Remarks

ON

THE SYMPTOMS AND DIAGNOSIS OF
PLACENTA PRAEVIA:

WITH A NOTE ON THE USE OF SUBMAMMARY SALINE.*

BY

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THE task which has been set me to open a discussion on the symptoms and diagnosis of placenta praevia is indeed a difficult one, for the treatment depends so much on diagnosis that it is nearly as impossible to divorce these two aspects of the subject as it is to separate the Ghost from the play of *Hamlet*, or, at the present juncture, the Gaelic language from Ireland. In spite of this, the effort will be made, and if occasionally a casual remark is let fall on the subject of treatment when it is necessary during the course of the discussion on diagnosis, those who realize the difficulties of the situation will excuse; those who do not, will not notice.

NOMENCLATURE.

It is absolutely indispensable in a consideration of this subject that the nomenclature should be made very clear. It has been the custom in some textbooks to group various haemorrhages in the fourth, fifth, and sixth months under this term, and as the condition of praevia then has a very different significance from that of the true condition, it seems necessary to lay down the law that "when bleeding in the last three months of pregnancy is caused by the separation of a placenta situated either wholly or in part in the lower uterine segment, the condition is known as unavoidable haemorrhage, and the placenta is termed a placenta praevia." It seems necessary further to define accurately these last three months, and to state that the condition can only occur from the twenty-eighth week, which is the first possible period when the child may be deemed viable. Any haemorrhage from the formation of the placenta until the twenty-eighth week must be grouped under "miscarriage." The terms "unavoidable" and "praevia" are satisfactory in that they convey the fact that haemorrhage is "unavoidable" because of the position of the placenta, which is ("praevia") before the presenting part.

The varieties of location must next be considered, for often it is on this important fact that treatment depends.

We speak of: (1) Central or total placenta praevia—where the placenta covers the internal os completely; when the whole of the palpable lower segment is covered by it and when its margin cannot be reached by the finger. (2) Partial—where the internal os is partially covered—that is, there is a definite space between the margin of the placenta and the rim of the os. (3) Lateral—where the edge can be felt just above the internal os in the lower uterine segment, but the os is not covered. The term "marginal" should be removed from the literature, as we believe that the above nomenclature gives the best idea of the conditions present with a view to treatment.

It was suggested by a correspondent in a recent issue of the *British Medical Journal* that the last two should be grouped as one. This would be a very retrograde step. The practitioner must differentiate the partial from the lateral varieties. He must know that if placenta is palpable over the internal os, it may not be a total praevia. He must realize that if there is bleeding suggestive of praevia, it may be a low insertion high up—that is, a lateral insertion. Finally, a lateral insertion may not demonstrate its presence until the cervix is nearly fully dilated, while the partial shows itself long before this.

The cause of the haemorrhage and the reasons for detachment of the placenta go hand-in-hand.

1. The most likely reason for separation is that the painless contractions of Braxton Hicks, which continue during the whole pregnancy, cause a passive dilatation of a lower segment which is softer and more dilatable than normal;

during the later months of pregnancy the placenta does not expand with it and must therefore become detached.

2. Disease of the placenta may occasionally be a causal factor from faulty adherence, and it is a well-known fact that the placenta may be diseased.

3. The capsular development of the placenta may prevent the attachment being as firm as usual.

Hand-in-hand with these theories are: (1) the opened placental site sinuses pouring out blood after separation; (2) haemorrhage occurring from the circular sinus and the intervillous spaces of the placenta.

These are the most plausible of the many theories suggested.

HISTORICAL.

There has been much discussion as to the accurate knowledge of the discovery of placenta praevia, but there seems to be little doubt that Paul Portal, in 1685, was about a hundred years in advance of other obstetricians, and was the first not only to diagnose the condition, but to be aware of its importance and dangers. He mentions in his *Pratique des Accouchements* six cases of uterine haemorrhage from the os uteri. Although treatment does not come within the scope of this communication, it is of interest to note that Portal opened the cervix and delivered. Needless to say, he had many fatal cases. Among others from whose work a knowledge has been gradually evolved are Levret and Rigby, while De Graaf, in his *De Mulierum Organis* in the seventeenth century, says, "The site of the placenta in the uterus has been described by various writers in various situations." Evidently many of these obstetricians knew that the placenta could be attached to places other than the fundus, but no practical inference was deduced. This applies particularly to Mauriceau, who punctured the membranes and left the case to Nature for the first time. Puzos did likewise. Rigby of Notts, already mentioned, gives a very definite differential diagnosis. In fact, to Rigby must be assigned the honour of being the first to suggest a nomenclature and to make differential diagnosis between accidental and unavoidable haemorrhage, even though earlier he seemed to think that sometimes the haemorrhage arose from the vagina. Among other writers who must be mentioned in connexion with the historical aspect of the subject the names of Giffard, Roederer, and, last but not least, Smellie, cannot be omitted.

