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ON THE
RELATIONS OF THE PLACENTA

TO

POSTPARTUM HEMORRHAGE.

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MR. PRESIDENT:—In *postpartum hemorrhage* the general advice of obstetrical authorities is embraced in two injunctions; secure uterine contraction, and, if the placenta is still retained, see that it is promptly delivered. Now, since it is a universally admitted fact that a tonically contracted uterus cannot bleed, it must be conceded that the former of these aphorisms is a *sine qua non*. But the second, in regard to the removal of the placenta, admits of qualifications which we would do well to study.

First, let us inquire in what way the presence of the placenta within the uterus contributes to the hemorrhage or to its continuance. It is claimed that a retained placenta may produce hemorrhage for two reasons, (1) because it offers a mechanical obstacle to perfect uterine contraction; (2) because, if partially adherent, it directly promotes the bleeding. (When there is no detachment of the placenta there can, of course, be no hemorrhage.) It will be readily seen that two physical elements must necessarily enter into all cases of *postpartum hemorrhage*. There must be imperfect uterine contraction and partial or com-

plete placental separation. As a rule, it will be found that the profuseness of the hemorrhage will be in direct ratio to the uterine inertia, and inversely proportional to the area of adherence of the placenta. That is to say, the flow of blood will be in direct proportion to the laxity of uterine fibre, and to the extent and number of ruptured vessels in the utero-placental site. If this be true, it is evident that in ordinary labor the presence of the placenta *in utero* can only promote hemorrhage in so far as it offers a mechanical obstacle to uterine contraction, whilst it really lessens it to the extent of its adherent surface. Although we are aware that this latter proposition is in direct conflict with high authority, we think it tenable on physiological and clinical grounds, and hence we are justified in concluding that the only possible good which can accrue from a speedy delivery of the after-birth in *postpartum* hemorrhage is the mere mechanical one of clearing the cavity of the womb of so much foreign material in the same manner, and for the same reason, that we would sweep out so much clotted blood, simply to get rid of it, and in order to clear the way for local styptics within the uterine cavity.

I desire to provoke a discussion of this question, because I am satisfied that there is much to be said on both sides of it, and for the reason also that most of our text books offer very loose and empirical advice on the subject, which is well calculated to mislead students and practitioners who are taught to regard the presence of the placenta in the uterus as a thing necessarily hurtful, and to be gotten away at all hazards and as speedily as possible. Entirely too much stress being laid upon the retention of the afterbirth and too little upon the fundamental fact that the placenta has, in nine cases out of ten, nothing whatever to do with the bleeding, which is rather due to absence of uterine contraction, to *inertia*. In proof of this assertion, it is only necessary to recall the fact that in ordinary labors the retention of the placenta, whether partially or wholly detached, does not produce hemorrhage. Common experience teaches us this, and so long as we are convinced that the uterus is firmly contracted upon the placental mass, we all are accustomed to feel satisfied and await with composure and confidence the advent of secondary pains, and when finally, after a rest of fifteen or twenty minutes, the placenta is thrown off, its expulsion is accompanied by no abnormal flow of blood. Yet it must be evident to any mind that if the placenta were the offending cause in these cases, every mother

would bleed nearly to death before this body could be gotten rid of in the course of nature.

We repeat that most of our obstetrical works are not sufficiently discriminating and explicit on this point; they do not explain with clearness the mechanism of the hemorrhage, and the part which the retained placenta plays in promoting it, but leave the student to infer that its retention is really the foundation of all the trouble. The practice in these cases partakes too much of a blind, routine procedure. For instance, Leishman, in his chapter on "Hemorrhage After Delivery," reminds the student in the first paragraph that "Retention of the placenta and *consequent hemorrhage* may be the result of mismanagement." Undoubtedly this is true in some instances, but upon reading a general statement like this upon the very threshold of the subject, the inexperienced practitioner, who naturally looks to his books for advice, will reason thus: if the hemorrhage is a "*consequence*" of retention of the afterbirth, and such retention the result of a palpable "*mismanagement*," then, of course, the proper course is to empty the uterus as the first step towards eradicating the mischief. And he will probably proceed to do this even in the absence of uterine contraction, a measure, which in the latter case, while accomplishing no possible good, would probably make matters worse. Still, in every event, whether there be inertia or not, the student has the same dogmatical advice to guide him, for, says this author, on the next page, "In all these cases the treatment is the same, and consists in the speedy removal of the placental mass," (p. 391). Dr. Playfair, whose work is the best recently published, lays the usual stress upon the importance of *emptying the uterus*. He says: "When the placenta is retained it is the more essential, as the hemorrhage cannot possibly be checked as long as the uterus is distended by it." Now, we ask, is this proposition of Dr. Playfair's true? Is it a fact that the mere bulk of an ordinary placenta (not abnormally adherent) can sufficiently *distend* the uterus to provoke serious hemorrhage? A moment's reflection will soon convince anyone to the contrary. Indeed, I think that the author has elsewhere in his work, clearly answered this question in the negative. We have already called attention to the fact that when the uterus contracts properly there is, in common labor, no hemorrhage during the interval between the birth of the child and the natural extrusion of the placenta, a period covering from ten minutes to half an hour, and hence

the conclusion is irresistible that so long as the womb performs its part faithfully, the mere mechanical presence of the placenta is incapable of harm. So true is this, that Dr. Playfair, in his chapter on the "Management of Natural Labor," takes particular care to warn his readers against "*undue haste*" in removing the afterbirth, a practice which he very properly believes "tends to increase the risk of postpartum hemorrhage (p. 279). He moreover adopts the rule laid down by McClintock, that fifteen or twenty minutes should elapse before making any attempt to deliver the afterbirth.

