OBSTETRICS IN GENERAL PRACTICE

Ante-partum Haemorrhage—1

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Ante-partum haemorrhage (A.P.H.) is one of the gravest obstetric emergencies; with dramatic suddenness a pregnant patient can become exsanguinated to the verge of death and her baby may die. Unlike post-partum haemorrhage, which is always preceded by the adequate warning mechanism of labour, A.P.H. often occurs without warning. As it still accounts for 10% of the maternal deaths associated with childbirth, it is vital that all those responsible for the care of pregnant women should be aware of (a) the warning signs; (b) the steps that may be taken to prevent it; and (c) the correct emergency management of the condition. In the first part of this article I propose to discuss warning signs and preventive measures, leaving management for the second part.

Ante-partum haemorrhage is customarily defined as haemorrhage from the genital tract occurring after the 28th week of pregnancy but before delivery of the baby. The 28-week limit is an arbitrary one related to the legal definition of a viable birth; exactly the same pathological types of haemorrhage may be encountered in the later part of the second trimester of pregnancy, though bleeding then is relatively infrequent. Academically, cases may be divided into "true" A.P.H., when the bleeding is from the placental site, and "false," when the bleeding is from lower down the genital tract—for example, the cervix. This is not a distinction of practical importance for those practising midwifery outside hospital, since it must be assumed initially that every vaginal blood loss before delivery is coming from the placenta.

Classification

Edward Rigby in the late 18th century distinguished between the "inevitable" A.P.H. occurring in association with a low-lying placenta and the chance or "accidental" occurrence of haemorrhage with a normally situated placenta. In its day this was a great advance in obstetric thought. Unfortunately the "inevitable" type of haemorrhage has since come to be spoken of merely as "*placenta praevia*," while the "accidental" has until very recently retained its name. The term "accidental" when not opposed to "inevitable" suggests that it is in some way related to trauma, which is practically never the case, and this has led to confusion of thought.

The current tendency is to use the clearly descriptive term "*abruptio placentae*," introduced by Couvelaire to describe the very serious type of haemorrhage occurring from the decidual attachment of a normally situated placenta. As this type of haemorrhage progresses, the accumulated blood causes more separation of the placenta, and thus more haemorrhage, until the edge of the placenta is reached. After this, blood can escape via the potential space between the decidua and chorionic membrane to the cervix.

Haemorrhage may also occur from the edge of a normally situated placenta—*marginal haemorrhage*—formerly referred to as "revealed accidental haemorrhage" (Fig. 1).

A practical classification of ante-partum haemorrhage as it presents to the clinician is as follows:

- (1) Abruptio placentae.
- (2) Placenta praevia.
- (3) Indeterminate A.P.H.

"Indeterminate" signifies a collective clinical category. It covers marginal haemorrhage and cases which cannot with

FIG. 1.—Diagrammatic representation of the three pathological types of A.P.H.

confidence be ascribed to abruptio placentae or placenta praevia. In some of these the source of bleeding ultimately becomes clear. It may eventually be found that there is a placenta praevia, or on inspection of the placenta after delivery it may be clear that there has been a minor, localized abruptio placentae.

The other possibilities in order of frequency are (a) marginal haemorrhage; and (b) a "false" A.P.H.—that is, the source of bleeding has not been the placenta. In this category come local cervical and vaginal lesions and cases in which an excessive "show" has been interpreted as an A.P.H.

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Incidence

The frequency of A.P.H. varies with the age, parity, and social status of the population, but a total incidence of 2 to 3% is not unusual. The cases are approximately equally divided between the three clinical categories: abruption, placenta praevia, and indeterminate.

Clinical Picture

The presentation in the great majority of cases merely accords with the definition—bleeding from the genital tract after 28 weeks. Painless bleeding is typical of placenta praevia, and if such a haemorrhage is associated with any of the physical signs of the condition there can be little doubt of the diagnosis.

Abruptio placentae, however, may not be associated with any revealed bleeding in the early stages. In this event the patient, usually of high parity, develops pain over the site of the uterus which steadily increases in severity; there is no periodicity as with the pain of labour. Faintness and collapse may occur. On examination there are usually signs of shock; the uterus is extremely hard and does not relax; foetal parts are difficult to feel; usually the foetal heart is inaudible. Unless the doctor is on the alert he may miss the diagnosis of A.P.H. until the bleeding becomes revealed. This will eventually occur but often not until the patient's condition has deteriorated greatly.

Prevention

The scope for specific prevention of ante-partum haemorrhage is limited but antenatal care has much to offer towards reducing the risks should such a complication occur. Important measures include: (a) booking for hospital confinement cases judged to be particularly liable to ante-partum haemorrhage; (b) prevention of anaemia; (c) suspecting the diagnosis of placenta praevia before serious ante-partum haemorrhage has occurred; (d) early detection of pre-eclampsia; (e) avoidance of trauma; and (f) avoidance of sudden uterine decompression. Let us consider each of these measures in turn.

