ANTEPARTUM HAEMORRHAGE

THESIS

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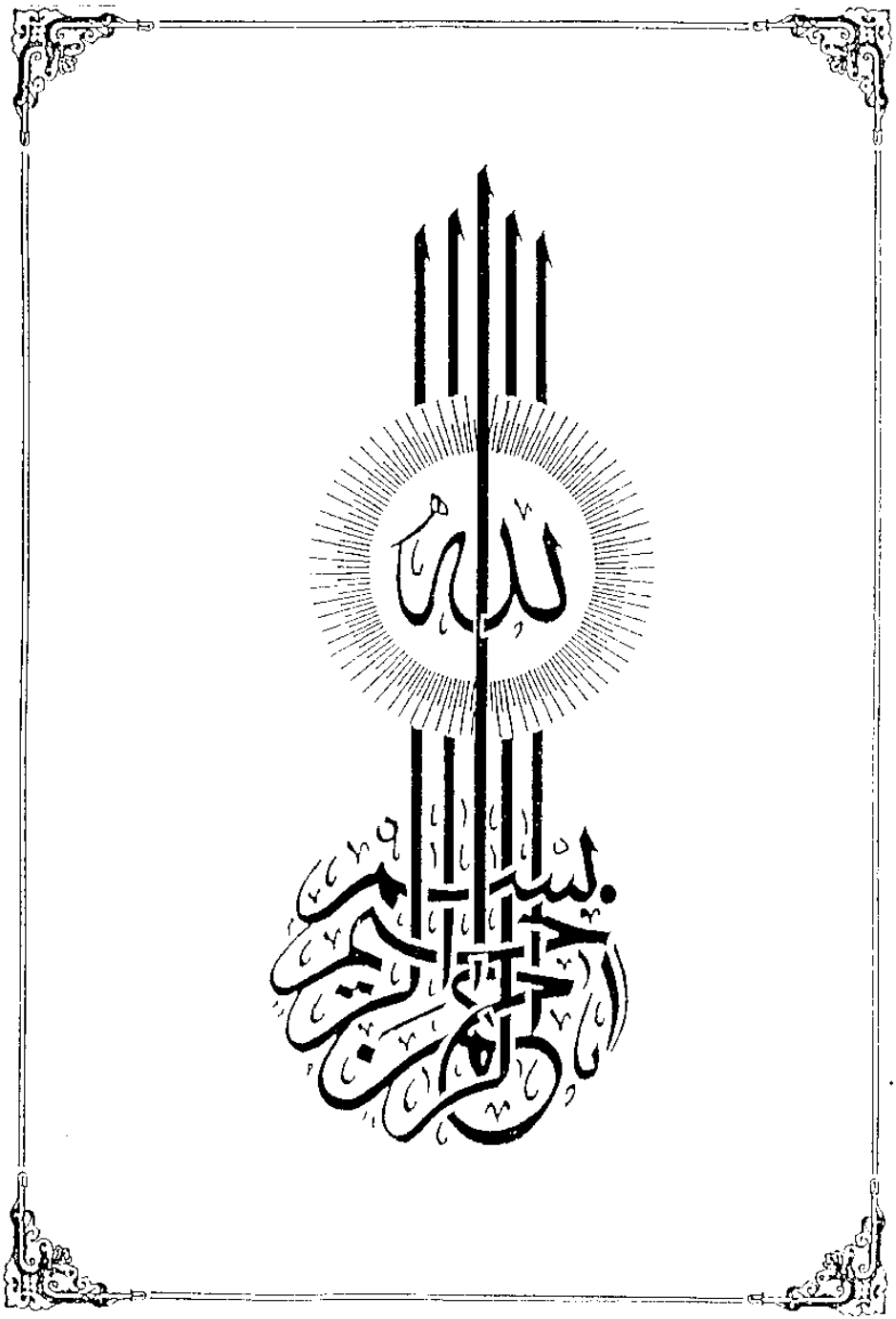

