AN 8 YEAR CLINICAL REVIEW OF ANTEPARTUM HAEMORRHAGE AT THE UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL, MAIDUGURI .

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ABSTRACT

Background: *Antepartum haemorrhage is one of the obstetric emergencies associated with increased maternal and perinatal morbidity and mortality.*

Objective: *To determine the incidence, types, predisposing factors, complications and outcome of antepartum haemorrhage.*

Methodology: *A retrospective study of cases of antepartum haemorrhage over an 8 year period from January 1999 to December 2006 at the University of Maiduguri Teaching Hospital was carried out.*

Results: *The incidence of antepartum haemorrhage was 1.6% (248/15512), while that of placenta praevia and placental abruption were 0.8% and 0.7% respectively. Typically, placenta praevia was detected early in the pregnancy as low lying placenta in 42(36.8%) of cases, while lower abdominal pain, uterine tenderness and woody hard uterus was found in 88(89.8%), 88(85.4%) and 68(69.4%) of cases of placental abruption respectively. The predisposing factors for antepartum haemorrhage were; increasing maternal age, multiparity, previous abortion, previous uterine instrumentation and uterine scar. Threatened abortion in the index pregnancy was associated with placenta praevia while maternal hypertension was associated with placental abruption. The first bleeding episode occurred intrapartum in 74(34.9%) of patients with APH and the majority of them (57 out of 74) had placental abruption. The commonest mode of delivery was caesarean section, which accounted for 135(63.7%) deliveries and 73.3% of these were patients with placenta praevia. Seventy seven women delivered vaginally and 80.5% of them were patients with placental abruption.*

Preterm labour and post partum haemorrhage were the most common maternal complications while prematurity and increased perinatal mortality were the most common fetal complications. The perinatal mortality was 85(40.1%). There was no maternal mortality from this series.

Conclusion: *Antepartum haemorrhage is an obstetric emergency associated with increased maternal and perinatal morbidity and mortality unless prompt resuscitative measures and appropriate treatment are offered. Early booking, appropriate referral of high risk patients and routine ultrasound scanning for placental localization are advocated for early diagnosis and optimum maternal and fetal outcomes.*

Keywords: placental abruption, placenta praevia, Low lying, intrapartum

INTRODUCTION

Antepartum haemorrhage is an important obstetric emergency and carries increased risk of maternal and perinatal morbidity and mortality. It commonly arises from the placenta as placenta praevia or placental abruption and rarely it may be from a vasa praevia or local lesions in the cervix or vagina[1]. It is crucial to distinguish between these causes from the outset as their definitive management could differ significantly. Early diagnosis is also extremely important to ensure prompt institution of management.

With the advent and wide spread use of real time ultrasonography, it is possible for a low lying placenta, the antecedent of placenta praevia, to be detected in the unsuspecting asymptomatic patient so easily that it can be termed one miracle that has attended obstetric practice in the last half centuary[2]. Though the accuracy of ultrasound scan diagnosis of placenta praevia depends on the gestational age, 85% of patients with low lying placenta in early ultrasound scan (12 - 14 weeks) will become normally sited at term[3,4]. Ultrasound scan has a sensitivity of 49% and specificity of 93 % in predicting placenta praevia most likely to persist at delivery, depending on the degree of placental symmetry with respect to the internal cervical os during the second trimester[5].

Factors associated with increased risk of antepartum haemorrhage include; increased maternal age, high parity, previous caesarean section, threatened abortion, previous uterine instrumentation and cigarette smoking[6-12]. Bleeding of antepartum haemorrhage is characteristically painless in placenta praevia, here the uterus is usually soft with discernable fetal parts and normal fetal heart rate in most cases. However in placental abruption, the uterus is usually woody hard and tender with fetal parts often difficult to palpate. In

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extreme cases the fetal heart rate may be inaudible or absent[10,12].

