

**An essay on uterine hemorrhages depending on pregnancy and parturition
/ By Thomas Denman.**

Contributors

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AN
ESSAY
ON
UTERINE HEMORRHAGES

DEPENDING ON
PREGNANCY and PARTURITION.

By THOMAS DENMAN, M.D.
LICENTiate IN MIDWIFERY,
OF THE COLLEGE OF PHYSICIANS;
AND TEACHER OF MIDWIFERY IN LONDON.

L O N D O N :

Printed for J. JOHNSON, No. 72, St. Paul's Church-Yard.

MDCCLXXXV.

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Printed for J. Johnson, No. 7, St. Paul's Church-Yard.

MDCCLXXXV.

IT has been my custom for many years to print detached papers, for the use of those students who have attended Dr. *Osborn's* and my Lectures. In this manner were printed, Aphorisms on the application and use of the Forceps, on Preternatural Labours, and on those attended with Hemorrhage, about *twelve* years ago; an account of the Retroversion of the *Uterus*, *nine* years ago, an Introduction to the Practice of Midwifery, now collected into a small volume; and many other papers, containing observations, which I persuaded myself were new. These papers, though intelligible to the students, were printed in so irregular and incorrect a manner, that I durst not submit them to censure, as formal publications. But finding I must either do that, or relinquish all claim to the credit of my own observations, I have prevailed with Mr. *Johnson* to offer for sale, a few copies of the Introduction and Aphorisms, and now publish this Essay, as I mean to do any thing I may in future print; trusting to the indulgence of the public, to excuse their imperfections, till my engagements will allow me time to reduce them into better order.

LONDON,
September 26, 1785.

I have been my constant for many years to write
A detached paper for the use of the students
who have attended Dr. Johnson's and my Lectures.
In the manner was stated, Appendix on the
application and use of the Forceps on Pericranial
Laceration, and on the intended with the Forceps,
about twelve years ago, an account of the History
version of the System, now years ago, as far as
tion to the Practice of Midwifery, now collected
into a small volume, and many other papers, con-
taining observations, which I perused myself
were now. These papers, though intelligible to
the students, were printed in a fragment and in-
correct a manner, that I doubt not injure them to
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either do that, or relinquish all claim to the credit
of my own observations, I have provided with
Mr. Taylor to offer for sale, a few copies of the
Introduction and Appendix, and now publish the
Essay, as I mean to do my thing, in a large
print; trusting to the indulgence of the public to
excuse their imperfections, till my engagements
will allow me time to reduce them into better
order.

LONDON:
Printed by J. Johnson, in Pall-mall.

CLASS FOURTH.

Anomalous, or Complex Labours.

FOUR ORDERS.

ORDER I.

Labours attended with an Hemorrhage.

ORDER II.

Labours attended with Convulsions.

ORDER III.

Labours with Two, or more Children.

ORDER IV.

Labours in which the *Funis Umbilicalis* presents
before the Child.

CLASS FOURTH.

Abnormal, or Complex Labours.

FOUR ORDERS.

ORDER I.

Labours attended with an Hemorrhage.

ORDER II.

Labours attended with Convulsions.

ORDER III.

Labours with Two, or more Children.

ORDER IV.

Labours in which the Fetus Umbilical presents before the Child.

ORDER I.

Labours attended with an Hemorrhage.

SECTION I.

IT is necessary to premise, that no practical advantage can be derived from the arrangement of these labours into one class. It is merely of use for the convenience of doctrine, and to prevent the multiplication of classes; for there is not the least resemblance between the different orders, which do not therefore admit of any general character or definition.

Uterine hemorrhages of various kinds, very frequently occur, and always require great attention; but those which we are about to consider in this place, are such as depend upon the states of pregnancy and parturition. These have ever been esteemed as constituting a very important

part of the practice of Midwifery, on account of the great danger with which they are often attended; and because the safety of the patient, more frequently depends upon the judgement and skill of those under whose care she is placed, than in almost any other circumstances. The subject therefore demands to be treated with the utmost circumspection; and though much industry hath been employed upon it, there is reason to believe, that the knowledge of many things of which we are at present ignorant, is wanting for the perfection of the rules of practice. The knowledge however which we do possess, it is incumbent upon us to place in the most advantageous point of view, that it may be converted to use; that we may be enabled to do what experience dictates as necessary; and may also determine upon the proper time of doing it; and be warned moreover to avoid doing what is useless or hurtful.

The word hemorrhage does not apply with propriety to all discharges of blood from the *uterus*, some of these being natural and salutary. The menstruous discharge is natural, but if it should be excessive in quantity, or prolonged beyond its usual time, it might be called an hemorrhage. Every discharge of blood which occurs during pregnancy, however small, may be called an hemorrhage, because it is not natural at that time. A similar observation may be made of those discharges

charges which happen between the birth of the child and the expulsion of the *placenta*. But the discharges which happen after the expulsion of the *placenta*, cannot be called hemorrhages, unless they are excessive in their degree, because some loss of blood is at that time necessary and natural. We may then say that all effusions of blood which are inordinate in quantity, or irregular in the time of their appearance, or in both respects, may be denominated hemorrhages; and these, which are the objects of our present consideration, may be divided into four kinds.

1. Those which occur in early pregnancy, or in abortions.

2. Those which occur in advanced pregnancy, or at the full period of utero-gestation.

3. Those which happen between the birth of the child and the expulsion of the *placenta*.

4. Those which follow the expulsion of the *placenta*.

Under one or other of these distinctions, will be included every kind of hemorrhage which depends upon pregnancy or parturition; and this arrangement will not only convey a clear idea of the subject, but be of use also in practice. Yet it is necessary to observe, that there may be a combination of the three last kinds, or any two of them in the same patient; but whether they are
separate

separate or combined, the mode of treatment may be applied with equal propriety and advantage.

Greater accuracy is nevertheless required in the description of what is meant by early or advanced pregnancy, or we may entertain different notions of the same thing. Perhaps no exact line can be drawn for this purpose, as contingent circumstances may cause a variation in different women; yet the best, which the nature of the subject admits, is to be taken from time. We will then say that all expulsions of the *fetus*, before the termination of the sixth month of pregnancy, may be called abortions; but all expulsions in the last three months, shall be considered as labours, premature or regular. There is a practical reason for this distinction, for before the termination of the sixth month, these cases neither require nor allow of manual assistance; but in the last three months, they admit of manual assistance, if it be required, though not with equal ease; for the longer the time wanting to complete the period of utero-gestation, the greater the difficulty will be which attends any operation. It is also to be observed, that expulsions of the *fetus* sometimes happen so critically, as to render it an extremely difficult thing to decide, to which of the distinctions they ought to be referred; and in these, if we knew any method of treatment between that

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enjoined for abortions, and at the full period, it would be most eligible. But on this as well as many other occasions, there is room to observe, that when every doctrinal distinction has been made, no precise rule can be formed for the conduct of the practitioner, in every possible situation in which a patient may be placed; but he must ever be at liberty to exercise his own judgement.

It would be curious, and might be of some utility in practice, to ascertain whether women, on account of their menstruation, or their erect position, or the structure of the *ovum*, or from any other cause, are naturally more liable to abortions than animals; or whether frequent abortion in women may not be considered as an attributive either of habits, superinduced by modes of living, or of accidents which might be avoided. There is great room to lament their frequent occurrence in the more civilised, perhaps luxurious scenes of life, and in those constitutions which are extremely delicate. Yet in those situations which might be presumed to be most unfavourable to the sex, among the lowest ranks of life, abortions, except from violent external accidents, rarely happen; so that there is some reason for believing that women in a state of nature would seldom suffer abortion. According to the opinions nevertheless of many systematic writers on this subject, every
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action in common life has been assigned as the cause of abortion; and in general that, about which the patient was employed, when the first symptom appeared, is fixed upon as the particular cause, though probably she was before in such a state, that abortion was inevitable. But if this opinion of abortion be just, then the event ought rather to be imputed to some previous indisposition, or to the excess of such actions. Greater practical benefit will be obtained, if we seek for the causes of abortion in the general infirmity of the constitution, or in some particular state of the *uterus*, or its appendages. As far as the constitution may be altered, by the reduction of the general strength, by plethora or febrile disposition, so as to be unable to perform its functions, or to perform them with propriety and regularity, we may esteem every cause capable of producing such a state, as a primary cause of abortion. But perhaps it does not often happen that simple weakness is a cause of abortion; for women who prove with child, in very weak and reduced states of the body, particularly in consumptions, in whom there is a great aptitude to conceive, have, of all women the least disposition to miscarry, yet a state more feeble and more irritable, could with difficulty be pointed out. But the weakness and irritability is of a particular kind, not arising from, connected with,

with, or influencing the *uterus*, which proceeds in the performance of its functions, as if the constitution was in a state of perfect health. We may hence conclude that either weakness or irritability in general, are seldom causes of abortion, but some weakness or imperfection in the *uterus* or its appendages; or a peculiar kind of irritability, thence proceeding, distinguishable enough in the female character, by a careful observer, which creates impatience of mind and restlessness of body; in which every occurrence is the parent of fear and solicitude, and every office is performed with hurry and vexation. As an abundance of acrimonious, or some other humour or quality of the body, may transfer this state to the mind, so the mind often reverberates this state to the body, the continuance of which will often prevent the regular performance of any process. It is therefore often found of as much importance, to give composure and steadiness to the mind of a patient, and to lead her to hope and chearful expectation, by soothing and comfortable conversation, as it is to administer medicines to the body.