Booking for Hospital Confinement

If a woman booked for hospital confinement suffers an ante-partum haemorrhage, either she will be admitted directly to the hospital or, if her doctor is summoned, he will be in a position to make appropriate arrangements immediately with the hospital at which she is booked. If hospital booking is not arranged the delay in admission is likely to be longer, and even slight delays may prove fatal.

Women who qualify for hospital booking in this connexion include those who have had previous ante-partum haemorrhages (most studies show a tendency to recurrence), those of parity higher than four, and those over 35 years of age. In the high-parity group the risk of ante-partum haemorrhage is very great—over 10% in O'Sullivan's series.¹ In the latest maternal mortality survey for England and Wales² 30% of deaths due to abruptio placentae and 38% due to placenta praevia occurred in women who were having their fifth or subsequent confinement. These percentages may be compared with the figure of 7.8% total births occurring to women of these parities. In the same survey it was noted that over two-thirds of the deaths from placenta praevia occurred in women over the age of 35.

Prevention of Anaemia

It is self-evident that the greater the degree of anaemia the lower is the ability to withstand haemorrhage. There is a strong suspicion that many maternal fatalities from ante-partum

haemorrhage occur in women who have been allowed to become needlessly anaemic in pregnancy. In the maternal mortality survey only 62 out of 130 women who died from ante-partum haemorrhage had records of previous haemoglobin estimations, and half of these showed evidence of anaemia.

The exact policy of management of pregnancy anaemia is of less importance than the efforts which should be made to detect it at its earliest stage. Whether or not prophylactic iron therapy is being given, a haemoglobin estimation should be performed at the initial booking examination, which is usually at 8 to 12 weeks, again at 26 to 28 weeks, and thereafter every four weeks to term—making approximately five estimations in each pregnancy. If the haemoglobin falls below acceptable limits (12 g. per 100 ml. or 80% on a 14.8 g. per 100 ml. scale), then more frequent estimations are indicated to assess the response to therapy.

Without entering into the argument whether iron therapy in anaemia of pregnancy should routinely be combined with the administration of folic acid—this is now being done in an increasing number of centres—it is of interest to note a recent suggestion that there is a relationship between folic-acid deficiency and placental abruption.³ Megaloblastic folic-acid deficiency anaemia of pregnancy and abruptio placentae both show a similar pattern of geographic distribution in Britain—roughly related to the “two nations” of the sociologists. Both conditions occur particularly in the North among women of relatively poor social status and high parity. It may be that the aetiology of the abruption is due to some other metabolite often deficient *pari passu* with folic acid, but it is important to appreciate that it is in such cases of high parity and poor nutrition that abruption is particularly liable to develop.

Early Suspicion of Placenta Praevia

It is now accepted that the frequency with which the presence of placenta praevia is suspected before haemorrhage has occurred is an index of the quality of antenatal care. The findings which should arouse suspicion are: (a) an abnormal or unstable foetal lie in late pregnancy—a persistent transverse lie is of the greatest significance; (b) a presenting part which has an abnormal relationship to the pelvis—for example, held high above the brim (by a central placenta praevia), deviated from the midline (by a lateral placenta praevia), pushed forward over the symphysis (by a posterior placenta praevia), or rendered difficult to define through the anterior abdominal wall (by an anterior placenta praevia). These physical signs become more significant the longer they persist, and if they have been elicited independently at two or more separate antenatal examinations in the last 6 to 8 weeks of pregnancy then it is usually appropriate to take steps to exclude placenta praevia by some form of placentalography. If this cannot be done then hospital admission is indicated. If the physical signs are very definite it is advisable to treat the case as one of placenta praevia on this basis alone; placentalography is then superfluous.

It is part of the traditional teaching on placenta praevia that major haemorrhages from the condition are always preceded by small “warning haemorrhages.” These haemorrhages or “shows” may occur before 28 weeks and therefore be classified as threatened miscarriages. If they occur later, and particularly if they are repeated, all of them no matter how trivial should be viewed with the greatest suspicion and appropriate steps taken to exclude placenta praevia.

It is widely appreciated that vaginal examination is extremely hazardous in cases of possible placenta praevia, as it may provoke separation of the placenta with massive haemorrhage. Surprisingly, it is often not realized that a rectal examination is even more dangerous. Vaginally, with only the thin glove covering the examiner's finger, there is the possibility that the placenta may be felt before it is seriously disturbed. On rectal examination the gloved finger is covered by rectal wall, vaginal

wall, and the intervening fascia. This makes it virtually certain that the placenta will not be detected before it is separated and serious bleeding provoked.