In treating patients with antepartum haemorrhage, maternal and fetal condition must be assessed; maternal resuscitation must be started immediately. Consideration must be given to early delivery if there is evidence of fetal distress and if the fetus is of sufficient maturity to survive in the extra uterine environment. Early delivery may lead to prematurity and its consequent sequalae for the baby. The perinatal mortality associated with antepartum haemorrhage may be quite high and all effort should be geared towards optimizing the outcome for both mother and baby.

PATIENTS AND METHODS

During the period from January 1999 to December 2006, 248 patients had antepartum haemorrhage in University of Maiduguri Teaching Hospital (U.M.T.H). Only 212 patients with placental abruption or placenta praevia who had complete data for analysis were used in the study. Patients with incidental haemorrhage and mixed placenta praevia and abruption were excluded. The relevant information was obtained from the obstetrics ward register, labour ward register, special care baby unit register, operation theatre register and the patient case notes recovered from the medical records department. The case notes were studied for various clinical features, predisposing factors, gestational age at diagnosis and delivery, mode of delivery, complications and fetal outcome. The information obtained was coded and transferred on to a profoma already designed for the study, this was analysed for frequency and chi-square at 95% confidence interval. Antepartum haemorrhage is considered as bleeding from the genital tract after 28th week of gestation before the delivery of the baby.

RESULTS

During the period of study there were 15,512 deliveries in U.M.T.H and 248 had antepartum haemarrhage. One hundred and twenty five (50.4%) had placenta praevia, 108(43.6%) had placental abruption while 10(4.0%) and 5(2.0%) had incidental haemorrhage and mixed placental praevia and abruption respectively. However only the 212 cases of placenta praevia or placental abruption with complete data recovered from the records department were analyzed. (retrieval rate=85.5%). The incidence of antepartum haemorrhage was 1.6%, while that of placenta pravia and placental abruption were 0.8% and 0.7% respectively.

Table 1, shows the predisposing factors to antepartum haemorrhage and their relative occurrence among patients with placenta praevia and placental abruption. The occurrence of placental abruption was significantly higher in the younger and primigravid mothers while placenta praevia was commoner among the older and multiparous women (p=0.0047 and p=0.002 respectively) and the RR of a primigravida developing placental abruption compared to placenta praevia was 1.76 (OR=3.92, p=0.002). Significantly more women who had threatened abortion in the index pregnancy developed placenta praevia 44 out of 54 compared to placental abruption (p=0.0000002, RR=1.84 and OR=5.53, for developing placenta praevia in those who had threatened abortion).There was also a statistically significant occurrence of placental abruption among hypertensive women (p=0.00, RR=2.60 and OR=14.07) with 43 out of 49 hypertensive women developing placental abruption. Uterine scar significantly predisposed to placenta praevia (p=0.038, RR=1.40, OR=2.36). Uterine instrumentation, previous abortion and previous antepartum haemorrhage did not show any statistically significant influence on the occurrence of placental abruption over placenta praevia and vice versa. Other factors such as blood group, sex of the fetus did not appear to affect antepartum haemorrhage.

Table 2 shows that more patients with low lying placenta in early ultrasound went on to developed placenta praevia rather than placental abruption (p=0.00). The RR and OR for developing placenta praevia in those detected to have low lying placenta were 2.43 and 62.28 respectively. Lower abdominal pain, uterine tenderness, woody hard uterus and non palpable fetal heart were found significantly more often in patients with placental abruption than those with placenta praevia.

The mean gestational age at first bleeding in placental abruption was 33 $\pm$ 5 weeks while in placenta praevia was 35 $\pm$ 5 weeks. Similarly, gestational age at delivery was significantly lower for placental abruption (p=0.00); 36 out of 43 of those delivering at 28 - 32 weeks had placental abruption, while 75 out of 115 delivering at 37 weeks and beyond had placenta praevia as shown in table 3. The RR for preterm delivery was 1.76 with an OR of 2.94 in those with placental abruption.