With respect to the state of the *uterus*, the opinion originally entertained and still pursued, as far as can be collected from the medicines usually prescribed, was, that it failed to perform its office on account of its excessive lubricity, as if the *ovum*

slip out of the *uterus*; but this idea will not bear examination. It is remarkable that women who are in the habit of miscarrying, go on in a very promising way to a certain time, and then miscarry, not once, but for a number of times, in spite of all the methods which can be contrived, and all the medicines which can be given; so that there is more reason to suspect that the *uterus* is incapable of distending beyond such a size, when it takes its disposition to act, and is never quieted till it has excluded the *ovum*. What I am about to say, will not, I hope, be construed as giving a licence to an irregularity of conduct, which may often be assigned as the immediate cause of abortion; or lead to the negligent use of those means which are likely to prevent it. But from the examination of many *ova*, after their expulsion, it appears that their longer retention could not have produced any advantage; the *fetus* being decayed, or having ceased to grow long before its expulsion; or the *ovum* being in such a state, that it was become wholly unfit for the office which it was designed to answer; so that if we believed there was an intelligence in every part of the body, we should say, it was concluded in council, this *ovum* can never come to perfection, and the sooner it is expelled the better.

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Conception probably depends upon the perfect state of one or both *ovaria*, and will therefore sometimes take place when the *uterus* is very much diseased; but the progress depends upon the state of the *uterus*, and chiefly upon that of the *fundus*; for I have known several instances, of women who had considerable excrescences and induration about the *os uteri*, who have conceived, and gone on to their full time without any inconvenience. The imperfections observable in *ova*, are of different kinds, and found occasionally in every part. There is usually a consent between the *fœtus* and the shell of the *ovum*, as the placental part and the membranes may be called, but not always; for examples have occurred in which the *fœtus* has died before the termination of the third month, yet the shell being healthy, has increased to a certain size, has remained till the expiration of the ninth month, and then been expelled, according to the genius and constitution of the *uterus*. But if the shell becomes diseased, then the *fœtus* being deprived of its nourishment, is of course destroyed, and both are expelled, as any other extraneous body would be, though not immediately on the accession of the mischief. The part of the *ovum* most commonly found diseased, is not that which passes from the *ovarium*, but that production of the *uterus*, which is prepared for the reception of

the *ovum* after its passage from the *ovarium*, and which may be called the connecting membrane of the *ovum*. Between this and the outer membrane of the *ovum* there is usually a great effusion of blood, which insinuates itself through the cellular membrane of the *placenta*, and between the membranes, giving to the whole *ovum* a tumid and unequal appearance. It is probable that either the connecting membrane is imperfectly formed, or there is some difficulty, and a failure in the completion of the union between it and the *ovum*. According to this opinion the causes of abortions are to be sought for in the female only, contrary to what I formerly suspected.

All the means which can be advised with any prospect of success, in the treatment of abortions, may be considered as preventative or curative; whether the cause exists in the constitution, or in the *uterus*. In either of these views we must chiefly recur to the constitution, as in the first case, it is the great object of our attention; and in the second, as the principal chance of producing any salutary change in the *uterus*, is through the medium of the constitution, on the improvement of which our success must depend.

As women with different constitutions and different states of health are subject to abortion, every mode of treatment must be accommodated to
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the constitution of each patient, and to the disease of which there may be any indication. In plethoric and febrile habits, it may be proper to bleed, soon after the suppression of the menstruous discharge, and occasionally afterward; to enjoin a spare diet, and to give cooling medicines; and perhaps in some habits, in which the *uterus* may be supposed unwilling to distend beyond a certain size, to prescribe opiates in small quantities often repeated, and sometimes tepid bathing. In debilitated and languid constitutions, strengthening medicines of every kind will be proper, as bark with elixir of vitriol, bitters of various kinds, and chalybeate medicines, in the officinal or extemporaneous forms, or mineral waters. The cold bath, sea-bathing especially, is pretty constantly recommended for the general purpose of improving the health, not only in those who have a disposition to abortion, but in those also who are accustomed to bring forth dead children, or who are prone to hemorrhages at the time of delivery; and experience has shewn that it may be continued through the whole time of pregnancy with advantage. For the great purpose of establishing permanent strength in those who have had long continued ill health, or who are in a habit of these untoward accidents, nothing seems better calculated, or is found to be more useful than travelling;

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not taking a hasty journey, but wandering about for many months, by which the evils which appertain to the refined scenes of civilised life are done away, and the corporeal advantages of a natural state are, in some measure, acquired.

When the health cannot be confirmed, so as to enable the constitution to bear the common exigencies of life, it has been thought advisable to remove patients from them, by confining them to their house, to a floor, or a single room; or even to an horizontal position, throughout pregnancy. Some instances of advantage from this practice I have known; but if we consider abortions as proceeding from weakness, or too great a degree of irritability, confinement to a room, or any treatment by which both those evils are likely to be increased, seems a strange method of preventing mischief; and from what I have seen of the general event of such practice, much cannot be said in its favour. In the management of some cases of this kind, I have thought myself entitled to credit, but I must also acknowledge that I have been more frequently disappointed; yet for some reason, not obvious or easy to discover, the patient wearied with the fruitless attempts of art, and deserting all rules, has another time escaped the abortion, which I had in vain attempted to prevent.

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With respect to that state of the *uterus* itself, which may be considered as the cause of abortion, should there have been any indication from the discharges being irregular or profuse, if they are of the sanguineous kind; from their quality or degree, if of that kind which pass under the general name of weakness, it is first to be determined whether they are symptoms indicating a certain state of general health, or any morbid disposition of the *uterus*. Should they even be of the latter kind, it is often by application to the constitution at large, that we have the power of making any material alteration in the state of the *uterus*. Something may however be done by local applications of various kinds, but their activity must not be such as to make too quick an alteration, by suppressing suddenly any kind of discharge to which the part itself, or the constitution may have been long accustomed. For it must be observed, that disagreeable as these discharges are, they are often of secondary use; that is, if we suppose a certain state of the *uterus*, the discharge may be absolutely necessary for its relief, while it remains in such a state, and the state is to be changed previous to the suppression of the discharge; or instead of removing, we shall add to the disease. In such states of the *uterus* as dispose to abortion, I have not advised any more active application than the Bath or Buxton Waters, which

which may be injected into the *vagina*, in the interval between the two periods of menstruation, or even for a longer time. I say into the *vagina*, because I do not approve of the daily introduction of any instrument within the *os uteri*, on this account, or for the relief of any other disease.

The circumstances attending abortions, and the symptoms by which they are threatened or accompanied, are very different, as are all the effects arising from uterine disturbance. But there is generally pain in the back, *abdomen*, and inferior extremities, with a sense of weight in the region of the *uterus*; frequent micturition and a tenesmus; but the most certain sign of an abortion, is a discharge of blood, which proves that some part of the *ovum* is loosened from the *uterus*.

When such discharge happens during pregnancy, especially at an early period, it has been a received opinion that abortion was inevitable, because it was presumed that the separation which it proved, could not be repaired. It must be allowed that under such circumstances there is always too much reason to expect an abortion, yet experience has fully shewn, that women who have had not one, but repeated discharges, and sometimes to a profuse degree, have gone to their full time, without any imperfection in the child, or any detriment to the mother;

ther ; the loosened part, by some operation beyond human skill, having been cemented and re-united to the *uterus*. There seems to be just so much chance of preventing an abortion, when there has been a discharge of blood, as to make it worth while to use the common means for that purpose, and to keep the patient cool and composed.

There is an almost endless variety in the manner in which abortion happens. Some women abort with sharp and long continued pains ; others, with little or no pain, the *ovum* gliding out of the *uterus* almost imperceptibly ; some with a profuse and alarming hemorrhage, others with very little discharge. In some, the *ovum* has been soon and perfectly expelled ; in others, after a long time, first the child, then the *placenta*, whole, or in small portions, or part of it dissolved. But whatever other pain or trouble may attend, the hemorrhage is the only immediately alarming symptom ; I say immediately, because every practitioner must be convinced that either abortions occasion diseases, or the time of abortion is an era, from which we may date the commencement of some dangerous diseases of the *uterus*. It has also been imagined, that the safety of the patient very much depended upon the complete and speedy expulsion of the *placenta* ; and when it was retained, very active deobstruent medicines were supposed to be necessary, and strenuously

nuously given for the purpose of expelling it, lest it should become putrid, and some of the putrefied parts be absorbed into the constitution. I believe the whole supposition is groundless, having seen many instances of its being expelled in a very putrid state, when the patient was in perfect health; and when the patient had a disease, the putridity of the *placenta* seemed the consequence not the cause of the disease. At all events, much less mischief may be expected from the retention of a putrid *placenta*, than from attempts to force it away by the medicines usually given, or by manual assistance.