ETIOLOGY.

The most valuable factor in considering etiology is to determine if the knowledge will assist in diagnosis or prevention. The following theories must be mentioned.

1. The basal implantation theory. That the ovum after fertilization is inserted in the lower uterine segment. The placenta is basal and the clinical result is a central placenta praevia.

2. The capsularis implantation theory. That the placenta is developed in connexion with the decidua capsularis as well as with the decidua basalis. This variety determines a lateral or partial placenta.

3. Defective vascularity of the decidua may make it necessary for the placenta to spread over a large area for nourishment.

4. Inflammatory or atrophic changes may be explained in a similar manner.

5. The placenta membranacea may invade the lower segment because of its size.

These are the theories which are really worth considering, and they bear out the one great theory that there is some fault in the endometrium—a true endometritis or else a hyperplastic condition, and that this may account for the abnormality. We have several times in our practice curetted the uterus two months after the occurrence of placenta praevia and have obtained the above findings. Following the growth of healthy endometrium confinements have been normal. In other words, in the basal theory the ovum seeks healthy endometrium; in the capsularis theory the ovum must spread. There is no need to explain further the other possibilities. While we are not at all wholesale advocates of the curette, we believe it to be entirely indicated two months after a placenta praevia

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labour when the uterus has regained its pre-pregnancy tone, and that by so doing placenta praevia in future pregnancies will be avoided.

THE DANGERS OF PLACENTA PRAEVIA.

These, according to world statistics, are great for the mother and very great for the child. The mother may die from collapse following on haemorrhage, from which, if she recovers, she is so desanguinated that sepsis of a fatal nature may occur. Sepsis may also occur because of the low position of the placental sinuses. It is scarcely necessary to mention that sequelae such as menorrhagia, tendency to abort, and sterility are numerous. In addition, rupture of the cervix because of its sodden condition is said to be common.

The foetal mortality is enormous. Prematurity with a 50 per cent. death rate in the first month is the rule, and this fact must be carefully borne in mind when dealing with diagnosis with a view to treatment. Death during its passage through the birth canal is common for the infant because of interference with its oxygen supply through the placenta, or else from prolapse of the cord.

The possibility of the occurrence of placenta praevia is made very evident when it is stated that in a search of the records of the Rotunda Hospital it was found that there were 326 cases among 60,130 deliveries—that is, an incidence of 1 in 183. This incidence makes very apparent the necessity for knowledge of the subject by every general practitioner. Among these cases there were 19 deaths, a death incidence of 1 in 17. This mortality rate is far too high, and with improved technique in diagnosis and treatment I am able to report a series of 55 consecutive cases since the commencement of my Mastership without mortality. Most of the babies were premature and only 12 were born alive; 2 died before leaving the hospital, so that the prognosis for the infant is extremely bad. These statistics show clearly the necessity for deep thought when deciding on treatment of a given case.

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS.

The occurrence of placenta praevia may be suspected in pregnancy by the history of haemorrhages at various times. A perusal of the case sheets of the hospital reveals in many instances a history of haemorrhage occurring at intervals varying from the fourth month onwards. This point may be of value, for placenta praevia may be suspected, and the patient should be kept at rest, when it may be found possible to carry her on in her pregnancy until the child is well viable.

A history of previous abortions or miscarriages is sometimes elicited, but this history has been obtained so seldom that it has but slight, if any, significance. It has been suggested that, as the patient is usually multiparous, something might be elicited from the previous labours; no such facts could be made out. On the contrary, with the exception of abortions, the previous labours had, as a rule, been without incident. Repeat toxæmias are common; placenta praevia seldom occurs more than once in a woman's life. We have little or nothing to warn us of the possibility of placenta praevia. In its silence lies danger. How, then, can we diagnose the condition? The first symptom to which our attention is drawn is fresh haemorrhage accompanied by clots. This is a most important point in diagnosis; the bleeding is extremely insidious in its onset: it may occur in sleep; it may happen while the patient is sitting talking to her friends; it may be slight and may recur, or the first haemorrhage may be so severe as to cause marked constitutional symptoms, even to the extent of a fatal issue. We have met with patients whose pulse was 80 and strong one moment, and who soon after were pulseless. The bleedings are entirely unaccompanied by pain. This severe type speaks for itself and tells us the diagnosis; the patient who has recurrent attacks of slight haemorrhage is more difficult, but her case must be diagnosed as soon as possible, for a slight first haemorrhage does not mean that the next will not kill her. In fact, generally speaking, definite diagnosis is essential; a "wait and see" policy may mean a fatal result. The infant is usually premature to some extent. A study of the records revealed the fact that there was no special week more favoured than another. At any period from twenty-eight to forty weeks the haemorrhage may commence.

