

PLACENTA PREVIA*

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PLACENTA previa is not a frequent complication of pregnancy. Statistics from obstetrical clinics indicate an incidence far in excess of the actual frequency. In our own service, in a series of 7981 cases studied by P. H. Smith, placenta previa was encountered 60 times, or 0.75 per cent, or once in 133 cases. The incidence of the Chicago Lying-In Hospital as reported by Davis was 9.02 per 1000. Irving gives the incidence of the Boston Lying-In Hospital as one in 92. In the Cook County Hospital of Chicago the frequency was one in 352. The actual incidence has been estimated at from 1 in 500 to 1 in 1000 and a figure somewhere between these two probably would indicate its frequency as accurately as is possible. The frequency in obstetric clinics is far greater than in the hands of the practitioner because women who bleed severely are sent, if possible, to a hospital. It is more frequent in multiparae than in primiparas (64 to 35, Davis; 61 to 39, Marr; 8 to 1, Irving; 41 to 19, Evanston Hospital).

The first evidence of the presence of placenta previa is painless hemorrhage which occurs without relation to any trauma. It is usually in the last two months. It may occur while asleep, the woman awaking to find blood in the bed. The first bleeding may be small in amount and usually is not enough to be dangerous. It is always followed by later bleeding, the subsequent hemorrhages increasing in amount. The progressive development of the lower uterine segment separates an increasing area of the uterine surface from the placenta, thus increasing the area from which blood may be lost. If labor begins, efface-

ment and dilatation of the cervix also increases the area from which bleeding may occur. The occurrence of painless bleeding toward the end of pregnancy in a woman otherwise perfectly well raises at once the presumption of placenta previa. As the primary purpose of this paper is the discussion of the management of placenta previa we will proceed at once to its consideration.

In general, it may be stated definitely that the most important thing in the management of placenta previa is the conservation of blood. Death rarely occurs from the first loss of blood but later bleedings become more and more severe. The first loss of blood may, if necessary, be remedied by transfusion but continued hemorrhage will be fatal. The earlier in the progress of the case the bleeding is brought under control the greater the chance of the mother. The conduct of the case must be such that trauma to the cervix and lower uterine segment is avoided, as tears of the cervix may involve a portion of the placental site and greatly increase the loss of blood. Asepsis is essential as women with placenta previa are often anemic and therefore far less resistant to infection. Upon the admission to the hospital of a patient with placenta previa, even though immediate transfusion may not be needed, donors should be secured, and necessary matching and cross-matching completed, in order that blood may be available immediately at any time.

It is better not to have a hard and fast rule for treatment. Management should be chosen according to the conditions presented by the individual patient. In

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choosing the method of management the mother's interests are paramount, the consideration given the child varying with the length of the pregnancy, the type of placenta previa, the degree of dilatation of the cervix and the amount of blood loss. In a considerable proportion of cases the child is premature. In 16 cases of the 60 studied in our service fetal heart tones were absent on admission to the hospital or disappeared before delivery. It is desirable to save a child at or near term which is alive and apparently in good condition but the mother should never be subjected to additional risk to save a dead or dying infant.

Placenta previa may be divided into central or total placenta previa, or those cases in which the os is entirely covered by placenta, lateral or partial placenta previa, only a part of the os being covered, and marginal placenta previa, the edge of the placenta being felt beside the os. It is important to know which type is present before deciding upon the treatment. Many years ago Jaggard stated the principle that there is no conservative treatment of placenta previa. Further hemorrhage is inevitable, and, as blood is present in the vagina, the risk of infection cannot be ignored. Bacteria are always present in the vagina and cervix and in some women organisms of a virulent character are found. The presence of infection increases the danger of any form of interference. This rule has been modified by some obstetricians to the extent that, provided hemorrhage has not been severe, the woman in good condition, the child alive but of doubtful viability, observation may be continued in the hope that the child may develop sufficiently before intervention so that its chance of life may be greater. If this is done the patient should always be placed in a hospital with everything in readiness for immediate action. The patient and the physician must accept a definite risk for severe hemorrhage may occur suddenly at any time and may be great enough to compromise seriously the chances of a

successful outcome. If viability is doubtful, the likelihood of gaining sufficient time to alter materially the fetal prognosis is not great. This plan should be adopted rarely and only after careful consideration.

