	4	57.1	

DISCUSSION:

The study done by *Nagy* et al 2003[12] and Giobbe et al 2001[13] show that there is no association between the subchorionic hematoma and the demographic features (including maternal age ,and occupation) in the study and control groups. This agree with our study, but disagrees with study done by Okan et al 2008 [14] were found that the incidence of Subchorionic hematoma increased with increasing maternal age.

The study done by Gupta R et al(2007)[15] and Okan et al (2008) [14] show that at the end of first trimester and early second trimester, hematoma can distance the subchorionic placental growth from attached place, so that the prognosis is worse than the hematoma that occurs early in the first trimester, this is disagrees with our study were found that there is no relation between G.A. at presentation as threatened miscarriage in both groups and the pregnancy outcome this is because of small sample size.The study done by Donogol et al(2011) [16] reported that there is no association between the SCH and placental site compared to control group and this agrees with our study.The study done by Ketut et al (2011) [17] and Okan et al (2008)[14] show that the risk of miscarriage in those with threatened miscarriage and had subchorionic hematoma was3 times higher than those with threatened miscarriage and without subchorionic hematoma, this agree with our study were the study found that the risk of miscarriage in study group was two times higher than control group. This may be due to the prolonged presence of blood may act as a nidus for intrauterine Infection.

The study done by Nagy et al (2003)[12] , Donogol et al (2011)[15] and Biesiada et al (2011) [18] found that SCH diagnosed in early pregnancy doesn't influence the method of delivery this is agrees with our study were found that there is no effect of SCH regarding the mode of delivery in both group. The study done by *Nagy* et al 2003[12] ,Donogol et al (2011) [15] and Tower et al (2005) [19] show that

preterm delivery is the most frequently outcome in patients with subchorionic hematomas were the rate of preterm delivery 16%, 20.75% and 32% in studied groups respectively this agree with our study were it is showed that there is higher rate of preterm delivery 93.3% in those who had SCH in comparison to 65.2% in control group. The study done by Nagy et al (2003)[12] , Donogol et al (2011) [16] and Biesiada et al (2011)[20] show in their prospective study of 70 cases with threatened abortion(of those 30 cases with subchorionic hematoma). The group with intrauterine hematoma identifies gestation at risk for a number of complications including placental abraption 7.54% postpartum hemorrhage 5.66% (nill in the control) and this agree with our study that shown an increase risk of placental abruption in the studied group with 20.0% in relative to 4.3% to the control group, 33.3% of PPH in studied group comparable to 17.4% in control group and an increasing rate of hysterectomy in those with SCH.

The study done by Nagy et al (2003)[12] and , Donogol et al (2011) [20] show that there is association between very LBW infant with threatened miscarriage and SCH were infants of patients with SCH had nearly a 200 gm. difference in birth weight compared with control group & this is agrees with our study. The study done by Nagy et al (2003) [12] , Donogol et al (2011) [20] show that there is no relation between SCH and the sex of baby and this is agrees with our study. The study done by Nagy et al (2003)[12] and Biesiada et al (2011) [20] show that the frequency of fetal asphyxia, abnormal heart rate pattern , and low Apgar scores seen in the patients with intrauterine hematomas may be due to the increased rates of preterm delivery, fetal growth restriction, and placental abruption, this finding agrees with our study as it is shown that there is poor Apgar score 1&5 minutes in those infants born to mothers who had SCH in comparable to those in the control group. Several authors have attempted to relate the size of the hematoma directly to pregnancy outcome and to determine whether it is significant or not many of these studies, including ours, find that the estimated size of the hematoma did not correlate with the outcome of the pregnancy Perhaps it is the presence or absence of a hematoma as a marker of the integrity of placentation and not its size that is important, these finding obtained by Nagy et al (2003) [12] and Ketut et al (2011) [17] . While study done by , Donogol et al (2011)[16] and Giobbe et al (2001)[13] found that when hematoma is small and asymptomatic it may not be of clinical significance. However the larger hematomas may be associated with poorer outcomes. The study done by Esen Çağsar et al (2000) [18] found that the presence of the subchorionic hematoma and largeness of its volume significantly increases the miscarriage rate, where as there is no significant relation with preterm deliveries and LBW infants.

CONCLUSION:

Women with threatened miscarriage who had SCH are at increased risk for adverse maternal and neonatal outcome.

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