

## MANAGEMENT OF ABRUPTIO PLACENTAE

## REVIEW OF 65 CASES

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**A**BRUPTIO or ablatio placentae is the partial or complete detachment of the placenta from its normal site in the uterus; its separation is premature because it occurs prior to the third stage of labor. Hemorrhage is accidental, in contrast with the unavoidable bleeding of placenta previa. Differential diagnosis must be made from premature labor, rupture of the uterus and placenta previa; though easy as a rule, it must be borne in mind that in cases of low implantation of the placenta, separation may occur with the onset of labor, as in marginal previa, so that differentiation may be difficult or impossible.

Abruptio is not unusual, and occurs more frequently than placenta previa, if we include all those cases of loosening of the lower pole of a low placenta, in which slight bleeding is noted before the onset of labor and constant trickling occurs throughout; after delivery well formed clots are found attached to the placenta. More complete detachment is uncommon, certainly less frequent than placenta previa. Its frequency is of scant importance however. It is important to remember that it may occur in any primipara or multipara of any age.

Since there is a general trend to interfere surgically in the serious complications of obstetrics, the whole gamut of vaginal interference has been run; simple puncture of the membranes, cervical and vaginal packs, bags, forcible dilatation or incision of the cervix, version and extraction, forceps and craniotomy have all been recommended. As in placenta previa, there is a steadily increasing tendency to treat severe cases by abdominal section.

Some are unalterably opposed to any other form of treatment, while others, with equally large experience, find cesarean section disappointing. In fact the advice of those who have studied this problem is often puzzling and contradictory.

Interest in this serious complication of pregnancy and labor is growing, though contributions to the literature are still relatively infrequent, and more concerned with investigation into its causes than with its practical management. Perhaps this is as it should be, for only through knowledge of its etiology can a positive program be evolved. In the meantime however, clinical factors must be studied, and abruptio placentae treated on the basis of collective experience. It is no different in eclampsia, where, though we are still ignorant of its etiology, definite reduction of mortality has followed critical appraisal of end results. Up to now treatment has largely been based upon individual experience, necessarily limited and influenced by trends toward conservatism or operative interference in the general field of obstetrics. We agree on the management of the less severe cases which we are confident will end in spontaneous delivery. Nothing more is settled. Judged by results, making all due allowances for its intrinsic difficulties, the problem of abruptio placentae is still unsolved.

With increasing interest in our own maternal mortality we have reviewed our experience in 19,750 deliveries at St. Catherine's Hospital, Brooklyn, from January 1917 to October 1936. There were 65 cases of abruptio placentae, an incidence of 1 in 300. Eight cases filed as abruptio placentae were rejected as separa-

tion of a low placenta. Only those cases in which diagnosis was absolutely certain are included. Brief tabulation follows:

ABRUPTIO PLACENTAE 65 CASES

Multiparae 40. Primiparae 25	
Period of Gestation	
Term.....	29
Eighth month.....	11
Seventh month.....	25
Presentation	
Vertex.....	49*
Breech.....	15
Face.....	1
Transverse.....	1
Etiology or Associated Condition	
Preeclampsia.....	2
Low reserve kidney.....	9
Chronic nephritis.....	18
Trauma (coitus 2, fall 1).....	3
Unknown.....	33
Method of Delivery	
Spontaneous delivery.....	24*
Bags.....	9
Manual dilatation.....	2
Incision of cervix.....	1
Version and extraction.....	4
Breech extraction.....	8
Forceps.....	4
Caesarean (1 vaginal).....	14
Mortality	
Fetal.....	46 or 70 per cent
Maternal.....	5 or 7.7 per cent

\* One case twins.

**ETIOLOGY**

Although its etiology is unknown, the cause will probably be found in trauma, vascular changes in the uteroplacental junction or toxemia, yet all these have been denied. Although presence of a specific toxin has been assumed as in eclampsia, none has been found. Both conditions may occur with equal suddenness, in both operative procedures find equally bad risks, and both, strictly speaking, are not preventable. Possibly trauma may be insufficient unless some other factor is present. Chronic nephritis, so commonly observed in many series of cases, is of no importance in others. In our series there were 18 well marked cases of chronic nephritis, 3 of which developed anuria and one convulsions, 9 women with low reserve kidney and 2 with preeclampsia. Two women, both nephritics, had abruptio in two successive pregnancies. Furthermore, 3 women in this series with no signs of kidney involvement showed definite ne-

phritis in subsequent pregnancies within two years. This would seem to indicate the incidence of a kidney coefficient in at least 21 cases, or 34 per cent, without including 9 cases of low reserve kidney. Whether it is an actual causative factor or simply an associated disease makes no difference clinically. The occurrence of vaginal bleeding in the last trimester, with or without pain, in a woman known to have nephritis or hypertension is of great significance in the diagnosis of abruptio placentae. Accidents during version, sudden collapse of a polyhydramnion or drag on a short cord, often mentioned by others, were not seen in our series. The history of trauma in 3 cases was clear enough.

