ORIGINAL ARTICLE

Abruptio Placentae versus Placenta Previa as a risk factor for Preterm Labour

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Abstract

Objective: The objective of the study is to identify Abruptio Placentae versus Placenta Previa as a risk factor for Preterm Labour and to compare the fetal outcome.

Study design: Cross sectional study

Setting: Gynae Unit II Civil Hospital Karachi

Duration: 23 May, 2006 to 23, January 2007 (8 months)

Patients & methods: 50 consecutive patients of APH due to Abruptio Placentae and Placenta Previa were studied.

Results: 32 cases of Abruptio Placenta and 20 cases of Placenta Previa were managed. Prematurity was higher in abruption placenta (46.9%) as compare to placenta previa (40%). Perinatal mortality rate associated with abruption placenta was (59.3%), while (30.0%) in placenta previa. Increased age, grandmultiparity, hypertension and anemia were most common associated risk factors with abruption placenta. Most of the patients presented with bleeding per vaginum. The incidence of placenta previa was (20.0%) in patients with previous Caesarean section and (35%) with previous abortion, D&E and D&C. Placenta previa also has shown an association with advancing age and parity.

Conclusion: APH is an obstetrical emergency associated with maternal and fetal morbidity and mortality. Prematurity is single most common reason for neonatal mortality.

Key words: Preterm labour, Placenta previa, Abruptio placenta.

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Introduction

The two most important causes of antepartum haemorrhage from an obstetric standpoint are placenta previa and placental abruption. Together, these account for around 50% of the cases of antepartum haemorrhage A significant proportion of antepartum bleeds, however, have no clear cause evident and are considered unexplained or unclassified, [1] although often these are speculatively classified as marginal bleeds or bleeds arising from the placental edge. In addition, bleeding may arise from any site within the lower genital tract. Placental abruption is among the most devastating complications of pregnancy for both the fetus and, to a lesser extent for the mother. The condition occurs in approximately 1 in 100 pregnancies [2] but is associated with up to one third of all prenatal deaths. [3,4] It is associated with 39.6% rate of preterm delivery. [5]

Some of the bleeding of placental abruption usually insinuate itself between the membranes and uterus, and then escapes through the cervix, causing external hemorrhage. Less often, the blood does not escape externally but is retained between the detached placenta and the uterus, leading to the concealed hemorrhage.

Abruptio Placentae is a major cause of maternal and prenatal morbidity and mortality. Maternal complications include hemorrhagic shock, DIC, renal failure, ischemic necrosis of distal organs e.g. hepatic, adrenal and pituitary, couvelaire uterus leading to postpartum hemorrhage. Fetal complications include hypoxia, anemia, growth restriction, prematurity, neurodevelopment

problems and fetal death. Abruptio Placentae is very frequently seen in our population; however local work on this important condition of pregnancy is very sparse.

The risk of preterm delivery in placenta previa is 41.1%. [6]Although the clinical course of placenta previa is highly suggestive, the etiology of this condition is till remains obscure. The strongest connection is found between previous history of cesarean section, high parity, and advanced maternal age. [7] Other potential risk factor include history of previous spontaneous and induced abortion [8,9], previous uterine operations, previous placenta previa [10], smoking or substance abuse during pregnancy [11], multiple gestation. [12] Diagnosis is made on history, clinical examination and ultrasonography. Risk of preterm delivery is increased in women with APH who have second trimester vaginal bleeding or the presence of uterine contraction. These facts highlight the need for proper maternal care and the diagnosis of condition in all pregnant ladies especially those at high risk. So keeping these facts in view such cases must be referred for delivery at tertiary care hospitals where the trained personals are available.

Preterm birth occurs in 7-12% of all deliveries, but accounts for over 85% of perinatal morbidity and mortality. [13] Although the death rate has decreased over the past few decades, this can be attributed to improvements in the neonatal managements rather than a reduction in preterm births.

The mortality, morbidity and costs of preterm delivery are higher at lower gestational ages, for example, mortality rates are 90% at 23 weeks dropping to 2% at 34 weeks. Even in babies that survive, there is a high risk of short and long term morbidity. [14] Some associated conditions are acute and amenable to treatment but others such as cerebral palsy, neurodevelopment, and pulmonary disorders can result in long term, severe disability. There are also major implications in terms of the psychological and social impact of disability on the individuals and their carers. The devastating consequences of prematurity have led to attempts to improve outcome by predicting, preventing and treating preterm labour.

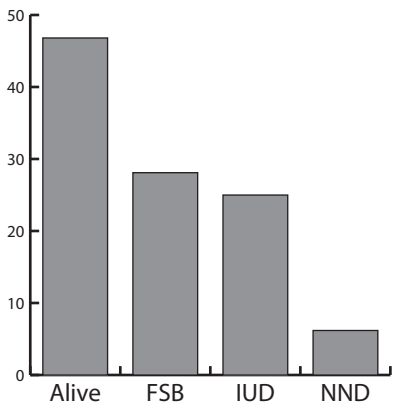
The study under discussion aims to determine the frequency of preterm labour in APH and fetal outcome. This study will also identify the clinical risk factor associated with preterm delivery in women with APH. Such information will assist in future management of patient with APH and women with risk factors of second trimester vaginal bleeding and uterine contraction will benefit from close surveillance in hospital and repeated blood transfusion, so it will improve the fetal outcome.