Following the haemorrhage, two pints of submammary saline are given under the breasts. As this takes place during the diagnosis it must be mentioned here, even though it is a part (and a most important part) of the treatment. All practitioners should carry in their maternity bag apparatus for giving submammary saline; it is the most practical method of making up for the blood lost—in the hands of the ordinary general practitioner—and it is entirely effective. Since I have adopted this prophylactic saline method at the Rotunda I have not lost a single case. People may speak of blood transfusion and venous medication, but in the emergency practice of the general practitioner a combination is necessary which is simple, safe, and effective. Once the saline is started, its administration should, if possible, be left to an assistant. At the Rotunda the saline is prepared as follows: One pint of water is boiled with two teaspoonfuls of salt; this is kept in stock solution. When required one pint of boiling water is added; this gives the correct strength and approximately the correct temperature (about 100° F.). In practice the proprietary solids of salt may be used. The abdomen is examined and the following facts are found: (1) that the uterus is soft and painless; (2) that the presenting part is high and unfixed, and gives the definite impression that it is sitting on something; (3) a uterine souffle is heard in the region of the hypogastrium. Some authorities have suggested that the diagnosis is now made: painless bleeding, prematurity, soft painless uterus, high presenting part, uterine souffle, clotted blood. We do not subscribe to this dictum. These cardinal facts suggest the abnormality; they do not make the diagnosis definite. We hold that the only way to make a definite diagnosis is to examine the patient by the vagina. Before making this examination the doctor should have decided on his next step, for he can at any rate have made a provisional diagnosis; the vaginal examination may cause haemorrhage, and it may be necessary to treat the case immediately the vaginal examination is concluded. In placenta praevia, more than in any other condition, must a vaginal examination be made under extreme aseptic precautions. Sepsis is more than possible, but the danger of missing the diagnosis without vaginal examination is greater than the danger of sepsis. If the cervix is closed, the low implantation may be suspected by a boggy mass in one or all of the fornices. If the os is open, the placenta itself is felt. It is indeed simple to diagnose the placenta; we advise our students to familiarize themselves with the touch of a normal placenta, when the diagnosis of a praevia is simple.

An examination of the urine should be made in all instances; it will probably be found to be normal. Toxaemia is seldom an accompaniment of placenta praevia, although as an exceptional circumstance it may be so. This exception must be specially stressed; when present, it is most common in the primigravida, and the case will be a typical placenta praevia with toxæmic symptoms.

Differential Diagnosis.

There are many differential points in diagnosis when a woman bleeds in the last three months of pregnancy:

1. Accidental haemorrhage.
2. Excessive show.
3. Varicose veins in some part of the tract—for example, vulva, vagina, cervix.
4. Haemorrhoids.
5. Carcinoma of the cervix.
6. Polypus.
7. Erosion of the cervix.

In addition it may be necessary, on examining the abdomen and finding the "high head," to diagnose from: disproportion; and, on vaginal examination, from hydrocephalus, anencephalus, vasa praevia, and cervical varix.

Most of these are soon cleared up. An excessive show may always be confused with any variety of ante-partum haemorrhage; its diagnosis is made by the speedy cessation of the haemorrhage, accompanied by the absence of physical signs of placenta praevia. Varicose veins of the vulva or vagina will readily be seen; the same applies to the bleeding from haemorrhoids. Occasionally an erosion of the cervix or a polypus may bring about symptoms suggestive of placenta praevia, but the erosion and polypus are

visible through a speculum. Carcinoma of the cervix will be accompanied by history and physical signs. Occasionally one meets in a primigravida a condition of "high head" which is suggestive of disproportion. The commencement of the cardinal symptoms of placenta praevia suggests this abnormality, but a careful examination must be made to confirm the diagnosis. We have had a case lately at the Rotunda where the placenta acted as a mechanical cause of delay in labour, and this was perfectly evident at the Caesarean section operation which was indicated later. It is only necessary to draw attention to this differential point in diagnosis, and to remember that occasionally the two may occur together.

Hydrocephalus must be mentioned, for the enormously separated fontanelles may give the impression of a cervix with placenta protruding through. In addition the height of the head when felt by the abdomen may give a wrong impression. Anencephalus may simulate anything. Vasa praevia may suggest placenta praevia, but it is unimportant.

The condition which is most frequently mistaken for placenta praevia is accidental haemorrhage, and since the treatment for each of these conditions is very different, and as the treatment for the one is entirely unsuitable for the other, the importance of making a correct diagnosis is obvious. It is well at this stage to consider the various factors in making a diagnosis between the two.

(a) *Parity.* Placenta praevia is more common in the multipara than in the primigravida, but it is found in the primigravida. Accidental haemorrhage is always found in the multiparous patient.