INTRODUCTION

Antepartum haemorrhage is the term applied to bleeding from or into the genital tract occurring in the third trimester of pregnancy and after viability of the foetus (after the twenty eighth week of pregnancy) or during the first or second stages of labour. The two forms of haemorrhage chiefly considered in this subject are placenta praevia and abruptio placentae. These two complications are responsible for a considerable number of maternal and foetal deaths anually. Placenta praevia used to be regarded as the more serious condition than abruptio placentae, but with modern methods of treatment the position has become reversed. Shock and haemorrhage are the chief causes of maternal death in both conditions. Next comes sepsis that is responsible for more deaths in placenta praevia than in abruptio placentae. On the other hand, as abruptio placentae is associated (at least in its graver forms) with renal failure and with defective blood-clotting, a number of maternal deaths following this condition are misleadingly classified as 'pregnancy toxaemia' or 'postpartum haemorrhage'. The two forms of antepartum haemorrhage are said to be commoner in multiparae and in the advanced age than in primigravidae and the young age. With the advent of modern methods of management, the maternal mortality should be nil.

Classification of causes and types of antepartum haemorrhage:

There are two main forms of haemorrhage chiefly considered in this subject named 'Unavoidable haemorrhage' or Placenta praevia and 'Accidental haemorrhage' or abruptio placentae.

In both, the haemorrhage is due to detachment of the placenta; in the former the placenta is situated in whole or in part in the lower uterine segment; in the latter it occupies its normal position in the upper uterine segment either posteriorly or occasionally anteriorly.

Scott (1968)(108) suggested that cases of antepartum haemorrhage should be classified into: Abruptio placentae, bleeding from edge of the chorionic plate; and placenta praevia.

Macafee et al. (1963)(66) suggested the following as a more practical classification:

1. Placenta praevia including vasa praevia: This is the condition in which the placenta is partly or wholly implanted into the lower uterine segment. The diagnosis of which depends on the placenta either being seen or felt in this situation.

Vasa praevia:

Is a rare condition in which the umbilical vessels that course through the membranes due to velamentous

insertion of the cord. In such condition, the bleeding is foetal and not maternal in origin and comes from rupture of the umbilical vessels and the child can be born (bled white). The bleeding is rarely severe. Torrey (1962)[120] and Beer (1962)[8] have discussed this subject. Naftolin and Michell (1965)[80] examined the blood coming from the vagina and identified the characteristic foetal haemoglobin in their three cases by the presence of nucleated red cells and by the denaturation of foetal haemoglobin in an alkaline solution. Thus they differentiated this case from other causes of antepartum haemorrhage.

2. Accidental haemorrhage: is defined as bleeding due to separation ante or intrapartum of a placenta that is normally situated in the upper uterine segment. The diagnosis should be made only if after delivery of the placenta, there is an evidence of old or recent retro-placental haematoma.

The accidental haemorrhage may complicate toxaemia or due to non-toxaemic factors. The latter may occur following: artificial rupture of the membranes, external version and it may be associated with placenta marginata or circumvallata. It may result also from external trauma after a kick or fall on the abdomen. Other aetiological factors for the non-toxaemic accidental

I. PLACENTA PRAEVIA

This condition was correctly described by Portal in 1683[95], although Schacher in 1709[106] was the first to demonstrate on the dead subject the exact relationship of the placenta to the uterus. Prior to 1683, the condition was supposed to be due to separation and prolapse of the placenta which becomes reingrafted in the lower uterine segment.

Today the term unavoidable haemorrhage introduced by Rigby in 1775[102] is seldom employed and the condition is usually refered to as placenta praevia.

Aetiology:

The following are the more accepted theories offered to explain the occurrence of placenta praevia:

1. The fertilized ovum becomes imbedded in the lower uterine segment when it first enters this organ instead of as it is usually the case at the fundus. The decidua basalis would then form wholly or inpart upon the lower segment. This is called; the formation of basal placenta praevia. Two forms of implantation have been described more than 100 years ago by Barnes in (1858)[5], either in the isthmus or in the immediate neighbourhood of the isthmus.