Results:

52 consecutive patients of APH due to abruption placentae and placenta previa were studied in a period from May 23, 2006 to Jan 23, 2007 in Gynae Unit II, Civil Hospital, Karachi. A predesigned proforma was filled and later on analyzed.

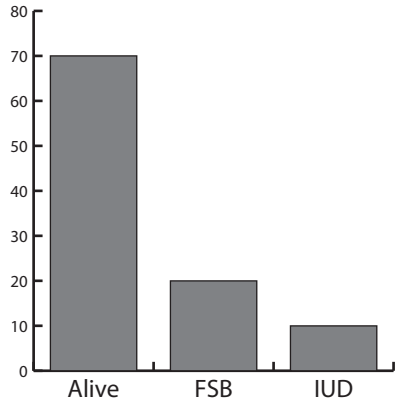
32 cases of abruptio placentae and 20 patients of placenta previa were observed during the study period. The total number of premature babies were 15 (46.9%) in abruptio placenta compared to 08 (40.0%) in placenta previa. Prematurity was high in abruption placenta when compared with placenta previa. Distribution of gestational ages showed that 15 cases (46.9%) were less than 37 weeks group and 17 cases (53.1%) were greater than 37 weeks group, while in patients

Figure 1: *Abruptio placenta: distribution of patients according to outcome (n-32)*



Key: *FSB-Fresh Still-birth, IUD-Intrauterine Death, NND-Erarly neonatal death*

Figure 2: *Placenta Previa: distribution of patients according to outcome (n-20)*



Key: *FSB-Fresh Still-birth, IUD-Intrauterine Death*

with placenta previa 08 cases (40.0%) were in less than 37 weeks of gestation and 12 cases (60.0%) were of greater than 37 weeks.

The perinatal mortality rate associated with abruption was 59.3%. Mortality with abruption was more likely to occur before delivery than after. 08 patients (25%) had intrauterine death and 09 patients (28.1%) had fresh still birth. Neonatal APGAR score at one minute was 0 in 17 out of 32 cases. In remaining 15 cases, the APGAR score was <5 in 9 cases and >5 in 7 cases. Early neonatal death seen in 02 cases. Perinatal mortality was seen in 06 (30.0%) patients in placenta previa. 04 fresh still birth (20.0%) and 02 intrauterine death (10.0%) was seen out of 20 patients. APGAR score at one minute was 0 in 06 cases. In remaining 14 cases, APGAR score was <5 in 6 cases and >5 in 08 cases.

The age ranged between 25 to 40 years and the mean age was 30 years in abruption placenta. However, the maximum numbers of patients 09 were 31-35 years old, while 06 patients were less than 30 years old in patients with placenta previa.

Relation to parity showed that a high proportion of patients with placenta previa were multiparous, while nulliparous were only 01. The parity distribution showed that 02 were nulliparous and 30 patients were multiparous in abruption placenta.

Bleeding per vaginum was the frequent presenting complain. In cases of abruption placenta 09 patients presented with mild bleeding, 13 patients with moderate and 10 patients with heavy bleeding, while in cases of placenta previa 05 patients had mild bleeding, 11 had moderate bleeding while 02 patients presented with heavy bleeding.

Haemoglobin level of mother ranged from 4.0 to 10.5 gm/dl. The haemoglobin distribution showed 23 cases in the 4.0-9.0 gm/dl groups and only 9 cases in 9.0-10.5 gm/dl groups in abruption placenta. 04 cases of placenta previa had the history of previous c/section, 05 patients had the history of dilatation and evacuation while one patient had dilatation and curettage.

Recurrence in abruption seen in 03 cases.

Discussion:

Antepartum haemorrhage is an important obstetric entity. The associated high maternal and fetal morbidity and mortality is very challenging for the obstetricians.

Ananth CV et al reported nearly 12% perinatal mortality in 2001 from United States. [4] High rate of fetal and neonatal mortality have been reported in some studies, such as from Iraq. [15]

High frequency of maternal anemia is reflective not only of the bleeding of abruption placenta but is aggravated by an underlying chronic maternal nutritional deficit common in this country.

The suspicion of pre-exsisting anemia in patients suffering from abruption placenta is difficult to confirm because majority of the patients were admitted as emergencies and were unbooked and prior haematological investigation is exceptional. The association of anemia to abruption has also been reported in other studies. [16]

Sarwar I et al reported 16.98% frequency of hypertension. [17] Ananth CV et al reported the link of abruption placenta and hypertension. [18]

Liaquat NF reported the recurrence rate of 2-17.3% [19].