The degree of hemorrhage in abortions is not always in proportion to the period of pregnancy, but it depends upon the difficulty with which it may be expelled; sometimes upon the cause, and perhaps upon some peculiarity in the constitution, as happens in the menstruous discharge.

A notion of there being something mysterious in uterine hemorrhages, different from those from any other part of the body, has been entertained, and supposed to occasion the necessity of a peculiar treatment. But it is now agreed, that the general principles which guide us in the treatment of hemorrhages, from any other part of the body, are with equal propriety applicable to those from the *uterus*. We must however recollect, that
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in uterine hemorrhages there is an additional circumstance, which we are ever to bear in mind; that they are ultimately to be suppressed by the action of the *uterus*, and by the evacuation of whatever may be contained in its cavity.

Hemorrhages of all kinds are moderated, or wholly stayed, by the formation of *coagula* at the orifices of the open vessels; or by the contraction of the coats of the vessels themselves, by which their orifices are lessened or closed. The latter of these effects being stronger and more active in arteries than in veins, may be a reason for the common observation, that hemorrhages from arteries, though in an equal degree, are less dangerous than those from veins, in which the power of contraction is wanting. It has been proved by physiologists, that both these effects, that is, the formation of *coagula*, and the contraction of the vessels, are favoured when the blood circulates most slowly, as in fainting; not to mention that the quantity of blood lost in a given time, will depend upon the rapidity or slowness of the circulation, as well as upon the size of the vessel opened. But in a state of faintness, which speedily follows all profuse hemorrhages, the three effects are produced at the same time. Further, the advantage arising from the contraction of the *uterus* is obtained; for this acts, or makes its efforts to act, in sleep, during

faintness, and sometimes even after death. Fainting may then be considered as a remedy provided by nature for averting the immediate danger of all hemorrhages, and to prevent their return. Cordials or stimulants should not therefore be given to those who are faint from hemorrhages, till by the duration of the faintness we conclude there has been sufficient time to produce those effects which would prevent a renewal of the hemorrhage, or lessen its danger if it should return.

The *materia medica* abounds with articles under the class of astringents, many of which are given indiscriminately in hemorrhages and profuse discharges of every kind; nor does there seem to have been much distinction between those which were found useful in hemorrhages as applications, and those which were given internally. It has rather been concluded that what was found useful as an external application, would of course be profitable if given internally. It is however clear that astringent medicines, properly so called, can have no power in stopping hemorrhages from the *uterus* or any other part of the body, excepting the intestinal canal; but that every medicine which slackens the circulation of the blood, becomes eventually an astringent. If the patient therefore be plethoric or heated, it may be proper to bleed in an incipient abortion accompanied with an hemorrhage;

morrhage ; though if the patient be reduced to a state of great weakness, that operation would be useless and improper. The saline draughts with nitre, or nitre alone ; or acids mineral or vegetable, may be given as frequently and in as large a quantity as the stomach can bear. Even the nausea, which these and other medicines sometimes produce, has, by no forced construction, been considered as an artificial imitation of faintness, and found serviceable. Medicines have been given expressly for that purpose ; and perhaps the safest and not least effectual of these is *Ipecacoanha*, in small quantities, often repeated, so as to keep up a perpetual nausea. When the discharge is profuse, cloths wet in cold vinegar, may be applied to the *abdomen* and loins, and changed when they grow warm. On the same principle clysters of cold water have been also advised. The patient should be exposed to, and suffered to breathe the cold air. In short, every application and medicine, actually or potentially cold, even ice itself, if it can be procured, may be used with probable advantage, when the exigency of these cases requires very powerful assistance.

Injectiions of cold or astringent fluids into the *vagina*, have been recommended as being of great value for the suppression of uterine hemorrhages.

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If we attempt to throw up injections when the blood is flowing in a full torrent, they will be immediately rejected; and if they are used with the view of preventing a return of the hemorrhage which has already ceased, it is rather to be expected, by washing away the coagula formed and applied to the orifices of the vessels, that they would occasion it. The principal good that could be derived from them, probably is, by their action upon the internal parts as a cold application. Less objection may perhaps be made, and equal or rather greater advantage will attend the introduction of Lint, or any soft substance, moistened with spirit of wine, into the *vagina*. But I have generally been satisfied with the application of a cloth wet with cold vinegar to the external parts, with so firm a pressure, that the stream of blood should be instantly retarded or suppressed. This might have been originally done instinctively, to remove the immediate dread of the hemorrhage, and to give me a little time to reflect and determine how I should proceed; but being persuaded that this is of real utility, it is a custom with me to do it, in the first instance, in every alarming or dangerous hemorrhage.

Opiates have been recommended in abortions, and in all cases of uterine hemorrhage; but I
feldom

feldom use them, unless with a view of moderating an uncommon degree of pain, or of quieting some tumult which attended or followed the accident; having reasoned myself into an opinion that they do not deserve the high commendation which has been given them. Some pain is necessary and unavoidable, whenever an effort is made for the exclusion of any substance out of the cavity of the *uterus*. The degree of pain proves the degree of action raised for this purpose, and we should consider how far by lessening the pain we may lessen the action; and by lessening that action, by which the *ovum* would be expelled, whether we contribute to the suppression of the hemorrhage, or to the more regular conduct of the abortion.

It was said that no manual assistance was required in the management of abortions, and no rule can be more generally true; yet there are some exceptions. When, for instance, a woman who is miscarrying, with a considerable, or perhaps dangerous hemorrhage, is so far advanced in her pregnancy, that it may be difficult to decide whether we should deem it an abortion or a premature labour. It may not be safe to rely upon the use of those means which were advised for hemorrhages in general, and yet the operation of delivering would be extremely difficult and hazardous. We may then determine upon an intermediate

mediate method, which is to break the membranes. By the discharge of the waters off the *ovum*, which necessarily follows, the distension of the *uterus* is lessened, of course the size of the open blood vessels, by which the discharge had been made, is diminished, and the hemorrhage is abated or suppressed. In consequence also of the discharge of the waters, the *uterus* acquires a disposition to act, and an ability to act with more energy, and the whole business is sooner completed. At a more early period of pregnancy, when the hemorrhage is profuse, liable to return, or of long continuance, on examination *per vaginam*, the *ovum* will sometimes be found hanging in the *os uteri*, half or more of it voided out of the cavity of the *uterus*, yet enough remaining to keep up the hemorrhage. Then, by a little motion or slight impulse in different directions, it will sometimes be cleared of the *os uteri*, and drop into the *vagina*. Some caution is to be used in this operation, for if it be done with violence, it may occasion an increase of the hemorrhage, or be a cause of future mischief.

In abortions, dreadful and alarming as they sometimes are, it is a great comfort to know that they are void of danger, either from the hemorrhage, or on any other account. It is perhaps impossible to explain, but the fact is undoubtedly true,

true, that an equal loss of blood, and with apparently equal effects, should, in abortions, if properly managed, and the patient is in good health when they take place, not occasion any danger; and yet at the full period of utero-gestation, be so dangerous, that one considers the patient who recovers, as having a lucky escape. It is wonderful also to observe how soon women recover from the debility occasioned by hemorrhages in abortions; and how long a time is often required for their recovery in advanced pregnancy. But though I reckon there is no danger from mere abortion, yet when the accident is in consequence of acute diseases, there is often extreme danger; for women abort because they are already in great danger, and this is aggravated by the abortion. Without a more accurate distinction we may still form an erroneous prognostic. It is said, for example, that women who miscarry, or are delivered at the time of their having the small-pox, universally die. Now if a pregnant woman should, at any period of pregnancy, expel her child in the commencement of that disease, perhaps from the violence of the eruptive fever, she may not only escape the danger, but go through the disease with as much regularity as if she had not miscarried. But if that period of the disease be passed without abortion, and the patient should go on to the time of the

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crisis,

crisis, and then miscarry, the general prognostic will be too true; at least the death of the patient has followed in every case of this kind which I have seen.

S E C T I O N II.

UNDER this head will be included all the hemorrhages which occur in the last three months of pregnancy, because, from the danger with which they are attended, they require, and from the situation of the patient, they allow of a similar treatment when required, though not with equal facility. These hemorrhages are occasioned 1st. by the attachment of the *placenta* over the *os uteri*; 2d. by a separation of a part or of the whole *placenta*, which had been attached to any other part of the *uterus*. This separation may be caused either by accidental violence, or by some morbid affection of the *uterus* or *placenta*; and it sometimes happens without our being able to assign any cause, equal to the suddenness and violence of the effect produced.

Hemorrhages arising from the first cause, have been considered, and generally are more dangerous,

rous, than those from the second; but these have nevertheless sometimes proved fatal. Hence in the estimate of the danger of uterine hemorrhages in general, it is necessary not only to discover the cause, and to regard the quantity of blood lost, but above all other considerations, to attend to the effect produced, which is infinitely greater in one constitution than in another, and varies in all. If any individual patient therefore be brought into a state of danger by the loss of blood, great or small, it is incumbent upon us to put in practice all the means in our power for the removal of the danger. Any judgment formed upon the quantity of blood discharged, will be liable to great errors, as concealment or accident may deceive us; not to mention that cases sometimes occur, in which there may be a greater quantity of blood lost, than can be known; either by its being locked up beyond the child, when the membranes are broken, or by its being effused into the *ovum*, when that has an appearance of being whole. This observation, of the necessity of judging principally by the effect of the loss of blood, deserves the most serious reflection, because, the *time when* we are to execute what reason dictates, or experience authorizes us to do, will chiefly depend upon it. It is also of great importance to recollect, that those hemorrhages are far more dangerous, in which an

equal quantity of blood is lost suddenly, or in a short space of time, than if it flows away slowly. The immediate injury to the constitution is greater in the former case, the vessels requiring some time to enable them to be accommodated to the quantity of blood remaining in them; and it also creates a suspicion that the return of the hemorrhage is to be much dreaded, because if equally profuse with that which has happened, it may occasion the death of the patient, before we have time to put in practice, or reap the advantage of what we suppose to be the only method of removing the danger.