This was fully discussed by Luh (1933)[60] and Neumann (1934).[84] The first form of implantation (primary

isthmical implantation) is rare, while the other one (Secondary isthmical implantation) in which the placenta in its development comes to extend into the isthmus is much more common.

The implantation of the fertilized ovum in the lower uterine segment is usually explained by: the fertilized ovum is hurried through the fallopian tube and into the uterus, where it reaches the lower pole or isthmus before it attains the stage of development at which the embedding can occur.

2. After implantation of the ovum in the normal position (in upper uterine segment), the placenta may so develop as to become attached in part to the lower uterine segment. Apart of the chorion which is in contact with the decidua capsularis (chorion laeve) has not atrophied, but has continued to develop into placental tissue upon the decidua capsularis on either side of the decidua basalis.

   This is called the formation of a capsular placenta praevia.

3. For some reason or another, the decidua may be defective and the young chorionic villi have to spread out over the uterine wall. As a result of this, part of the placenta may find its way into the lower uterine segment. However, in multiple pregnancy, the combined

large placenta may encroach on the lower uterine segment.

It is quite possible that the time of onset of haemorrhage and its severity may be affected by the mode of origin of the placenta which is praevia. For example: It frequently happen that in central placenta praevia (degree IV) the first attack of haemorrhage does not occur until late in pregnancy or even not until labour commences.

Predisposing conditions:

1. Large diffuse placental formation: Such occurs in placenta membranacea. Although this abnormal development may be the result of faulty implantation and poor blood supply.
2. High multiparity: where the decidual formation is deficient.
   Findlay (1938)[35] found an incidence of 14% in primigravidae and 86% in multigravidae i.e. 1:6. However, Berkeley (1936)[9] found that of 4406 cases of placenta praevia 20% were in primigravidae.
3. Age: women over the age of 35 years are more likely to have placenta praevia than those under the age of 25 years, regardless of the parity (Pritchard 1980).[98]
4. Focal endometrial conditions: Inflammatory and atrophic changes may result in defective vascularization of the placenta.

Incidence:

Westgren (1954)[126] reported that in hospital practice, placenta praevia occurs in 1 : 100 - 200 cases i.e. ½-1%, whereas throught the country as whole incidence is only 1 in 500 - 1000 births, i.e. 0.1 - 0.2%.
William et al. (1978)[130] gave an incidence of 0.6%.

In practice, it is often difficult to allot a case of antepartum haemorrhage to either placenta praevia or accidental haemorrhage group. Minor overlapping of the placenta into the lower uterine segment is often suspected, but cann't be proved. This is why hospital statistics vary so much regarding the frequency of the two conditions.

Classification of the placenta praevia:

The extent to which the placenta is praevia varies greatly.

It was customary to divide it into: lateral-marginal and central placenta praevia.

A more precise grouping was suggested by Norman White in 1929[129] as follows: 4 degrees.

1. First degree: the greater part of the placenta is attached to the active upper uterine segment and only the lower margin of it dips into the passive lower uterine segment (lateral placenta praevia).
2. Second degree: the margin of the placenta reaches down to the internal os (marginal placenta prae...

3. Third degree: the placenta completely covers the internal os when closed, but does not entirely do so when it is fully dilated (Incomplete centralis).

4. Fourth degree: the centre of the placenta corresponds with the internal os, or the placenta completely covers the internal os when the cervix is fully dilated (complete central placenta praevia).

Macafee et al. (1963)[66] in their series of 425 cases, he grouped them as:

Grade I	Grade II	Grade III	Grade IV
81 cases	120 cases	112 cases	117 cases

In placenta praevia degrees I & II, the greater part of the placenta is situated either anteriorly or posteriorly.