Methods of Treatment. Prior to determining the mode of attack a careful and gentle vaginal examination should be made, under all aseptic precautions, to determine the type of placenta previa, the degree of dilation and the presentation. All preparations for immediate intervention should have been made before this is done. Although there may be no bleeding at the time the examination is done a profuse hemorrhage may follow. Rectal examination may also cause hemorrhage. Examination should not be done in the home unless the patient is seen in a place in which hospitalization is impossible. Preparation should be made for such interference as is contemplated or which is possible before examination. Early cases of placenta previa usually can be moved. The conditions found at the examination will influence the choice of a method of management. If the initial hemorrhage has been severe, or if a number of bleedings have caused an anemia, transfusion at once will be of great value. The initiation of treatment should not be delayed after transfusion as further blood loss is inevitable. A temporary benefit from transfusion is of little use to the patient if further loss of blood is allowed to take place. In the absence of a donor glucose solution may be used and a solution of gum acacia intravenously may be of great value. While these solutions are of great help in restoring the volume of circulating fluid, particularly the gum acacia solution because it tends to remain in the vascular system longer than glucose solutions, none of them supply the hemoglobin which is imperatively needed and without a sufficient supply of which life cannot continue. Transfusion is the only way in which this vital need may be supplied. It is best, if the woman is seen when only a slight hemorrhage has occurred, to prevent further severe blood loss.

Rupture of the Bag of Waters. In cases of marginal placenta previa and in some cases of lateral placenta previa this simple maneuver controls bleeding. It is used best when a dilatation of 3 or 4 mc. is present. It allows the head to sink into the lower uterine segment, compressing the placenta and thus controlling the bleeding. The rupture of the amniotic sac tends to lessen further separation of the placenta from the uterine wall. No further interference may be needed and labor may complete itself spontaneously. In cases to which it is adapted this simple procedure is very valuable. It can be done quickly and without the need of an anesthetic. The rupture of the membranes usually stimulates contractions which drive the head downward against the placenta and hasten labor. If pains do not begin or are weak pituitrin may be administered in doses of 1 to 3 minims intramuscularly. Care must be taken if pituitrin is used as a too active response may cause the head to be driven too forcibly against the cervix causing a too rapid dilatation. This may result in laceration with severe bleeding.

Packing. This is the least efficient method for the control of hemorrhage, and, in addition, it carries with it a distinct risk of infection, especially if any other method of treatment follows it. It cannot be recommended as a method for use in the hospital and in our own service we have never used it. A pack rarely completely controls bleeding. It is assumed that a pack placed firmly against the cervix will compress the placenta against the head but one cannot depend upon this even though a tight binder is used. Blood may collect in the lower part of the uterus above the pack. In a locality in which hospitalization is quite impossible, and anesthesia and sufficient help for the application of some one of the other methods of treatment are also not available, a pack may be employed in default of something better.

Infection may follow the use of a pack. When applied at home it will rarely be properly inserted. To pack at all efficiently,

the cervix should be exposed. The pack should fill the cervix and lower uterine segment tightly as well as the vagina. The gauze should contain some weak antiseptic to prevent, as far as possible, the development of infection from bacteria in the vagina and cervix. Gauze impregnated with a $\frac{1}{2}$ per cent solution of cresol serves very well. If the pack is successful in controlling the bleeding it may be left until dilatation is complete, after which it is removed and delivery completed by version and extraction. The defects of this form of treatment are (1) the uncertainty of control of hemorrhage, (2) the difficulty of knowing exactly when dilatation is complete, and (3) the likelihood of infection.