In hemorrhages the danger is indicated by the weakness and quickness of the pulse, or by its becoming and continuing imperceptible; by a general paleness and coldness of the body, and by a ghastly countenance; by inquietude, or by continual faintings; by a high and laborious respiration, and by convulsions. The two last are usually mortal symptoms; yet when patients are reduced to a certain state of weakness, they are liable to hysteric affections resembling convulsions, that are not dangerous.

When patients have suffered much from loss of blood, a vomiting is often brought on; and sometimes under circumstances of such extreme debility, that I have shrunk with apprehension, lest they

they should have been destroyed by a return or increase of the hemorrhage, which I concluded was inevitable after so violent an effort. But there is no reason for this apprehension; for though the vomiting may be considered as a proof of the injury which the constitution has suffered by the hemorrhage, yet the action of vomiting contributes to its suppression; perhaps by some revulsion, and certainly by exciting a more vigorous action of the remaining powers of the constitution, as is proved by the amendment of the pulse, and of all other appearances immediately after the vomiting.

A tolerably just opinion may be formed of the danger of uterine hemorrhages, in advanced pregnancy, by the pain with which they are attended. An equal hemorrhage, without pain, is always more dangerous than if the pain be regular and acute; and the danger is lessened as the pain increases. In the most dangerous hemorrhages, there is no pain whatever, or none of consequence, and patients have often died, or been brought into the most imminent danger, that is into situations from which it was impossible for them to recover, whilst the practitioner was waiting for the accession of the pains of labour. The reason was before explained. The pain proves the degree of the action of the *uterus*, and the action of the *uterus* proves that the powers of the constitution
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are not exhausted. In very bad cases there is an effort in the *uterus* to act, just sufficient to cause a renewal of the hemorrhage; and immediately upon the discharge of a gush of blood, the effort, together with the little pain attending, ceases; and in this manner patients would proceed to the moment of their death, unless they were relieved by art.

S E C T I O N III.

THOSE hemorrhages which are occasioned by the attachment of the *placenta* over the *os uteri*, are first to be considered, because they are attended with the greatest danger, and because some part of their treatment will apply in other cases.

Though the *placenta* be attached over the *os uteri*, the woman usually goes through the early part of her pregnancy without any inconvenience, or any symptom which denotes it. But when the *cervix* of the *uterus* is distended to a certain degree, or when the changes previous to labour come on, there must be an hemorrhage, because such distention, or change, necessarily separates a
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part of the *placenta*. This hemorrhage is not always in proportion to the space of the *placenta* attached over the *os uteri*, or to the quantity separated, for women have sometimes been in as great danger, when the mere edge of the *placenta* was fixed upon the *os uteri*, as if the middle had been placed over it.

When hemorrhages from this cause once come on, though all women would not die, they are never free from very great danger till they are delivered. As there is little chance of the accomplishment of the delivery by the pains of labour, and experience having fully proved the insufficiency of all other methods, and how little reliance ought to be placed in them, it is a practice, established by high and multiplied authority, and sanctioned by success, to deliver women by art, in all cases of dangerous hemorrhage, without confiding in the resources of the constitution. This practice is no longer a matter of partial opinion, on the propriety of which we may think ourselves at liberty to debate; it has for near two centuries met the consent and approbation of every practitioner of judgment and reputation, in this and many other countries.

There is much comfort in knowing and possessing a remedy to which we can recur, with a more than equal chance of success, in any case of
great

great danger. But though it should be allowed that the artificial delivery of the patient, in every case of dangerous hemorrhage, in advanced pregnancy, is expedient and necessary for the preservation of the life of the patient; and though the practitioner who should neglect it, would be very reprehensible, yet that necessity, or that expediency which constitute the authority for the operation, and which is now clear and distinct to another, may not appear to me. Besides, should the necessity be acknowledged, and the practice approved, there may be much dispute and difference of opinion about the *time when* the operation ought to be performed.

It would be of great advantage in practice, if some mark was discovered, or some symptom observed, which would indicate the precise time when women with hemorrhages of this kind, ought to be delivered. But though we do not at present know any such mark or symptom, and the determination of the time is to be made by the judgment of each individual practitioner, we may be permitted to state what we do know in the most convincing point of view.

Admitting then in the first place, that women who have uterine hemorrhages from this cause, in advanced pregnancy, are not in safety till they are delivered; and granting also, that under these

these circumstances, if none, or insufficient efforts are made for the expulsion of the child, that the woman ought to be delivered by art; and if it be true that this operation, though performed before it is absolutely necessary, is not attended with danger, if it is performed with due care; but that if the operation be delayed beyond the proper time, it will not answer the purpose for which it is recommended; we may from these premises conclude, that it is better to deliver too soon, than to delay the delivery a moment too long, and that in every case of doubt, it is a proof of wisdom to decide, and determine upon speedy delivery.

It is however seldom necessary to deliver women on the first appearance of the hemorrhage, yet that will be sufficient to awaken our apprehensions, and set us upon our guard. Nor does it often happen that a second or a third discharge obliges us to proceed to deliver immediately; because each return may not be in such a quantity, as by its violence to endanger the life of the patient; and such an interval may pass between the returns, as to give time and opportunity for the reparation of the mischief done by one loss of blood, before the return of the next. There are cases however in which the quantity of blood lost, and the effect produced is such with one hemorrhage, as to make it unsafe to trust to the return; and whenever the

countenance and other appearances indicate that the constitution is much impaired, by repeated, though not profuse discharges, the strength is undermined, and danger creeps on certainly though insidiously. We may presume that every constitution is capable of bearing the loss of a certain quantity of blood, without the instantaneous hazard of life, and this will depend upon the general state of the body. Now the body may be reduced to such a state, that there is barely a sufficient quantity of blood, or of powers, to carry on the business of life, upon a very nice balance; of course the additional loss of a very small quantity, may altogether destroy the power of living, and the patient die of the hemorrhage, though the quantity of blood which immediately preceded her death may be small; but unfortunately she was able to bear the loss of none. We will therefore not only be on our guard against the effect of rapid and profuse discharges, but against those which are productive of as much danger, on account of their returns, though less in degree at any one time; we will ever call to our mind the possible evil of delay, and recollect that there is no danger in premature delivery, if the operation be performed with prudence.

In some cases, in which it has been thought necessary to deliver the patient on account of the
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hemorrhage, the parts have been in such a state, that the operation could not, it was thought, be performed with safety. Whenever the case demands the operation, on account of the danger of the hemorrhage, the state of the parts will always allow it to be performed with safety, though not with equal facility; and though it may often be necessary to determine speedily upon the propriety of the operation, this should not be performed rashly, but with the utmost deliberation, even though it admits of hurry. For in hemorrhages a woman may perish from two errors in practice; from delaying the operation too long, and from the rude, violent, or improper manner in which it is performed.

Sufficient notice hath been taken of the danger of protracting the delivery in cases of hemorrhage. With respect to the operation, the first part, that is, as far as relates to the position of the patient, the introduction of the hand, and the dilatation of the *os uteri*, has been already described under preternatural presentations. When the *os uteri* is with great caution sufficiently dilated to allow of the ready admission of the hand, and we come to the *placenta* attached over it, it is of no consequence whether we begin to separate this till we come to an edge, and go up on the outside of the membranes, which may be ruptured at pleasure; or

whether we perforate the substance of the *placenta*, and conduct the hand directly into the *ovum*; though by the latter method there is rather more danger of losing the child. In either case, without regard to the position of the child, we must proceed to and lay hold of its feet, carefully distinguishing that they are the feet before we begin to extract them. Immediately on our beginning to withdraw the hand, which should be done with a slow waving motion, the waters of the *ovum* flow away; and while they are flowing, we must bring the hand, grasping the feet of the child lower, till by slow degrees they are brought into the *vagina*. We are afterwards to wait till the *uterus* contracts, and then gently withdraw the hand and bring the feet through the external parts. It is not improbable but we may then have the power of finishing the operation very speedily; but though the child were extracted, if the *uterus* did not act, as there would be a chance of the hemorrhage returning, the child should be withdrawn according to the degree of the contraction of the *uterus*, which will be known either by the application of the hand to the *abdomen*, or by the pain. Nor is there any occasion at this time for hurrying the delivery, as the hemorrhage usually ceases as soon as the child is turned, in consequence of the compression made upon the orifices of the vessels,

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by the inferior parts of the child. If the labour-pains are at all efficient at this time, it would be proper to leave the breech of the child to be expelled by them; but if they are not sufficiently strong for this purpose, assistance must be given, extracting by the feet during the continuance of a pain, not with force sufficient to bring it away, but with the view of aiding the power exerted by the pains, imitating also the pains in the manner of extracting. When the breech of the child has passed through the external parts, the delivery must be hastened, as there is then danger of the child being destroyed by the pressure upon the *funis*. Yet there is often a better chance of preserving the child, by leaving it to be wholly, or in a great measure expelled, than by extracting it with violence.