Early Detection of Pre-eclampsia

Early detection of pre-eclampsia is a *sine qua non* of good antenatal care. Traditional obstetric teaching is that there is an aetiological relationship between abruptio placentae and pre-eclampsia, and it is implied that toxæmia predisposes to abruption. If this is true, early detection of pre-eclampsia followed by appropriate management of the toxæmic process might be expected to result in a reduction in the incidence of abruption. It is remarkable, however, how infrequently abruption is seen in patients in whom a prior diagnosis of pre-eclampsia has been made, and recently the existence of a significant aetiological relationship has been seriously questioned.⁴

Avoidance of Trauma

The one specific form of trauma in the antenatal period which may account for some cases of ante-partum haemorrhage is that produced by external version. Opinion varies widely

with regard to the place of external version in modern obstetrics, but most obstetricians agree that if it has any place it should only be attempted gently on unanaesthetized patients. If the manipulations prove difficult or cause pain, the attempt should be abandoned immediately.

Avoidance of Sudden Uterine Decompression

A rare cause of abruptio placentae is the sudden release of liquor amnii in cases of severe polyhydramnios. The sudden reduction in the area of the uterine wall to which the placenta is attached may result in placental separation in a manner similar to that which occurs in the third stage of normal labour after the baby has been expelled.

[To be concluded.]

REFERENCES

- ¹ O'Sullivan, J. F., *J. Obstet. Gynaec. Brit. Cwlth*, 1963, **70**, 158.
- ² Ministry of Health, *Report on Confidential Enquiries into Maternal Deaths in England and Wales 1958-60*, 1963. H.M.S.O., London.
- ³ Hibbard, E. D., *J. Obstet. Gynaec. Brit. Cwlth*, 1962, **69**, 739.
- ⁴ Hibbard, B. M., *ibid.*, 1962, **69**, 282.

TO-DAY'S DRUGS

Cough Suppressants

The traditional cough mixture is still one of the commonest medicines prescribed. Surveys of prescribing habits indicate that such mixtures account for 8 to 10% of all prescriptions issued on Form E.C.10.¹ If one adds to this the number of cough remedies which are bought over the counter without prescriptions the annual expenditure on such medicines must be enormous. The majority of these medicines are prescribed or bought with the intention that they will alleviate cough by preventing it, and most cough mixtures contain at least one drug which is recognized as a cough suppressant. Many of them also contain other drugs which are claimed to act as expectorants, decongestants, or bronchodilators. The pharmacological activity of these ingredients in the doses in which they are present in most cough mixtures is usually negligible and the real value of such nostrums is due either to a placebo effect or to the pharmacological action of the antitussive drugs which they contain.

Pharmacology

Cough is a protective physiological reflex whose purpose is to keep the respiratory tract free from particulate matter and accumulated secretions. The reflex is usually initiated by noxious agents irritating some part of the mucous membrane of the respiratory tract. The cough centre is situated in the medulla adjacent to the roots of the vagus and glossopharyngeal nerves. The cough reflex is to a large extent under voluntary control, so that coughing can be voluntarily suppressed; and conversely it can be centrally originated. A cough suppressant can be defined as a drug which raises the threshold of the cough centre, or acts peripherally in the respiratory tract to reduce the impulses which pass to this centre; or combines both these actions.²

The assessment of cough suppressants is difficult. It is possible to induce cough experimentally both in animals and in man, for example by the inhalation of an aerosol containing either acetylcholine or citric acid, and many drugs have

proved effective antitussive agents when tested for their ability to reduce the amount of coughing after a standard cough-inducing stimulus has been given. The results obtained by such methods, however, do not always correlate well with the clinical effectiveness of the drug in the treatment of pathological cough in man. There is no reliable way of assessing the value of a cough suppressant except by clinical trials in patients with respiratory disease. Unfortunately, there have been very few studies in which antitussive drugs have been adequately tested by suitably designed controlled trials using either a placebo or a well-established remedy as a standard for comparison. In most trials many of the patients have been suffering from acute respiratory infections which are self-limiting and in which the duration of cough is short. Moreover it has been shown that in the majority of such patients cough can be relieved by a simple syrup which does not contain any active drug.³ In most trials also the assessment is made of the patients' own impression of the effectiveness of the treatment. Even when patients claim subjective benefit and consistently recognize one drug as better than another this does not necessarily mean that the drug has reduced the amount of coughing.⁴ Very recently an ingenious method of measuring the amount of coughing objectively by means of a tape-recorder system has been described.⁵ By this method it has been shown that most patients with chronic cough have little idea of the extent to which their cough varies from day to day, and that they are usually unaware of the effects of antitussive drugs. Most cough suppressants also have sedative, analgesic, or euphoric properties, and it may be that their clinical value is due to these actions rather than to any specific antitussive effect.

Cough-suppressant Drugs

The traditional cough-suppressant drugs are derivatives of opium. There are a number of official, well-established mixtures which contain relatively small amounts of opium alkaloids (Table I). These well-tried remedies should not be neglected in favour of newer and more exotic preparations,