Metreuryisis. In many cases the insertion of a bag is a very satisfactory method. It is particularly useful in a multipara with a marginal or lateral placenta previa and with a dilatation of 3 or 4 cm. although a smaller dilatation does not preclude its use. The membranes should be ruptured and the bag placed intraovularly. Intraovular insertion is far more efficient than insertion outside the membranes. A weight of one pound is attached by a tape to the bag, the tape passing over a pulley at the foot of the bed. A bag of proper size and properly placed will control bleeding as long as it remains within the cervix. A woman upon whom metreuryisis has been performed must be kept under constant observation as the bag must be removed from the birth canal as soon as it escapes from the cervix. This can be readily ascertained by gentle rectal examination. If the bag escapes from the cervix and remains in the birth canal blood may accumulate above it, a considerable quantity being retained. Recurrence of bleeding demands immediate further intervention. Complete dilatation following metreuryisis may be followed by spontaneous delivery which is the most favorable outcome for the child and spares the mother further intervention.

Metreuryisis is ranked among the conservative forms of therapy. It gives excel-

lent results for the mother if the bag is put in early before serious blood loss has taken place and provided that the mother is watched constantly, to forestall further blood loss after the expulsion of the bag from the cervix. Spontaneous delivery is most favorable both for mother and child but in some instances cannot be awaited. After the expulsion of the bag, if dilatation is not complete Braxton Hicks or podalic version may be needed to keep bleeding under control. No attempt to complete the delivery should be made until dilatation is complete. If version is required it must not be followed by an attempt to complete delivery until dilatation is complete. It is best to allow the breech to be expelled by the forces of labor and to intervene to complete the labor only after this has happened. As the placenta occupies the lower uterine segment and cervix, these structures contain the large blood sinuses which always lie under the placenta. An attempt to complete delivery before dilatation is complete is likely to cause lacerations of the cervix and lower uterine segment with consequent severe bleeding. If after the removal of the bag, the head settles into the lower uterine segment and cervix and controls bleeding, labor must be permitted to continue until dilation is complete. The bag itself, as Irving points out, is relatively without danger. It is the method of delivery which influences maternal and fetal mortality.

Braxton Hicks version was suggested first by Hicks in 1864. A dilatation sufficient to permit the introduction of two fingers is essential. In many cases it will be a difficult procedure, especially for the physician whose experience in operative obstetrics is limited. One foot is grasped and brought down through the cervix, the buttocks and the other thigh of the child tamponing the lower uterine segment and compressing the placenta. It is an exceedingly effective method of controlling bleeding. It is essential that no attempt at delivery be made after the version. Nothing more should be done except, if necessary, to apply some

traction to the leg in order to compress the placenta more effectively. Fetal mortality is high. Maternal results are excellent provided delivery is not attempted until dilatation is complete.

Podalic Version. Podalic version may be used in patients with marginal or lateral placenta previa who are admitted to the hospital with sufficient dilatation to permit the entrance of the whole hand into the uterus, or when metruerysis has been done and sufficient dilatation has been secured to allow the operation to be done. The inexperienced operator may be greatly tempted to complete the delivery after version is completed. Unless dilatation is complete at the time the version is done extraction should not be attempted. This should await the completion of dilatation and the spontaneous extrusion of the breech.

Cesarean Section. Tait in 1869 suggested cesarean section, and abdominal delivery was also recommended by Dudley in 1900. The use of cesarean section has greatly increased in this country. It is true that a larger number of infants may be born alive when cesarean section is used widely but this must not obscure the fact that many of these babies are premature. Cesarean section, to yield reasonable results for the mother, must be done while the patient is still surgically clean. Abdominal delivery after packing, the introduction of a bag or repeated examination, is not safe. Many cases of placenta previa occur in communities in which no trained obstetrician is available and the local surgeon is asked to lend his aid. As he is usually quite unfamiliar with operative obstetrics but feels able to perform a laparotomy, cesarean section is usually chosen. A lack of information as to the relative risks of the cesarean section, done as an elective procedure and when it is performed after more or less extensive interference from below, plays a large part in the continuance of the far too large maternal mortality after cesarean section. To obtain satisfactory results it should be done as a primary procedure, not following some form of interference from below.