When the child is born, there is not usually any continuance or return of the hemorrhage, unless from the blood previously discharged, and locked up behind the body of the child, if the operation was slowly performed; but if the hemorrhage should return, the case must be managed, as will be recommended, when we speak of a hemorrhage with a retained *placenta*. If there be no hemorrhage, and the *placenta* be retained, we must be particularly cautious not to hurry it away; but in these cases it is commonly expelled with great ease,

case, and we have less occasion to be solicitous, because from its original attachment, it more readily admits of assistance if required.

Should nothing uncommon happen in the delivery, children will often be born alive, in cases of hemorrhage, which were extremely dangerous to the mother; and there have been instances in which the delivery being too long delayed, the child has been extracted alive, after her death. In all cases of danger, these in particular, the safety of the parent, and the preservation of the child, are events which give inexpressible satisfaction, and adorn the reputation of the practitioner.

S E C T I O N IV.

IT was before observed, that those hemorrhages which are occasioned by the separation of a portion or of the whole *placenta*, originally attached to any part of the *uterus*, except the *os uteri*, were not generally so dangerous as those last described. But if the separation be extensive and sudden, they will be equally alarming, the real danger may be as great, and the same method of pro-

proceeding, that is, artificial delivery, may be required. The separation may be occasioned by great violence from external accidents in the latter part of pregnancy; or in some intense fit of fainting; and sometimes the whole or a very large part of the *placenta* will be separated suddenly, and without any accident or symptom which could give warning or apprehension, that such an event was to be dreaded. The separation of the *placenta* may then happen previously to the commencement of labour, and it is not surprising that it should occur during any period or stage of a labour.

When sudden and violent discharges of blood happen to women with child, in advanced pregnancy, from external accidents, if the patient be kept in a cool and composed state, the discharge may cease, and without any return, the patient may go on to her full time, and be delivered by her natural pains, as if no such accident had happened; though the child will often be stillborn. Sometimes however the hemorrhage will return, or may commence in any stage of a labour; and our conduct must be regulated by the degree and probable consequences of it, and by the state of the labour when it is first discovered.

If an hemorrhage should come on in the beginning of a labour, or previous to it, and if the treatment must in any measure depend upon the
cause,

cause, it is necessary in the first place that we should decide whether the *placenta* be attached over the *os uteri*, or be casually separated. Before there is some degree of dilatation of the *os uteri*, be the discharge ever so profuse, and it may even at this time be excessive, I do not know that it is possible to tell with certainty whether it be the *placenta* or not. It may indeed be conjectured that the *placenta* is there attached, by the cushion-like feel of the *cervix*; and when the *os uteri* is somewhat dilated, the membranes may not be distinguished. Yet every practitioner knows how very different the state of these parts is in the beginning of labour, and how difficult it must be to distinguish between a firm *coagulum* of blood and the *placenta*; not to mention that so small a part of the *placenta* may be attached over the *os uteri*, that unless we could pass the finger completely round the circle, which is sometimes almost impossible, it could not be discovered. Taking therefore into consideration all the varieties occasioned by either of the causes of hemorrhage, and knowing that neither the performance of the operation, or the event, are materially different, whatever may be the cause, we shall not be deceived by attempts to make too nice distinctions.

From a casual or spontaneous separation of the *placenta*, an hemorrhage may happen in the beginning

ginning of labour, when the *os uteri* is not in any degree dilated; or when it is dilated to a third or half its extent, for example. If the discharge is such as to require some present measures for the relief of the patient, the common assistance for promoting the dilatation must be given, till we can feel distinctly the membranes of the *ovum*, which are to be ruptured. By the discharge of the waters the distention of the *uterus* will be lessened, the size of the blood-vessels of course diminished, and the hemorrhage in general immediately removed or abated. By the suppression or abatement of the hemorrhage, the action of the *uterus* will be rendered stronger, and the delivery often completed in a short space of time without further assistance, especially if the patient has before had children.

But if the hemorrhage should come on in the second stage of the labour, that is, after the full dilatation of the *os uteri*, and the rupture of the membranes, when the child's head has entered and is descending through the *pelvis*; if the discharge be of sufficient importance either to prevent the action of the *uterus*, or to bring the life of the patient into hazard, by its violence or continuance; then the assistance given must depend upon the progress which the labour has made, and the situation of the child, whether it shall be turned, as in preternatural presentations, or delivered with the forceps; or when neither

of these are practicable, and the exigency of the case justifies the operation, by lessening the head of the child; that is, the life of the parent must at all events, if possible, be preserved.

Hemorrhages of this kind are also sometimes combined with preternatural presentations of the child. Then little more will be required than what may be necessary on account of the presentation, except that it be sooner decided and more speedily performed; remembering also, that all operations in Midwifery are intended to remove, lessen, or prevent natural or adventitious danger, and not to add to that which before existed.

This method of proceeding, that of accelerating the labour by breaking the membranes, recommended in this kind of hemorrhage, usually answers the intention of moderating or suppressing the discharge, and of promoting the labour in such a manner, as to remove the danger. The only inconvenience to be apprehended is, that if the hemorrhage should continue in such a degree, as to occasion the necessity of artificial delivery, the operation would be rendered more difficult on account of the previous discharge of the waters. But in reply to this objection it may be observed, that if the *uterus* should contract round the body of the child, with so much force as to prevent the introduction of the hand, or the turning of the child, the purpose will pro-

probably be answered without the operation. But if there be not sufficient force exerted by the *uterus* for the expulsion of the child, then there will be no great difficulty in passing the hand into the *uterus*. It must however be acknowledged that this is sometimes amongst the cases for which no precise rule can be laid down, and in which the practitioner must act according to his own estimate of the danger and the difficulty.

S E C T I O N V.

IT is often a mortifying reflection, whilst we are conducting a patient through a labour, rendered uncommonly tedious by the inactivity or irregular action of the *uterus*, that we can foresee after the birth of the child, an unfavourable separation of the *placenta*, which cannot be prevented. All that art has dictated to be done, in this case, is to suffer the body of the child to be wholly expelled by the action of the *uterus*, after the head is born; or in some cases rather to retard its final expulsion, than to use any force for its extraction. Yet no method, nor any dexterity will be sufficient in all cases to prevent a troublesome, and sometimes a dangerous separation of the *placenta*; the proper management of which, often requires

as acute an intelligence, and as determined a conduct, as any circumstance which relates to the birth of the child. As the powers of the *uterus* or of the constitution are sometimes not exerted, or fail to answer the purpose; and as no woman can be properly or safely left till the *placenta* is excluded, it is necessary to consider this subject in a full and explicit manner.

From a review of what has been said on the management of the *placenta* by *Hippocrates*, or in the writings contained in his works, or about his time, it appears not to have been the general custom to divide the *funis* before the *placenta* was expelled; that if this was retained beyond the common time, no means, or very gentle ones, were used for the purpose of bringing it away; and that in cases of its retention, it was usual to introduce medicated substances into the *vagina*, and to give hysseric medicines for the purpose of its expulsion, which might happen on the fourth or fifth day, when it was in a putrid state. Whether this practice was gradually altered, or another hastily assumed, it is impossible to say; but it is extraordinary that *Celsus**, without expecting or

* Medicus deinde sinistra manu, leniter trahere umbilicum ita, ne abrumpat, dextraque eum sequi usque ad eas, quas Secundas vocant, quod velamentum infantis intus fuit: hisque ultimis apprehensis, venulas membranulasque omnes,
eadem

relying upon any natural efforts, for the purpose of ejecting the *placenta*, should have directed the practitioner to introduce his hand into the *uterus*, immediately after the birth of the child, to bring the *placenta* away, together with any *coagula* which might have been formed in the cavity of the *uterus*. These two contrary methods have in different times and countries, been adopted and recommended by succeeding writers, but unfortunately, the practice of *Celsus* prevailed more universally. The Arabians, though fond of the study of medicine, seem rather to have preserved, than improved or extended the learning which they gained, when they plundered the Eastern part of the Roman empire. But in the fifteenth century, which may be considered as the era of the revival of learning, Parè * published, among many valuable works, observations on the practice of Midwifery, under the title, of the Generation of Man *. Parè, who

eadem ratione manu diducere a vulva, totumque illud extrahere, et, si quid intus præterea concreti sanguinis remanet.

CELSUS, Lib. vii. Cap. xxix.

I may be permitted to observe, that many of the popular opinions, on medical subjects, are *now* the same in this country, as those entertained by the Roman writers. It is probable that they were first introduced by those Physicians and Surgeons who attended the Roman army in Britain, and not acquired by the study of their writings.