**SYMPTOMS AND DIAGNOSIS**

Frank bleeding was present in 60 cases, 35 of which had bright red profuse hemorrhage; bleeding was concealed in only 5 cases. There were 26 severe cases, including 19 patients in profound shock and 7 others with severe toxic symptoms. In 49 patients pain was a prominent symptom.

Bleeding may or may not be severe when the lower pole of the placenta separates; hemorrhage is frank, blood rapidly detaching the membranes and escaping from the cervix. The placenta may separate centrally, or at its periphery laterally or near the upper pole, blood stripping the membranes and occasionally bursting into the amniotic sac. In uteroplacental apoplexy or the Couvelaire uterus, blood makes its way widely into the muscle of the uterus appearing as ecchymases beneath the serosa, which may split, allowing blood to seep into the peritoneal cavity. It is clear that in all cases blood is concealed at first, if only for a short time, and so must give rise to symptoms before it appears.

During pregnancy slight bleedings may occur. Although these are always worthy of note, and in the absence of pain should be regarded as evidence of placenta previa and not separation, the placenta may show signs of old detachment or organized clot. In serious cases the onset of symptoms is always sudden, and always accompanied

by pain which may be severe. Labor usually comes on shortly, and may fortunately be active; or if uterine contractions are weak a serious situation may develop very rapidly with signs of severe hemorrhage and shock, in pallor, pulse, blood pressure, respirations, restlessness, nausea, vomiting, and even convulsions and coma. The fetal heart is lost,—classically after tumultuous fetal movements, although we have not observed this phenomenon. The fetal heart was lost before delivery in 30 of our patients; this is not a fair criterion of the severity of any case. Uterine resiliency grows less, or the uterus becomes tense and hard, tender over the area of hemorrhage; in some cases the uterus seems to increase in size, arching forward as a result of increased muscle tension as if it were in tetanic contraction. The classical ligneous uterus, observed by us in only 28 cases, is not necessary for diagnosis; the uterus may even be soft. Watching for this sign is like waiting for external bleeding, unnecessary and dangerous. Pain, nausea, rising pulse rate or even slight faintness are more often available.

#### MORTALITY

Five women, or 7.7 per cent, in our series died. Brief description of their deaths is instructive:

CASE I. Aged twenty-eight years, para VIII, vertex at term, was admitted in 1924 in severe shock, pain, a ligneous uterus, and history of profuse vaginal bleeding four hours before. She had repeated clyses and version; a leg was drawn through the cervix, and she delivered herself spontaneously of a stillborn fetus in a half hour; the placenta which followed immediately was small with numerous white infarcts; the vagina was packed for hemorrhage. Death two hours later was from shock.

CASE II. Aged forty-five years, para IX, vertex, was admitted in 1930, two hours after a severe hemorrhage which occurred immediately after a fall downstairs; in profound shock, no fetal heart heard and a ligneous uterus. She died undelivered two hours after insertion of a Voorhees bag. Necropsy showed a seven and one-half months pregnant uterus of normal

appearance, which contained a dead fetus and a completely detached placenta covered with heavy clots.

CASE III. Aged forty-two years, para XI, breech, was admitted in 1933 in shock, no fetal heart and a ligneous uterus, with a history of pain and profuse vaginal bleeding. She had had nine normal spontaneous deliveries, the tenth terminating in a seven months stillbirth due to abruptio placentae and chronic nephritis. The membranes were ruptured, a leg pulled down and three doses of pituitrin given at fifteen minute intervals. Delivery of a stillborn fetus occurred within an hour and a half. The placenta, covered with clots, followed immediately. Bleeding continued and the uterus and vagina were packed. Death followed two hours later without transfusion as no donor could be obtained.