Caesarean section was the commonest mode of delivery in patients with antepartum haemorrhage, however significantly more patients in the placental praevia had caesarean delivery compared to those with placental abruption (P=0.00). The RR and OR for caesarean section were 3.76 and 11.37 respectively in patients with placenta praevia. The fetal outcome was better in placenta praevia group (P = 0.00). Significantly more patients with placenta praevia had normal fetal outcome as defined by Apgar scores of 7-10. Seventy one out of 91 babies were either stillborn or severely asphyxiated in those with placental abruption. More than half of the babies in the placental abruption group were of low birth weight: 52 out

of 98. Not shown in the table are 8 babies who had early neonatal death, putting the perinatal mortality at 40.1% (85/212).

In table 4, significantly more patients with placenta praevia had warning bleeds 69 out of 74 (p=0.000, RR=2.99, OR=30.43) compared to placental abruption. Fifty seven out of 74 of the patients who bleed for the first time intrapartum had placental abruption (RR=2.47, OR=7.41).

Table 1: Comparison of predisposing factors between placental abruption and placenta praevia

Predisposing Factors	Abruptio placentae(%)	Placenta praevia(%)	Total
1. Age group in years	11 (78.5)	3 (21.5)	14
15-19	25 (62.5)	15 (37.5)	40
20-24	20 (35.7)	36 (64.3)	56
25-29	22 (45.8)	26 (54.2)	48
30-34	16 (44.5)	20 (55.5)	36
35-39	4 (22.2)	14 (77.8)	18
40-44	98 (46.2)	114 (53.8)	212
Total			
X^2=16.86, P=0.0047.			
2. Parity	20 (74.1)	**7** (25.9)	27
0	55 (45.6)	66 (54.4)	121
1-4	23 (35.9)	41 (64.1)	64
≥ 5	98 (46.2)	114 (53.8)	212
Total			
X^2=11.18,P=0.004			
3. Previous uterine instrumentation	22 (38.6)	35 (61.4)	57
Yes	76 (49.1)	74 (57.8)	155
No	98 (46.2)	114 (53.8)	212
Total			
X^2=1.83, p=0.18.			
4. Previous C/S	9 (29.1)	22 (70.9)	31
Yes	89 (49.2)	92 (50.8)	181
No	98 (46.2)	114 (53.8)	212
Total			
X^2=4.32, P=0.038.			
5. Threatened Abortion in index pregnancy	10 (18.5)	44 (81.5)	54
Yes	88 (55.7)	70 (44.3)	158
No	98 (46.2)	114 (53.8)	212
Total			
X^2=22.38, P=0.000002.			
6. Previous Abortion	37 (42.5)	50 (57.5)	87
Yes	61 (48.1)	64 (51.7)	127
No	98 (46.2)	114 (53.8)	212
Total			
X^2=0.81, p=0.37.			
7. Hypertension	43 (87.8)	6 (12.2)	49
Yes	55 (43.3)	108 (56.7)	127
No	98 (46.2)	114 (53.8)	212
Total			
X^2=44.2, P=0.0000.			
8. Previous APH	13 (65.0)	7 (35.0)	20
Yes	79 (44.2)	100 (55.8)	179
No	6 (46.2)	7 (53.8)	13
Not stated	98 (46.2)	114 (53.8)	212
Total			
X^2=3.15, p=0.21.			