Tuzovic Lea et al reported that 41% of women with placenta previa delivered prematurely. [6] This finding is consistent with another study conducted by Ananth CV et al. [3] Another study again conducted by Ananth CV and colleague in 2001 was not coinciding with above and the incidence of preterm delivery was 12% [20]

The placenta previa was associated with 30.0% perinatal mortality rate and was explained by gestational age at delivery. Ananth et al & Salihu observed that the major causes of fetal death in placenta previa were prematurity, severe haemorrhage and congenital abnormality. [21]

This study clearly demonsterated that women older than 30 years had higher risk of placenta previa development. Frederiksen and his colleague reported a similar observation, [22] although the study of Abu-Heija et al, could not prove this association. [8] The mechanism by which advanced maternal age impaires normal placental development is not well understood. One of the possible explanations could be that the percentage of sclerotic changes on intramyometrial artries increases with increasing age, thereby reducing the blood supply to placenta.

In the study of Abu Heija et al, the gravidity became important after 5 or more previous pregnancies. Some earlier studies showed that parity became significant after 4 or more previous pregnancies. [8]

Women presented with vaginal spotting were at lower risk of being delivered prematurely, when compared to women who had heavy bleeding. Lam CM et al reported similar results. [23]

Women with major placenta previa were found to have higher number of previous c/section, which is in accordance with the study of Dola et al, in 2003. [24] Study conducted by Ashraf R and his colleague at Lahore General Hospital in 2005 found 65% frequency. [25]

It can be concluded that APH is an obstetric emergency associated with maternal and fetal morbidity and mortality. Prematurity is the single most common reason for neonatal mortality. The fetal survival is much lower in developing countries than in developed world due to the lack of properly equipped neonatal intensive care facilities. The blood transfusion services, which are mainly available at tertiary care centres are unable to meet the demand of massive transfusion which is required in APH. The etiology of abruption may remain unknown so it will remain unavoidable cause of poor fetomaternal outcome. More research is needed to explore the insight of abruption to achieve a better outcome.

The majority of patients of perinatal mortality presented with intrauterine death so that any management protocol directed at abruption placenta and its consequences is of little help in preventing perinatal mortality.

Any patient who is at risk of abruption placenta and has vaginal bleeding during the last trimester of pregnancy should be hospitalized until the delivery and blood transfusion. Obstetric outcome for women with the history of abruption placenta can be improved if good antenatal care is provided at a center with the expertise to identify the risk factors and to intervene timely.

Women with risk factors should be carefully evaluated during pregnancy for detection of placenta previa. The condition can be diagnosed on ultrasonography. Early detection should encourage a careful and exact evaluation with timely delivery in order to prevent or reduce the occurrence of maternal and perinatal complications associated with placenta previa. The results of study indicate that knowledge about the obstetric factors predisposing the women for placenta previa development is important for choosing adequate preventive measures for these women. Awareness of clinical risk factors can aid in careful preoperative preparation and in counseling women with placenta previa regarding the likelihood of encountering placenta accreta.

Advanced maternal age, a risk factor for placenta previa is important for women who contemplate delayed child bearing and for clinicians who provide antenatal care and counseling to them.

Older mother especially after the age of 35 years should be carefully evaluated for placenta previa. Women should be encouraged to complete their families relatively earlier in their reproductive age.

Women of higher gravidity and parity also need special attention with regard to the placental localization. Public awareness should be there about the risk of multiparity especially grand-multiparity. Couples should be advised to limit the family size and practice contraception.

Caesarean delivery is an important milestone in the history of obstetrics, though has considerably decreased the maternal and perinatal morbidity but at the same

time has resulted in certain adverse consequences. The frequency of placenta previa is very high in previous caesarean section. One should anticipate it in all patients with previous caesarean section. One should also anticipate adherent placenta and the chances of performing caesarean hysterectomy should also be kept in mind. Always counsel and take prior consent from the patient and her husband about the possibility of undergoing caesarean hysterectomy. The study thus provides the reason for reducing the primary c/ section rate and advocating vaginal birth for women with prior caesarean delivery. ECV should be promoted for breech presentation. Obstetrician should be sufficiently trained to conduct instrumental vaginal deliveries and breech delivery of a woman who comes at full cervical dilation.

The association of placenta previa with previous miscarriage is important. Woman with such history especially evacuated by D&E should be carefully screened for placenta previa. People should be informed of the dire consequences of induced abortion and advised to practice other methods of family planning rather than getting rid of conception in this way. In Pakistan many women fall a pray in the hands of quacks to get rid of unwanted pregnancy, who carry out abortion in an unsafe manner without asepsis, which result in serious morbidity and some times mortality.

Delay or fault from the part of patient, her relative or traditional and religious barrier, poor transport facilities and bad roads may lead to many deaths at home or on the way. The complications are life threatening and can be prevented by adequate health care infrastructure by using available resources.

The poor fetal outcome is more common in abruption than in placenta previa. However both condition compromise maternal outcome. PPH, renal complications, caesarean hysterectomy requiring massive blood transfusion are the major maternal complications observed.

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