Before discussing this question further it would be well to revert briefly to the mechanism of postpartum hemorrhage. What are the causes of hemorrhage and whence comes the blood? I answer that in flooding from the utero-placental site, the causes are various but the source of the blood is always the same. It is important to remember that dangerous and even fatal hemorrhage may occur postpartum, which is quite independent of the placenta, as in intra-uterine fibroids, laceration of the cervix, vagina, etc., but such being excluded from present consideration, leaves us to deal with but three classes of cases. The first of these, and by far the most common, is uterine *inertia*; the second is abnormally adherent placenta, in which case the placenta, through structural changes in the decidua serotina, becomes so firmly fastened to the uterine wall as to interfere with proper contraction of the organ. Here we may have a normal disposition on the part of the uterus to contract, but with an inability to do so, in consequence of the firm placental engraftment, the result being irregular and imperfect contraction. It is to this class of cases that what is known as hour-glass contraction usually belongs. There is also a third class of cases, due either to disease of the the uterine fibres, to old uterine adhesions from previous inflammation, or to deranged innervation in which there is likewise defective contraction. The source of the blood in all three of the classes of cases under consideration is, not from the separated surface of the placenta, but from the torn ends of uterine vessels, the arteries and veins, both of which, but chiefly the latter, contribute to swell the torrent. The well known views of Hamilton and Sir James Y. Simpson upon the mechanism of hemorrhage in partially detached placenta have created an impression upon the professional mind in keeping with the great weight of their authority, and I am satisfied that the writings,

more particularly of the latter, have contributed largely to erroneous views of practice. It was contended by Dr. Simpson that in uterine flooding the hemorrhage was exclusively venous, and that the blood escaped, not from the denuded uterine wall, but from the venous radicles of the detached portion of placenta. Of course, if the view of Simpson be accepted, which is unfortunately vaguely done by many, there could possibly be no better alternative than to put in practice his operation, and at once separate the entire placenta and thus cut off the flow. But there can be no question that Dr. Simpson carried his theory too far, and that the theory itself was based upon a misinterpretation of facts. Such is now the almost unanimous conclusion of all modern obstetrical authorities who have given the subject special attention.

Now, Mr. President, I do not desire to be understood as advocating anything like a revolution in the matter under discussion, but my object is to call attention to certain practical considerations based upon strictly physiological data, and which I think are calculated to promote more rational views of practice; for the fact is that no physician or surgeon can successfully cope with any grave emergency, unless he has clearly fixed, in his own mind at least, substantial reasons for whatever he may feel called upon to do. Empiricism often succeeds, but in the majority of cases, and always sooner or later, it leads to disaster.

In order to state more clearly the relationship of the placenta to the etiology and treatment of postpartum hemorrhage, I would present and defend the following propositions:

1st. The placenta can only participate in causing postpartum hemorrhage when it is either of abnormal size, or abnormally adherent—thus offering a physical bar to uterine contraction.

2d. Simple retention of the placenta when detached, or partially adherent by *normal* attachment, does not of itself contribute to the production of hemorrhage.

The first thing for the practitioner to do in a case of postpartum hemorrhage, is to examine the uterus externally and ascertain its condition as regards shape, size and rigidity. These interrogations can all be readily answered by an experienced hand, placed upon the abdomen of the patient. If the uterus appear firm, but oblong and somewhat irregular in shape, he

is justified in concluding that there is something within it that offers a mechanical obstacle to perfect contraction and he knows from the feel that this obstruction must be either in the nature of a tumor, or an abnormally adherent placenta. Having satisfied himself that the uterus is willing to perform its part, he gently passes a hand within its cavity, in order to ascertain the nature of the hindrance, and if he finds the placenta partially adherent he endeavors to detach it. This is sometimes a difficult matter, and may fail of perfect accomplishment, even in the hands of the most skillful. But the completeness of contraction and the stoppage of bleeding will in this case be in proportion to the amount of placenta detached, for when this has been pretty thoroughly done, the uterine fibres are left free to contract, and the uterus will generally close down upon the placenta and hand and extrude both into the vagina. Again, the attendant may find on external manipulation that the uterine body is much larger and not so firm as it should be; it is also rounded and more uniform in its outline than in the case previously described. Here we have a mixed case, where there is partial inertia together with distension from constantly increasing blood-clots. The distension in this case directly contributes to the bleeding, and should be relieved by passing in the hand and turning out the coagula. This should however be *preceded* and accompanied by the usual remedies for inertia. It is not necessary, in a case like this, to worry over the placenta, (unless abnormally adherent) until the uterine atony is overcome, in which event the uterus will take care of itself, whether the afterbirth is within it or not.