C/S= caesarean section

Table 2: Comparison of clinical features of placental abruption and placenta preavia

Presentation	Abruptio placentae(%)	Placenta praevia(%)	Total
1. Low lying placenta			
Yes	1(2.3)	42 (97.7)	43
No	43 (59.7)	29 (40.3)	72
Nil scan	54 (55.6)	43 (44.4)	97
Total	98 (46.2)	114 (53.8)	212
X^2=37.55, P=0.000			
2. PROM/Polyhydramnios			
Yes	7 (70.0)	3 (30.0)	10
No	73 (49.6)	74 (50.4)	147
Not stated	18 (32.7)	37 (67.3)	55
Total	98 (46.2)	114 (53.8)	212
Fisher exact test, p=0.03			
3. Lower abdominal pain			
Nil	8 (9.1)	79 (90.9)	87
Mild	56 (66.7)	28 (33.4)	84
Severe	32 (96.9)	1 (3.1)	33
Not stated	2 (25.0)	6 (75.0)	8
Total	98 (46.2)	114 (53.8)	212
X^2=96.02, P=0.000			
4. Preterm labour			
Yes	59 (81.9)	13 (18.1)	72
No	34 (36.1)	60 (63.9)	94
Not stated	5 (11.1)	41 (88.9)	45
Total	98 (46.2)	114 (53.8)	212
X^2=34.67, p=0.0000			
5. Twins			
Yes	1 (20.0)	4 (80.0)	5
No	97 (47.3)	110 (52.7)	205
Total	98 (46.2)	114 (53.8)	212
X^2=1.42, p=0.23.			
6. Sex			
Female	49 (43.3)	64 (56.7)	113
Male	47 (48.5)	47 (51.5)	97
Total	98 (46.2)	114 (53.8)	212
X^2=0.91, p=0.34.			
7. Uterine tenderness			
Yes	88 (85.4)	15 (14.6)	103
No	10 (10.3)	87 (89.7)	97
Total	98 (46.2)	114 (53.8)	212
X^2=112.83, p=0.000			
8. Uterus			
Woody hard	68 (98.6)	1 (1.4)	69
Soft	28 (21.2)	104 (78.8)	132
Not stated	2 (18.2)	9 (81.8)	11
Total	98 (46.2)	114 (53.8)	212
X^2=108.68, p=0.000.			
9. Fetal parts			
Palpable	40 (28.2)	102 (71.8)	142
Not palpable	52 (91.2)	5 (8.8)	57
Not stated	6 (46.2)	7 (53.8)	13
Total	98 (46.2)	114 (53.8)	212
X^2=65.06, P=0.000			

PROM=Premature rupture of fetal membranes.

Table 3: Booking Status, Gestational age at first bleeding/delivery, Mode of Delivery and Fetal Outcome

Factor	Abruptio placentae(%)	Placenta praevia(%)	Total
1. Booking status			
Booked	40 (39.6)	61 (60.4)	101
Referred	14 (36.8)	24 (63.2)	38
Unbooked	44 (60.3)	29 (39.7)	73
Total	98 (46.2)	114 (53.8)	212
X^2=8.92, p=0.01			
2. GA at first bleeding			
<28	6 (25.0)	18 (75.0)	24
28-32	30 (38.5)	48 (61.5)	78
33-36	24 (54.5)	20 (45.5)	44
≥37	38(57.6)	28 (42.4)	66
X^2=10.89, p=0.012	98 (46.2)	114 (53.8)	212
3. GA at delivery			
28-32	36 (83.7)	7 (16.3)	43
33-36	22 (40.7)	32 (59.3)	54
≥37	40 (34.8)	75 (65.2)	115
Total	98 (46.2)	114 (53.8)	212
X^2=31.03, p=0.0000008			
4. Mode of delivery			
Vaginal	62 (80.5)	15 (19.5)	77
Elective C/S	1 (3.1)	31 (96.9)	32
Emergency C/S	35 (33.9)	68 (66.1)	103
Total	98 (46.2)	114 (53.8)	212
X^2=65.56, p=0.000			
5. Fetal outcome			
Stillbirth	65 (84.4)	12 (15.6)	77
Severe asphyxia	6 (42.8)	8 (57.2)	14
Mild asphyxia	12 (22.2)	42 (77.8)	54
Normal	15 (22.4)	52 (77.6)	67
Total	98 (46.2)	114 (53.8)	212
X^2=73.07, P=0.000			
6. Birth weight(gm).			
<1000	1 (33.3)	2 (66.7)	3
1000-2499	51 (67.1)	25 (32.9)	76
2500-3999	46 (38.1)	75 (61.9)	121
≥4000	0 (0.0)	12 (100)	12
Total	98 (46.2)	114 (53.8)	212
X^2=27.3, P=0.000006			

GA= Gestational age, C/S= caesarean section, Referred= patients that booked in other hospital.