CASE IV. Aged twenty-five years, para 1, vertex, at term, was admitted in 1932 with a history of hypertension for several years. She had been studied frequently and hypertension was said to be essential and not due to nephritis. She presented toxic symptoms, double mitral lesion, blood pressure 240/140, albuminuria, N.P.N. 35 and creatinin 2.4. Shortly after admission she had a profuse hemorrhage, the fetal heart disappeared, and symptoms of severe shock developed rapidly. Morphine and intravenous glucose were given. Cesarean section was preceded and followed by a transfusion. The uterine cavity contained large clots, a completely detached placenta and a dead fetus. The wall of the uterus appeared normal, but hysterectomy was done because bleeding continued. Death occurred three hours later, with poor pulse, weak heart sounds and cyanosis.

CASE V. Aged thirty-seven years, para II, breech, seven and one-half months, was admitted in 1935 with toxic symptoms and edema of hands, face and feet for three weeks prior to admission, and slight vaginal bleeding. Blood pressure was 250/150 with heavy albuminuria. The membranes were ruptured and labor began at once. Breech extraction was done after thirty-six hours; the placenta, filled with infarcts, followed at once. The patient became irrational, developed hyperpyrexia and paralysis and died of uremia three days later.

#### MANAGEMENT

There were 14 cesareans, one of them vaginal, with one maternal death and 9

dead babies; in 13 cases Couvelaire uterus was observed 6 times, but Porro section was not done and no undue postpartum bleeding followed. In one cesarean section, free blood was found in the peritoneal cavity, and a long rent in the posterior wall of the uterus, involving the muscles yet not communicating with the cavity, was closed. The Couvelaire uterus of itself is not an indication for hysterectomy which should be done only for persistent hemorrhage. Uteroplacental apoplexy can not be diagnosed, of course, without opening the abdomen, and accidental hemorrhage does predispose to postpartum bleeding, yet even this type of uterus may contract satisfactorily.

Shock is all out of proportion to the amount of blood loss, worse in cases with toxemia, and aggravated by the trauma of delivery. Transfusion may be wise before and after delivery, and on the delivery table as well. Less constant factors than the need of blood replacement undoubtedly play their part, but its importance at least is obvious. Formulation of a positive program beyond this point is difficult.

We should not look for spontaneous cure. Certain basic principles should guide the design and selection of treatment. Preparations for transfusion should begin at once, whether it may appear to be necessary or not. Treatment should never consist of less than this. Early diagnosis is paramount. Watchful waiting in the form of successive blood counts and nothing more is futile and dangerous. The time factor is important. The greater the delay in emptying the uterus, the greater the likelihood of continuing and postpartum hemorrhage. There is a broad indication for delivery, just as there is in eclampsia, where the method of delivery is no less important; yet as in eclampsia, the condition of the patient is more important, and mortality is often due to treatment.

The fetal mortality is notable, and with it comes the implication that the condition of the child should be disregarded in selecting treatment. However this is no more true in abruptio than it is in placenta

previa. Certainly if the baby is alive and viable, and delivery can not be effected speedily from below, abdominal section should be done if the patient's condition is good enough, for that is more important than the presence of a fetal heart.

#### SUMMARY

Trauma and further blood loss should be minimal in the treatment of shock. Few cases need cesarean section and certainly not those already in severe shock, nor those threatened with the anuria or uremia of chronic nephritis. If cesarean is done, it should be low and preferably under local anesthesia, not spinal or ether. Manual dilatation or incision of the cervix have no place in modern hospital treatment. The use of bags is not sound, since it is time consuming, not certain to induce labor, and increases the risk of infection. Version adds to shock and should not be practiced.

Most cases, even severe ones, properly fortified by transfusion will do best with conservative treatment: morphine grain  $\frac{1}{4}$  to  $\frac{1}{2}$ , the Beck binder and a few small doses of pituitrin. If labor makes satisfactory progress delivery should be spontaneous, or it may be terminated with low forceps. Manual removal of the placenta should not be delayed long, and the uterus must be packed if it does not contract satisfactorily with intravenous pituitrin and ergotrate.

Few cases call for more radical interference. All need close supervision and good judgment. There is a certain unavoidable mortality, no matter how abruptio is managed, yet a fatalistic attitude which can defend and justify any course of treatment, simply because mortality is high will not help the situation. Usually it is possible to differentiate between the cases, those that need cesarean section, and those that can be managed conservatively by allowing them to progress to assisted spontaneous delivery.

All my statistics, as well as these abstracts of the case histories of the deaths were prepared by Dr. Leslie H. Tisdall.