* Not having the French edition of Parè, I transcribe the following from the Latin translation. *Molli si fieri potest umbi-*

had an understanding to see, and to profit by the errors of others, seems desirous of avoiding all extremes; for with an injunction not to leave the *placenta* behind, he recommends in strong and repeated terms, the necessity of extreme caution, not to use violence, lest we should invert, or do other injury to the *uterus*; and there is no doubt but the opinion of so eminent a man must have had its influence upon the practice and writings of others, particularly of those of his own country. In the latter end of the last, and the beginning of this century, *Ruysch* was in high reputation as an anatomist at *Amsterdam*, and he was empowered by the Magistrates to inspect and regulate the practice of Midwifery throughout that city. *Ruysch* had industry and great abilities; and his pursuits in anatomy, and his office, as president of the Obstetric College, leading him to the knowledge of many bad consequences which followed the common method of managing the *placenta*, particularly the inversion of the *uterus*, he laboured the point with great knowledge and ingenuity in many parts of his works; discountenanced the practice, and forbade the *placenta* to be extracted hastily, choosing

umbilici tractu; quod si sic non licet, obstetrix oleo inunctum manum, *blande* in uterum immittat, ducem secuta umbilicum, sicque comprehensas, si adhuc hæreant utero, *leniter* hac et illac concutiat, et sic concussas, *leniter* extrahat; *non autem violentius* educat, ne unà sequens uterus procidat.

clearly

clearly to run the hazard of the evils which might follow the imperfections of nature, rather than of those which would be incurred by the harsh and violent methods then in use*. For many years after the time of *Ruyſch*, the practice of *Ceſus* was followed in this country, by ſome even down to this time, but not univerſally; for in a large manuſcript, written on the ſubject of Midwifery by Dr. *Percival Willoughby*, Phyſician at *Derby*, in the time of the Civil War, a copy of which came into my poſſeſſion by the kindneſs of my very able and intelligent friend, Dr. *Kirkland*, there is this obſervation: *the afterbirthe oft commeth of itſelfe, yet it is not amiſſe to aſſiſt nature for the producing of it. There bee ſome midwiues, that never offer to fetch the afterbirthe, but ſuffer nature to expell it, and their women have done well.* The practice of extracting the *placenta*, immediately after the birth of the

* Prudentius ergo relinquere placentam, donec natura hanc ſeparat, aut donec laxata, magisque libera, manu evelere hanc detur, quam lethali feſtinatione occidere ægram. Putetne quis, boni quid contigiffe trucidatæ mulieri, quod mortua fit ſine placenta? Quæ cum illa poterat vixiſſe! RUYſCH. Adverſ. Anat. Dec. Secunda.—Some allowance is to be made for the arguments of *Ruyſch*, which were intended to overſet the bad practice of his time. For if the *placenta* was to be left entirely to nature in all caſes, there would not be wanting many examples of miſchief and fatal conſequences from the very method which he recommends.

child,

child, was nevertheless common in this country. It was taught in the first school of Midwifery established in *London* by *Chapman* in 1733; by Sir *Richard Manningham*, in the public establishment set on foot for the purpose of teaching Midwifery, in the *St. James's* Infirmary, in the year 1738; and by *Smellie*, who I think came to *London* in the year 1742. Soon after this time, in 1746, Dr. *William Hunter* began to give lectures in anatomy; as an appendage to which, he added a certain number of lectures, on the anatomy and physiology of the gravid *uterus*, interspersed with many practical observations. With a mind composed and finely turned for observation, with a judgment exceedingly correct, and with unwearied application, Dr. *Hunter* soon acquired very high and deserved reputation; and the great character he established in the practice of Midwifery, for which his person and manners were admirably well calculated, and in which he was soon and very much engaged, gave a more than usual authority to what he advanced on this subject. * Being an associate with Dr. *Sandys* for the care of the lying-in department in the *Middlesex* Hospital, he proposed to Dr. *Sandys* that they should try the event of leaving the *placenta* to be expelled by the action of

* This account I had from Dr. *Hunter* himself.

the *uterus*, without attempting to give any assistance. After much consideration, and some delay, from the dread of censure, they agreed upon the trial; and in the first instance, it remained twenty-four hours. No ill consequence however followed; and the trials being repeated with success, it became a very frequent, and almost general rule to leave the *placenta* to be expelled without any assistance. Several untoward and some fatal accidents followed this practice, and it was altered; at least it became necessary to admit many exceptions; and after a variety of changes and observations, I believe we are at length arrived at a state of practice, with regard to the management of the *placenta*, that will with difficulty be improved; a practice founded on common-sense and observation, that the *placenta* ought to be, and is generally expelled by the action of the *uterus*, in the same manner as the child; feeling ourselves at liberty, and called upon to give assistance, only, when that action is not equal to the purpose.

In the course of ten or twenty minutes after the birth of the child, sooner or later, according to the condition of the patient at the time of her delivery, the action of the *uterus* returns for the purpose of expelling the *placenta* and membranes, which collectively have the common name of *Afterbirth*. This action is indicated by pains in all respects like

those the patient had before the child was born, excepting their degree. When these pains come on, it is customary to take hold of the *funis*, by which if we pull slightly, the evacuation of the *placenta* out of the *uterus* will be forwarded, without the risk of doing any kind of injury to the *uterus*. The *placenta* and membranes formed a complete lining to the *uterus*, but the *placenta* coming away first, and then the membranes, the whole is usually expelled in an inverted state; but not always, as the separation of the *placenta* is in some cases so speedy, that it drops into the *vagina*, and pushes the membranes before it. But though the *placenta* is generally expelled in a short time after the birth of the child, and with the return of a few pains, it is sometimes retained, on account 1st. of the inaction of the *uterus*; or 2d. of the irregular action of the *uterus*; or 3d. of a schirrous adhesion of the *placenta* to the *uterus*. It may be retained beyond the usual time, without any hemorrhage; but whenever there is a discharge of blood, the whole or a portion of it must have been previously separated; and the hemorrhage may continue, or increase, or cease and return in these cases, till the *placenta* is extracted or expelled. Every discharge of blood at that time, properly speaking, is an hemorrhage, but to this term, together with the other parts of the definition, one annexes the idea of such a loss of blood, as by its

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continuance or degree, may be apprehended to occasion danger.

A very long continued, and strenuous exertion of all the powers of the constitution, is often required for the expulsion of the child. These powers, though generally adequate to that effect, sometimes fail before it is accomplished. But experience having shewn, that difficulties, to our apprehension insurmountable, are to be overcome by the natural efforts, both reason and humanity discourage all hasty determinations to pursue such measures, as may affect the safety of the mother or the child. But as there is a leaven of imperfection in all human actions, animal as well as moral, we may sometimes be led by the most commendable motives, to defer that assistance, which any particular case may require, so long, that after the birth of the child, the patient may be in such an exhausted state, and the *uterus* so completely divested of all power of further action, that it is neither disposed nor able to separate or eject the *placenta*; or to support the necessary consequences of her delivery. The mere debility of the patient, is therefore often a reason why we ought to wait, without making any attempts to hasten the separation or extraction of the *placenta*; as an immediate separation, natural or artificial, might be an addition to the danger which she was before in.

Sometimes also, when a labour has gone on with great activity, there is from the moment of the expulsion of the child, a total inaction of the *uterus*, for which no reason can be assigned. But if the time which passes between the birth of the child and the expulsion of the *placenta*, be employed in composing the patient's mind, in cooling her when overheated, or in recovering her when much fatigued, or wearied with the preceding circumstances; in short, in restoring her to her natural state, we may reasonably expect that the *uterus* will make its efforts to throw off the *placenta* in the usual manner, though more time may be required. But during this time of waiting, should an hemorrhage come on, we must apply ourselves to the use of those means, by which the separation and exclusion of the *placenta* may be forwarded; there being as justifiable a reason for the extraction of the *placenta*, in a case of hemorrhage, when that is retained, as there was for the extraction of the child with the same circumstance. But every discharge of blood is not sufficient authority for the introduction of the hand, or for the artificial extraction of the *placenta*, as some degree of hemorrhage very frequently accompanies both its separation and exclusion. We must therefore form a judgment of the necessity of extracting the *placenta*, by the opinion we entertain of the hemorrhage,

rhage, being so profuse as to endanger the life of the patient by its continuance or probable increase. Sometimes also *coagula* are discharged in considerable quantities, which from their appearance may be suspected to have been formed long before labour, by an effusion of blood into the *ovum*, from the rupture of some vessel which ran over the surface of the *placenta*; which *coagula* do not indicate any danger.

When the *placenta* is not separated or ejected in due time after the birth of the child, with or without an hemorrhage, means must be used for the purpose of its exclusion; and the most gentle must be first tried, as by giving some actually warm and temperate cordial, which may renew the disposition in the *uterus* to act, and then by pulling moderately by the *funis*, to try whether it is disposed to come away. As the term *moderate* has no precise meaning, and what I call violent, may by another be called moderate, we will say that so much force is on no account to be used in pulling by the *funis*, as to incur the risque of tearing it from the *placenta*, or of inverting the *uterus*; and that it is better to make it a general rule to prefer the introduction of the hand into the *uterus*, to separate and bring the *placenta* away, than to have the chance of either of those accidents. It is however to be observed, that when the hand is introduced

introduced for that purpose, there is not always a necessity of acting; for the very irritation thereby occasioned, will often excite the *uterus* to its natural action, and the *placenta* be both separated and expelled, as will be recollected by every one accustomed to this operation. But the hand ought never to be introduced into the *uterus*, except as a matter of necessity, and then with the utmost care and tenderness; and when introduced, should never be withdrawn, till the end for which it was introduced, is, if possible, accomplished.