Table 4: Bleeding patterns in abruptio placentae and placenta praevia

Factors	Abruptio placentae(%)	Placenta praevia(%)	Total
1. Onset of bleeding			
Provoked	3 (14.3)	17 (85.7)	20
Spontaneous	87 (51.8)	81 (48.2)	168
Not stated	8 (33.3)	16 (66.7)	24
Total	98 (46.2)	114 (53.8)	212
X^2=9.69, p=0.002.			
2. Warning bleeds			
Yes	5 (6.7)	69 (93.3)	74
No	86 (68.8)	39 (31.2)	125
Not stated	7 (53.8)	6 (46.2)	13
Total	98 (46.2)	114 (53.8)	212
X^2=72.10, p=0.000			
3. Severity of bleeding			
Mild	10 (21.3)	37 (78.7)	47
Moderate	47 (55.3)	38 (44.7)	85
Severe	35 (59.3)	24 (40.7)	59
Not stated	6 (28.6)	15 (71.4)	21
Total	98 (46.2)	114 (53.8)	212
X^2=18.28, p=0.0001			
4. First bleeding intrapartum			
Yes	57 (77.1)	17 (22.9)	74
No	38 (31.1)	84 (68.9)	122
Not stated	3 (18.8)	13 (81.2)	16
Total	98 (46.2)	114 (53.8)	212
X^2=44.26, p=0.000			
5. Retroplacental clot			
Yes	90 (100)	0 (0)	90
No	0 (0)	77 (100)	77
Not stated	8 (17.7)	37 (82.3)	45
Total	98 (46.2)	114 (53.8)	212
X^2=185.54, p=0.000			

DISCUSSION

Antepartum haemorrhage occupies an important place in obstetric practice as a major source of increased morbidity and mortality to both mother and fetus. The incidence of antepartum haemorrhage of 1.6% from this study is higher than that of 0.2% earlier reported from Lagos, Nigeria[12] but compares with that of 1.2 - 1.8% in Accra, Ghana[1]. It is lower than the 2.5% reported from India[13].The major causes of antepartum haemorrhage are placenta praevia and placental abruption[1,10]. The incidence of placenta praevia of 0.8% in his study is lower than 2.6% from a recent study in Lagos, Nigeria[6]. Similarly, the incidence of placental abruption of 0.7% is lower than 6.5% reported from Sudan[14], but higher than the 0.4% reported from Enugu, Nigeria[15]. These variations may be accounted for by the differences in the prevalence of the risk factors from place to place.

Threatened abortion in the index pregnancy has been shown to increase the risk of antepartum haemorrhage by 2.5 fold[8]. In this study the risk was more for placenta praevia than placental abruption, with a RR of 1.84 for developing placenta pravia. This increased risk for placenta praevia due to threatened abortion in index pregnancy has also been seen in a study from Lagos, Nigeria[6]. This may be because the bleeding, which usually indicates some degree of placental separation of the chorion from the decidua, is speculated to result in residual tissue defect or some weak points remain between the placenta and decidua at the site of bleeding thus causing villous, deciduas or chorionic damage. This damage may interfere with placenta migration as the uterus grows.