For many years the classical operation was done exclusively. In late years the low cervical section has displaced it in some clinics. In our own service for some time after adopting the low cervical operation as the routine procedure we continued to do classical sections when a cesarean was chosen as the treatment of placenta previa. This was because we feared that an incision in the lower uterine segment might cause further serious bleeding by reason of invasion of the placental site. Experience has shown that this is not the case and the low cervical operation is used at present in nearly all cases in which abdominal delivery is used. It may seem illogical that an incision made from above does not increase the risk, while dilatation or cutting operations, such as vaginal hysterotomy, are gravely dangerous. The chief reason for this difference is that, while incision from below or lacerations following attempts at dilatation of the cervix may extend upward far enough to preclude effective management from below, the incision in the lower uterine segment made through the laparotomy wound is throughout its extent under the eye and bleeding from its edges may be effectively checked. Bleeding sinuses on the posterior wall may be closed by suture. Extension into inaccessible areas does not occur.

Cesarean section should be chosen in total or central placenta previa and in patients with lateral or marginal previa in which there is little or no dilatation. In the minority of cases in which it occurs in primipara it offers the quickest and often the least traumatic method of delivery. Unless the hazards of delivery from below seem great it is preferred if the baby is dead or non-viable.

If bleeding continues after the delivery of the child and the removal of the placenta, the uterus can be packed, the end of the pack being passed through the cervix into the vagina. It may be removed from eight to twenty-four hours later.

If infection is present, a cesarean section should be followed by amputation of the

uterus. This greatly decreases the danger of sepsis after operation. This procedure should be chosen if the mother is infected or if it is seriously feared that infection is present. The prognosis is much better than when an infected or potentially infected uterus remains. When infection is feared, delivery from below is usually wiser but, in case the preservation of the child is desired greatly, and the condition of the child is such that it appears probable that it may be delivered alive and with a fair prospect of continued life, the Porro cesarean may be done.

Vaginal Cesarean Section or Vaginal Hysterotomy. This procedure cannot be recommended. For a time it received the recommendation of some German writers but has not been accepted widely in this country. In view of the conditions found in placenta previa it does not seem a logical method of attack. The incision invades the subplacental area and the operator can never be quite certain that an upward extension of the incision may not occur. This may cause the cervical wound to reach an inaccessible area. We have never used this method of treatment and believe that it is a dangerous procedure.

Willett's Forceps. This mode of management is carried out by grasping the scalp, in a cephalic presentation, with an instrument resembling a volsellum, and making traction downward in order to cause the head to compress the placenta. It should be confined to dead infants although a few cases have been reported of the birth of living infants. We have had no experience with it as it has not appeared to us to be an efficient procedure.

Accouchement Forcé and Manual Dilatation. Accouchement forcé is left to the last and should be mentioned only to be condemned. In view of the condition from which the bleeding comes it is apparent that it is a completely illogical method of treatment. In our service it has not been used. It belongs to the dark ages of obstetrics and should be regarded as a procedure which has no place in modern practice.

Manual dilatation is open to the same criticism. Manual dilatation usually means completion of dilatation after the cervix has already reached a diameter of 5 or 6 cm. Manual dilatation varies only in degree from the more traumatic accouchement. Any attempt to complete dilatation by operative intervention is an invitation to disaster. After delivery of the child, the placenta should be removed manually unless it is expelled promptly. This should be done gently in order to avoid any wounding of the placental site.

After delivery is completed, if this is accomplished through the birth canal, and if bleeding continues, the uterus should be packed. In any case in which doubt exists as to the ability of the uterus to control postpartum bleeding, packing should be used. In these cases, as in others, it must be remembered that an efficient pack ex-

tends from the fundus of the uterus to the vulva. A pack which occupies the lower part of the uterus only, or leaves a part of the uterine cavity unoccupied, may allow blood to accumulate above it.

CONCLUSIONS

The successful management of placenta previa depends, (1) upon its early recognition; (2) upon a prompt and proper choice of procedure, remembering that the saving of blood is the thing of outstanding importance, and (3) painstaking asepsis. In well managed obstetric clinics the maternal mortality may be kept to 5 per cent. A considerable fetal mortality cannot be avoided. While this should be kept as low as possible, the safety of the mother should not be jeopardized in favor of a premature infant whose chance of survival at best is questionable.