To my mind, abnormal adhesion, or abnormal size of the placenta, constitutes the only valid reason for its manual detachment and delivery as a curative means in postpartum hemorrhage, inasmuch as these cover the only conditions in which the placenta is a factor in the production of bleeding. When, however, in much the largest class of cases, the flooding is due to uterine *inertia*, the relation of the placenta to the flooding is entirely different. Here the fault lies exclusively with the uterus, or rather with the nerves supplying the uterus; here there is no such imperative demand for active interference with the placenta, since it is simply a passive element in the case. The inertia is the thing to be gotten rid of and not the placenta, as is often taught and practiced. In order to accomplish this, ergot,

friction over the abdomen, ice, inside and outside of the uterus, and other active measures should be resorted to, but forcible removal of the afterbirth is not one of these, unless, as we have said, it be deemed advisable to clear the uterus out, for the purpose of applying per sulphate of iron, vinegar or some other styptic directly to the bleeding vessels. But these remedies are not usually resorted to until many other readier methods have failed.

I have already said that if the placenta is detached, or not preternaturally adherent, it can of itself offer no obstacle to a perfectly safe degree of contraction. If any evidence were needed upon this point beyond our daily experience in natural labor, the testimony of Ruysch, Wm. Hunter and many others of their school, who adopted the practice of leaving the placenta in utero for hours and days, till nature herself threw it off, without hemorrhage—would seem to definitely settle this point. Again, if the placenta be of normal adhesion, the less the area of surface detached the better, so long as atony continues, because the bleeding surface is at a minimum. Here the attachment of the placenta, so far from being an evil requiring to be broken up, is a fortunate circumstance, and is due to the inertia—to the fact that the uterus has not contracted sufficiently to slide it off. Forcible detachment with the hand under these circumstances is certainly very questionable practice, and should not be resorted to without due consideration.

Yet there are few of our text books that contain any clear instruction on this point. The late Prof. Bedford, however, has with his usual vigorous style, presented this matter in its true light. In his lecture on the management of "external hemorrhage," he says, "Flooding may occur when the placenta is completely or partially detached and yet within the uterine cavity, or it may occur after this mass has passed from the organ. It is a very singular fact that many practitioners imagine the *sine qua non* of success in the management of hemorrhage to be the removal of the placenta, and hence in these cases, the very first thing attempted is to extract this body, under the impression that with its delivery the flooding will cease. There never was a more perfect delusion. Why, gentlemen, the afterbirth in strict truth has nothing to do with the hemorrhage; it is not a bleeding surface, and whether it be within or outside the uterus is a matter of utter indifference, so far as the great object is con-

cerned—the inducing of uterine contraction. The practice is founded upon vague and indefinite notions with regard, in the first place, to the true cause, and secondly to the true source of the hemorrhage.”

It only requires a little reflection, I think, to convince us that this position of Dr. Bedford is unimpeachable, and that the successful treatment of post partum hemorrhage must depend upon rational therapeutics, addressed to the cause. In the hands of a skillful and vigilant physician it can scarcely ever occur that anything like a fatal hemorrhage could depend upon any other cause than *inertia uteri*. Other causes may induce severe bleeding, but rapidly fatal hemorrhages are almost always the result of uterine atony. This is the class of cases which demand prompt action, clear judgment and discrimination, and these teach us that our efforts should be directed to the induction of uterine contraction, rather than in exciting our already nervous patient in unnecessary haste to detach and deliver the innocent placenta.

I am satisfied, Mr. President, that there is a great deal of misjudgment and false reasoning in connection with the management of the placenta in such cases. *Because* the hemorrhage frequently ceases on the forcible delivery of the afterbirth, such removal is credited with the result, but, as I have already said, the *post hoc, ergo propter hoc* argument in this case does not bear critical analysis; for when this happens, the stoppage of the hemorrhage is simply an incident due to the stimulation of the uterine walls during the act of detachment and delivery of the placenta. But since the presence of the placenta did not cause the inertia in the first place (exactly the reverse being the case), its detachment (when normally adherent) and delivery cannot possibly, within themselves, cure it. The same amount of intrauterine stimulation would produce the same result independently of the placental delivery. And, on the other hand, if the inertia be profound, and is dependent, as is often the case, on extreme nervous exhaustion, the manual detachment of the placental mass will possibly fail to awaken contraction; in which event the hemorrhage will be increased in proportion to the number of additional uterine sinuses thus laid open.

The fact is that the more we study the pathological physiology of these cases, the more apparent does it seem that the real cause of the *inertia* lies hidden back in the deeper recesses of the nervous system; causes that we have not yet fully fathomed, but which are doubtless intimately connected with the secret springs of the female economy. These must needs be touched before we reach the true physiological remedy, either in the way of prophylaxis or treatment.