Some writers (Macafee and Stallworthy) have stressed how unfavourable is the latter condition as: easy engagement of the head is hindered by a posteriorly situated placenta and during delivery, that organ is directly compressed between the presenting part of the foetus and the promontary of the sacrum of the mother, thus occluding the foeto-maternal circulation.

Mechanism of bleeding in placenta praevia:

The drawing up of the cervix and the lower uterine segment over the advancing lower pole of ovum like a

sleave, the part of the placenta lying over or nearest the cervix is thus "sheared" of the wall of the lower segment. In consequence of this, inevitable separation of the placenta occurs and bleeding follows ruptured utero-placental vessels.

Haemorrhage is said to be unavoidable in placenta praevia. This is what happens in the last weeks of pregnancy or during labour when the intermittent uterine contractions (Braxton Hick's contractions), become gradually stronger and excercise a dilating force which is sufficient to cause slight separation of the placenta and more or less profuse bleeding.

Clinical features:

A history of "warning haemorrhage" or of recurrent bleeding that is commonly slight is obtained from the patients who are later found to have a placenta praevia.

- The haemorrhage in placenta praevia is characterized by being: causles, painless and recurrent. It is not accompanied by pain, unless labour starts simultaneously.
- The onset of bleeding is usually spontaneous and often occurs when the woman is at rest, although it may follow straining efforts e.g. severe attack of coughing or sneezing or straining during defaecation or after doing an enema. Also it may appear when the patient is asleep, she wakes up surprised to find herself lying in a pool of blood.
- The bleeding is usually slight in the first attack ceases spontaneously and recurs again when least expected. In some cases, however; the initial bleeding may be very severe and may even prove fatal as it does not cease entirely.
- In the great majority of cases, the bleeding only appears after the twenty-eighth week. In some cases, however, it may start at an earlier period and the condition is diagnosed as threatened abortion or miscarriage.
- The amount of bleeding varies according to the type of placenta praevia. It is usually abrupt and alarming in placenta praevia centralis, and less severe in placenta praevia marginalis and lateralis, but there

are exceptions to this rule as the bleeding may be profuse and fatal in any variety of placenta praevia.

Myerscough (1976)[79] recorded that of 279 cases of placenta praevia in his unit; Thirty three percent gave a history of warning haemorrhage, of which 58% had the bleeding at or before the thirty sixth week of pregnancy. Those patients who were admitted ill had an increased incidence of preceding haemorrhage. These findings are similar to those presented by Berkeley (1936)[9] in his analysis of 4065 cases. Macafee (1962)[65] stated that a warning haemorrhage before onset of labour was absent in 15% of his cases.

Also, Morgan (1965)[75] found that it is absent in 19% of her 536 cases.

A practical point to note from these statistics is that a woman who is otherwise symptomless and who for no apparent reason has a painless bleeding after the twenty eighth week of pregnancy must be assumed to have an abnormally situated placenta (Myerscough, 1976)[79].

It is a surprising, but well authenticated fact that a placenta which is entirely situated in the lower pole of the uterus may cause no warning haemorrhage, and bleeding may not occur until labour starts. This is

because a placenta so situated in this position is less likely to be dislodged by the Geographical realignment which occurs when the lower uterine segment is forming in the last weeks of pregnancy, than is one which is situated partly in the lower and partly in the upper uterine segment (Myerscough, 1976)[79].

The blood comes mainly from large sinuses of the ragged uterine wall, from the placenta that has been detached only to slight extent and from the separated portion of the placenta. Sometimes, a very profuse and fatal haemorrhage has resulted from laceration of a single large vessel.

Several writers have demonstrated that there exists a large circular sinus around the placenta and all agree that the periphery of the placenta is extremely vascular and it bleeds profusely if the margin is detached (Marginal sinus rupture).

Other clinical features of placenta praevia:

Malpresentations, persistant high floating fetal head (non-engagement) and pre-mature labour are common features of placenta praevia and may be regarded as effects of this complication.

Stallworthy (1951)[114] pointed out that the presence of malpresentation sometimes suggests placenta praevia before any bleeding has occurred.