To promote the separation and exclusion of the *placenta*, the application of the half-closed hand to the *abdomen*, so as to make a moderate pressure, is sometimes of use, by aiding the *uterus* in its contraction; but this assistance cannot be given in the worst cases, that is, when the *uterus* is not at all contracted, or contracted irregularly. The respiration of the patient has also an evident effect upon the *uterus* and *placenta*, of which we shall be sensible, if we retain the *funis* in our hand, in the act of expiration, when it descends, and in the act of inspiration, when it is somewhat retracted. By supporting the *funis* with just so much force as will prevent its retraction in the act of inspiration, we shall soon be sensible that the *funis* is lengthened, which will prove that the *placenta* is descending; and the purpose of extracting the *placenta* will be

be completed, without the use of any other means: but this method requires much time and attention. Sometimes also the exclusion of the *placenta* may be favoured by pressing it, with one finger carried along the *funis*, towards the *sacrum*, in such a manner, as to bring down an edge instead of the whole mass.

In all cases of dangerous hemorrhage, when the *placenta* is retained, it was said to be equally justifiable and necessary to extract the *placenta*, as it was to deliver the woman of her child under the same circumstances. But this general rule requires explanation, and some skill in the application. When there is a present hemorrhage, so important as by its violence or continuance to threaten danger, the *placenta* ought to be immediately extracted. This is not an opinion, but a rule of practice. But if there has already been an hemorrhage, so profuse as to occasion danger; and the common consequences of loss of blood, as fainting and the like, have already followed; the *placenta* ought not to be extracted, nor the patient disturbed, nor any change made, till she is revived from her extreme debility; as the danger would be thereby increased, and the patient die, during or immediately after the operation, as I have seen and known in too many instances. In other words, the extraction of the *placenta* is to be con-

considered as a remedy for a present or apprehended hemorrhage, but not for one which has already happened.

In cases also in which there is no hemorrhage, if the *placenta* is not ejected, or if no efforts are made by the *uterus* for that purpose, a time will come, when we must determine upon its extraction, or leave it behind; and the latter being unsafe and unjustifiable, the mere retention will be sufficient authority for us to extract it. Upon this point there can be no dispute, except as to the time, and we will say, leaving the matter somewhat at large, that if the *placenta* is not expelled at the end of two hours from the birth of the child, that it ought to be extracted. I can however recollect many examples of a retained *placenta*, without a hemorrhage, to which I have been called within twelve or even twenty-four hours after the birth of the child, in which the *placenta* has been very easily managed.

Whenever we have determined upon the necessity and propriety of extracting the *placenta* by art, we must proceed in this manner. The patient being put into a convenient position, and every thing in order, the *funis* which is our guide, is to be held with a moderate degree of tightness in the left hand. The external parts are usually in such a state as not to require any dilatation; but if that should be necessary, it must be done
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tenderly, and in the manner before directed. When the hand is in the *vagina*, the *funis* is to be slowly followed into the *uterus*, which though in a state of total inaction before, may then be irritated to a sufficient degree of action, to separate and expel the *placenta*, without any further assistance on our part. But if the spontaneous action of the *uterus* should not come on, we must proceed with the hand to the *placenta*, which may either adhere with its whole surface, or it may be partly separated, or even wholly separated and lying loose in the cavity of the *uterus*. Should there be a total adhesion, we must search for the edge of the *placenta*, on the outside of the membranes, cautiously distinguishing between the *placenta* and *uterus*. When the edge of the *placenta* is raised, the further separation must be made with the blunt ends of the fingers, and the closer and firmer the adhesion, the slower the separation is to be made; not proceeding rashly or affecting dexterity, but giving our heads time to guide our hands, as if the operation was performed under inspection. By slow proceeding, and by dwelling a short time, if we meet with more than ordinary difficulty, the separation will be perfected; or when the greater portion is loosened, if we grasp it slightly in the hand, and bend it backwards, the remaining part will often peel from the *uterus*,

without trouble. Whether on the introduction of the hand we found the *placenta* separated, or whether it was necessary to separate it, we are not to withdraw it immediately, but to wait till the *uterus* begins to contract, and then to withdraw the hand including the *placenta*, more quickly or slowly, according to the degree of contraction; for the hemorrhage may not be occasioned because the *placenta* was retained, but because its retention, or some other cause, hindered the contraction of the *uterus*. If there be no action of the *uterus* whatever, it is of service to throw the fingers gently backwards against the sides or *fundus* of the *uterus*, to irritate and bring on its action, previous to the withdrawal of the hand. When the *uterus* is perceived to act, then gently withdraw the hand, till the *placenta* is brought into the *vagina*. Whatever motive induced us to separate the *placenta*, it ought to be suffered to abide in the *vagina*, till the patient is composed, and recovered from her fatigue, and till the *uterus* has had time to contract in such a manner, as to prevent the return of the hemorrhage, at least in a dangerous way. For many years I have made it a rule to leave the *placenta*, naturally or artificially separated, to abide in the *vagina* one hour, after it was voided out of the cavity of the *uterus*; and I am convinced by this method, there is an infinitely less chance of an ensuing

ensuing hemorrhage, on its coming or being brought away, and less afterpain; as the blood discharged in consequence of the separation of the *placenta*, usually forms into *coagula*, which are collected in the membranes as in a net, and the *uterus* is left perfectly void of any thing which can become the cause of any considerable pain.

With regard to those cases in which the *placenta* is retained by the irregular action of the *uterus*, there is generally some degree of hemorrhage, and often a very profuse one; though sometimes there is no discharge, or none of importance, only a retention of the *placenta* beyond the common time of its expulsion. When all the parts of the *uterus* act with equivalent force at the same time, the united action contributes to the expulsion of whatever may be contained in its cavity. But if one part, the inferior for instance, should act, when the other is at rest, a contrary effect might be produced. The forms which the *uterus* may assume in consequence of this irregular action, are innumerable, but the most common is the longitudinal, which is produced when all the parts, except the *fundus*, act; or the hour-glass form, when the middle of the *uterus* only acts, by which it is divided as it were into two chambers or cavities. When it was the custom to bring away the *placenta* immediately after the birth of the child, two

reasons were assigned for the practice; first, that it was an extraneous mass, which became pernicious every moment it remained; and secondly, that if not immediately extracted, it would be almost impossible to bring it away, the *os uteri* closing in such a manner, as absolutely to prevent the introduction of the hand for the purpose of extracting it*. Both these opinions are proved to be groundless, for the *placenta* may remain many hours without doing any mischief; and the opinion of the *os uteri* closing so soon after the birth of the child, is without foundation, as that seldom or never happens: what has been esteemed the natural closing of the *os uteri*, being in reality an irregular contraction of some portion of the *cervix*; at least we are assured that no harm and little additional difficulty arises from it.

When the *uterus* is contracted thus irregularly, as the *placenta* cannot be expelled, it must be extracted by art, whenever, on account of a hemorrhage, or of the time that is past, it may be thought expedient or necessary. There is no way

* Scire enim est post natum infantem, in utero nullum reperiri tale os ut olim fuerat: sed ita omnino se res habet, ut in bursa nummaria, quæ loris transmissis constricta, rugosum os format; laxatis autem hinc vinculis, ubique æque lata est et expansa. RUYSCH. Advers. Anat. Dec. Secunda.

The tenth chapter of the second Decade is full of useful observations regarding the management of the *placenta*, given in very honest and animated language.

of judging of this kind or degree of contraction, unless by the uncertain information we may acquire by the application of the hand to the *abdomen*, till we introduce our hand into the *uterus*. Before this operation it is always proper to try whether the *placenta* may not be disposed to come away by any of the gentle means before recommended. On the failure of these, and being fully convinced of the necessity, the hand must be conducted in the manner before mentioned, till we come to that part of the *uterus* which is partially contracted. The hand must then be reduced into a conical form, in the way directed for the dilatation of the *os uteri*, or external orifice. Should the spasm be in such a degree as to make a perfect closure of the *uterus* round the *funis*, one finger must be first insinuated along the *funis*, and this being turned with a femirotatory motion, will soon make room for a second, and so on till all the fingers, in a conical form, may be admitted. The dilatation is sometimes to be made in opposition to a very firm contraction, but it must be done steadily and resolutely. Before the hand is passed beyond the contracted part, this must be amply dilated, otherwise it will clip round the wrist, and impede the subsequent part of the operation. When the contracted part is amply dilated, the hand must be carried forwards into what may be called

called the upper chamber of the *uterus*, in which the *placenta* is contained. Whether this be separated wholly or partially, or be yet adhering, we must proceed according to the method before mentioned. Immediately upon the separation of the *placenta*, the hand containing it is to be drawn out of the upper cavity, to that part of the *uterus* which was before so closely contracted, and held there, till by the pressure behind, we are sensible of the action of the *fundus*. The hand containing the *placenta* is then to be withdrawn by slow degrees, till it arrives in the *vagina*, where the *placenta* must be suffered to remain for an hour; or we may wait till it is wholly expelled by the pains, in order to avoid the hazard of a subsequent hemorrhage.