(b) *Toxaemic symptoms* are nearly always present in accidental haemorrhage, and they are usually absent in placenta praevia. In spite of this assertion it is necessary to give a warning: accidental haemorrhage may occur without toxæmia, and severe toxæmia accompanied by placenta praevia may arise. During the past year a patient who was being carefully observed during her pregnancy developed albuminuria near the end. She was admitted to hospital, and efforts were made to overcome the toxæmia. The albuminuria never disappeared, and a week before term all symptoms of placenta praevia were present. We were dealing with a hugely fat primiparous patient with albuminuria, a one-finger cervix, and central placenta praevia. For this rare combination of circumstances there was only one treatment—Caesarean section. In this exceptional case the diagnosis was difficult. It was made without vaginal examination, and confirmed by a vaginal examination immediately before operation.

(c) *Period of pregnancy.* Accidental haemorrhage varies. Placenta praevia more commonly occurs as a premature birth.

(d) *Pains* are a usual accompaniment of accidental haemorrhage; they are always absent in placenta praevia.

(e) *The abdomen* is tense, and the presenting part is fixed in accidental haemorrhage; while in placenta praevia there is a flaccid abdomen with malpresentation or non-fixation of the presenting part.

(f) *The foetus* is dead in the majority of cases of accidental haemorrhage; it is alive at the commencement of labour in placenta praevia.

(g) *The haemorrhage* which occurs in accidental haemorrhage is continuous and is blood-stained serum; it has been squeezed out of the uterus like the juice from an orange. The haemorrhage in placenta praevia is fresh clotted blood, which may come in gushes and varies in amount.

Finally, in discussing differential diagnosis we must refer to a type of case occasionally encountered and already mentioned. A woman who is eight months pregnant suddenly pours blood, becomes collapsed, with imperceptible pulse and other accompanying symptoms. Does one waste time in diagnosis? No, for it is nearly certain. She is immediately given treatment for collapse, while pledgets of cotton-wool are boiled in a saucepan; these are used to stop the haemorrhage, and the absolute diagnosis is made later when the collapse symptoms have disappeared, and therefore when the patient is ready for active treatment.

PROGNOSIS AND DANGERS.

The prognosis where a case has been correctly diagnosed and treated is excellent; in fact, we feel we may borrow an apt aphorism on another subject, and say "our patient should not die from placenta praevia."

There are dangers, both immediate and remote. Death from collapse following haemorrhage is possible. Death from sepsis from manipulations, low implantation, and diminished vitality must be feared. Anaemia may last for some time, and the patient should be allowed to recover

thoroughly from a placenta praevia confinement before embarking on another pregnancy. Contrary to the experience of others, neither adherent placenta nor post-partum haemorrhage has been found common with our patients.

To our mind, the prognosis depends on diagnostic ability with choice and technique of treatment. Treatment does not come within the scope of this communication.

SUMMARY.

1. It is difficult to separate diagnosis from treatment.
2. Nomenclature, both with regard to period of pregnancy and situation of placenta, is considered.
3. Rigby of Notts should be given priority in making a diagnosis between placenta praevia and accidental haemorrhage.
4. A pathological condition of the endometrium is a fruitful cause of placenta praevia. Curettage should be done before the next pregnancy.
5. The incidence of placenta praevia in 60,000 deliveries was 1 in 183, while the mortality was 1 in 17. There has been no mortality at the Rotunda Hospital in the last 55 cases.
6. Although there are others, accidental haemorrhage is the important condition to diagnose from placenta praevia. The methods of doing so are given.
7. Prophylactic submammary saline is an essential part of treatment during the diagnosis.
8. Toxaemia is not a usual accompaniment of placenta praevia; an exceptional case where it occurred is mentioned.

We shall conclude by saying that the whole paper might have been summed up in a few words as follows: That the symptoms and diagnosis of placenta praevia might be written down—an absolutely painless clotted haemorrhage, insidious in nature, some time in the last three months of pregnancy. It seemed necessary, however, to refer to some salient points in order to remind ourselves and the world that women may be saved by a careful and exhaustive diagnosis which leads to correct treatment and a satisfactory result.

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THE TREATMENT OF PLACENTA PRAEVIA.*

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In considering the treatment of placenta praevia we should immediately begin on common ground regarding the definition of this condition, as in well-known textbooks describing the three forms—central, lateral, and marginal, according to the position of the placenta in relation to the lower uterine segment—there is a difference in the nomenclature of the marginal and lateral varieties: the position of the placenta described by Fothergill as marginal is termed lateral by Fairbairn.

I have always used the term "lateral" for the condition in which the os is approached or partly covered by the placenta, and "marginal" when only the margin of the placenta extends into the lower uterine segment. It is often difficult when there is a history of slight haemorrhage at, say, the sixth or seventh month, followed by perhaps another slight haemorrhage within several weeks, to decide whether to temporize in the hope that the child may have a favourable chance, or whether to empty the uterus

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