Increasing maternal age and grandmultiparity have been associated with antepartum haemorrhage[1,12]. Similar assertion can also be made in this study for placental praevia while the reverse is the case for placental abruption as was found to be commoner among younger and primigravid mothers. The modal age of antepartum haemorrhage in this study was 25 - 30 years similar to the modal age of 26 30 years after correcting for grandmultiparity in the same environment[16]. Factors such as pregnancy induced hypertension among teenage primigravidae may act synergistically to increase the risk of developing placental abruption. Indeed, maternal hypertension was significantly higher among the

placental abruption group with a RR of 2.60 for getting complicated by placental abruption, and is the most consistent predisposing factor for placental abruption[1,14].

Previous abortion and previous uterine instrumentation have been shown to be associated with the risk of placenta praevia[6,17], but no statistically significant difference in the occurrence of these factors between placenta praevia and placental abruption was seen in this study. This may not be unconnected to the use of less traumatic instrument (made of plastic) for uterine evacuation nowadays. These instruments are associated with less tissue injury and consequent fibrous tissue formation.

Thirty six (31.58%) patients who had placenta praevia were diagnosed incidentally during the antenatal period when ultrasound scan was done for some other indications; 22 of them were booked while the remaining 14 were referred from peripheral hospital. All the 31 patients that had elective caesarean section for placenta praevia were from this group and 8 of them had no history of vaginal bleeding. This buttresses the importance of early booking, ultrasound scanning and referral where indicated. The maternal and fetal outcome of elective caesarean section was better than that of emergency caesarean section, as reported from an earlier study[18].

The first bleeding episode occurred intrapartum in most cases of placental abruption. This may be due uterine irritation that often follows bleeding into the amniotic fluid or the myometrium in most cases of placental abruption, consequently labour sets in. If the condition occurs before term, the baby then stands the risk of prematurity and low birth weight. In this study the relative risk of the baby been born preterm and low birth weight were 1.72 and 1.90 respectively. The association of preterm delivery and low birth weight with placental abruption has also been reported in Jordan[19]. It is therefore pertinent that women with antepartum haemarrhage be delivered in tertiary centres with facilities for care of premature babies. A Paediatrician must be invited during delivery. The perinatal morbidity and mortality rates are usually high both in this study and concurred with earlier observation[19]. The perinatal mortality rate was significantly higher among those with abruption placentae, with a RR of 3.45.

The commonest mode of delivery in patients with placenta praevia was caesarean section, which was offered to 135(63.7%) of the patients. This is necessary to salvage babies especially those with mild placental abruption and preterm babies who stand the risk of fetal distress during labour. Moreover caesarean section is the only safe mode of delivery for major placenta praevia, which occurred in 77 out of the 114 patients with placenta praevia. The RR for caesarean section among those with placenta praevia was 3.76 in this study. There were 62 out of the 98 patients with placental abruption who had vaginal delivery, which is the preferred mode of delivery in most cases of placental abruption. This is because of the high rate of intrauterine fetal death at presentation. In this study 61.2% of the patients with placental abruption had intrauterine fetal death at presentation and a similar finding has also been reported in Enugu, Nigeria[15]. Most of the babies born to the placental abruption group were of low birth weight which might have occurred as a consequence of the placental insufficiency and preterm delivery associated with the condition[19,20]. The fetal outcome is generally worse for placental abruption as up to 75% of them had either stillbirth or severely asphyxiated babies while only 13% of the placenta praevia group had such babies. This may not be unconnected to the delay in reaching hospital facilities where definitive treatment can be offered, delay worsens the prognosis for the fetus as well as the mother.

CONCLUSION

Antepartum haemorrhage is a grave obstetric emergency with increased maternal and perinatal morbidity and mortality. Placental abruption carries poorer prognosis for the fetus, neonate as well as the mother when compared to placenta praevia. Educating the pregnant women about the importance of antenatal care and easy accessibility to quality antenatal services would go a long way in bringing down the perinatal morbidity and mortality associated with the condition. Routine ultrasound scan for placental localisation in high risk patients, early diagnosis and appropriate referral are advocated.

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