When the *placenta* is either expelled by the action of the *uterus*, or extracted by art, it should be a general rule to apply the hand to the *abdomen* afterward, that we may be assured the *uterus* is not inverted.

The natural attachment of the *placenta* to the *uterus* is of such a texture and kind, as very readily to admit of separation. But if that part to which the *placenta* adheres, should be in a scirrous or morbid state, the *placenta* will partake of the disease. On the examination of the *placentæ* of different women, there are not unfrequently found morbid
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appearances, some being disposed to a putrid, others in a schirrous or cartilaginous state; while in others there is a degree of ossification in the vessels, and sometimes perfect concretions. The difficulty of the separation will depend partly upon the *placenta* itself, and partly upon the state of the *uterus*. When there is found on the introduction of the hand into the *uterus*, an uncommonly firm adhesion of the *placenta*, a perfect separation will be extremely difficult, and perhaps sometimes impossible, without the hazard of doing injury to the *uterus*. There is no security in these cases, but by taking time in the operation, confiding chiefly in slow proceeding, both for the completion of our purpose, and the avoidance of mischief. It has been said that it is more justifiable to leave a portion of the *placenta* behind than to continue very strenuous efforts to bring the whole away, as these may give unbearable pain, and become the cause of immediate or subsequent mischief. It must however be acknowledged that it is always a very desirable thing, to bring away the *placenta* wholly and perfectly, not only for the satisfaction of friends, but for the real good and interest of the patient. Even the membranes should be managed with caution; for though a portion or the whole of these might be left without danger, they occasion a *fætor* in the discharges which creates a suspicion of disease.

disease. But without meaning to give authority to negligence or misconduct, we may suppose a situation in which we must submit to some evil, and in which all that is in our power is, to chuse the least. There can then be no doubt but that it is a less evil to leave a portion of the *placenta* behind, than to do any positive injury to the *uterus*, in striving to bring it away. For it has been found when a portion of the *placenta* was left behind, that the hemorrhage has not returned; and that this portion far sooner decays, or is more readily digested or expelled, than the whole; for I once saw an instance of a whole *placenta* retained till the fifteenth day after the birth of the child, and then expelled with little signs of putrefaction except upon the membranes, the whole surface which had adhered, exhibiting marks of a fresh separation. It is a conclusion generally made, though not always warranted, that if a woman dies with a portion of the *placenta* retained, that her death ought to be attributed to it; yet it should be considered that there may have been previous disease in the *uterus*, and that the event may have been really occasioned by violent, though unsuccessful attempts to bring it away. Sometimes the danger of these cases is known to the practitioner only, who is obliged to act according to exigencies, for which he may not be particularly prepared; but if he has before acquired

quired a just knowledge of the principles of the art, determines not rashly, and proceeds slowly, he will not do any thing for which he can be justly blamed, and will generally be successful.

The *funis* is commonly inserted about one third of its space from the edge of the *placenta*, sometimes in the center, and now and then the vessels branch off before it reaches the *placenta*; and the ease or difficulty with which it is brought away, somewhat depends upon the insertion. The chance also of tearing away the *funis*, rests chiefly upon the force used to extract the *placenta* by it; but if it is inserted fully into the *placenta*, and is in a sound state, the force which it can bear, is infinitely greater than can be exerted without the hazard of inverting or doing other injury to the *uterus*. But if the *funis* is in a putrid state, or if the vessels branch off too soon, it may be torn away with a very small degree of force; and in the latter case, it can only sustain what a single branch of a vessel can bear. Hence in a cautious extraction of the *placenta*, one is sometimes sensible of a sudden yielding or jerk in the *funis*, which, if the same force be continued, will be repeated, till at length the *funis* comes away, and the *placenta* is left in the *uterus*. Great circumspection and slow proceeding will usually prevent this accident; but if it should happen in our own practice,

or we should be called to assist others, we must determine whether the case will allow of further waiting, or whether there be a necessity of bringing the *placenta* away immediately. If there should be occasion for the latter, we may consider the inconveniencies produced by the want of the *funis*; which, when it remains, serves as a guide to conduct the hand, and helps moreover to keep the *uterus* steady. The former of these will not be of much consequence to a person accustomed to the operation, and the latter will be lessened, if an assistant makes a judicious pressure upon the *abdomen* with both his hands. Some disadvantage will necessarily arise from the accident, it is therefore prudent to avoid it, when in our power; but the importance of the disadvantage produced by the separation of the *funis*, has, I believe, been much over-rated.

SECTION

S E C T I O N VI.

THE hemorrhage which follows the expulsion or extraction of the *placenta*, may be a continuation of that which came on before the birth of the child; or between the birth of the child and the expulsion of the *placenta*; or it may be unconnected with either of these, but merely a consequence of the exclusion of the *placenta*. This has usually been described by writers as an immoderate flux of the *lochia*, but is with more propriety arranged under the class of hemorrhages; and though it is not so dangerous as either of the varieties last described, it is often alarming, and, under particular circumstances, has sometimes proved fatal.

The discharge of blood which follows the separation and exclusion of the *placenta*, varies in different women, being in some very small, and in others there is, after every act of parturition, a disposition to a very profuse hemorrhage, which suddenly reduces the patient into a frightful state. It is a popular opinion, that the greater these discharges are at the time of delivery, the safer women will be, from the chance of diseases during childbed; and this opinion very much lessens the

terror of the bye-standers, when discharges come on with great profusion. But the practitioner who knows the possible effect of sudden and violent hemorrhages at this time, cannot feel at his ease, though supported by the general experience of their being very seldom dangerous. Nor is the opinion true, that the greater the discharge, the safer the patient will be; for whatever weakens the patient extremely, must render her more liable to diseases of various kinds.

It has often been a matter of great surprize to me, when I have seen a patient bear a sudden discharge of an enormous quantity of blood, on the coming away of the *placenta*, without fainting, or shewing any signs of the common consequences of great loss of blood; but it may be explained in this manner: Should every drop of blood which circulates in the *uterus*, be discharged in an instant, it would be of no consequence to the patient, the very existence of the *uterus* not being necessary for her life. When all this blood is discharged, if the *uterus* should contract speedily, so that the vessels should be reduced to a small size, there would not be a continuance or return of the hemorrhage, and the patient would exhibit no signs of suffering from that which had happened. But after the discharge of the blood contained in the vessels of the *uterus*,
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as before stated, if there should be no contraction of the *uterus*, then the vessels remaining of the same size, and the communication between the body and the *uterus* being preserved open, as in pregnancy; the vessels of the *uterus* would be replenished from the constitution, and the same effect would be produced in the patient, as if it was really lost. Should then this second quantity of blood supplied to the *uterus* be discharged, and another be claimed from the constitution, then, according to the quantity demanded, and the number of times the demand was made, would of course be the danger of the patient. In some cases the hemorrhage does not follow the extraction of the *placenta* immediately, but comes on after a certain time; and then it may be supposed that the communication between the body and the *uterus* was closed, but not being confirmed, was opened again by some effort too soon made, or more violent than the situation of the patient could endure. These circumstances point out very clearly the necessity, in the management of uterine hemorrhages, of ever remembering, that the danger attending them is lessened, and the safety of the patient secured, only, by a proper contraction of the *uterus*. Hence in hemorrhages of this kind, however vehement, the accession of uterine pain immediately proclaims that the danger is past.

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With respect to this variety of hemorrhage, two things are to be considered ; 1st. by what method or means it is to be prevented ; 2d. how it shall be remedied, when it does exist.

When the hemorrhage depends upon the imperfect or irregular action of the *uterus*, it may not be in our power to regulate these ; but as far as relates to the force used in the separation, or hurry in the extraction of the *placenta*, we may always act reasonably and calmly, and proper conduct will generally insure success. It was before advised to leave the *placenta* in the *vagina* for one hour after its exclusion from the *uterus*, in common cases ; unless it was sooner expelled by the natural efforts. Objections have been raised to this, because it confines the patient to an uncomfortable situation for a long time ; and it is said to be cruel to leave her friends under anxiety, with the delivery incomplete, when we have the power of readily bringing the *placenta* away. Now, if we are speaking of a case of real or presumed danger, the argument of uncomfortableness is not to be put in competition with a conduct, on which the increase or diminution of that danger may turn. Nor does the censure of a good action make it degenerate into a crime, or convert that which is in its own nature honest and intelligent to cruelty. On the contrary, it may be the height of tenderness in me to encourage

rage the patient to bear a small degree of present pain or inconvenience, by which her safety is insured, rather than by an officious interference, to add to the hazard, through the solicitation of those who are not qualified to judge. When the *placenta* is brought into the *vagina*, we have then the absolute command of it at our pleasure; but the very ease with which it could be brought away, is the reason why it should be suffered to abide, as it proves that there is no natural contraction of the parts for its exclusion. In what other manner a *placenta* remaining in the *vagina* may contribute to the prevention of an hemorrhage, except that by the irritation made upon the *os uteri*, it urges the *uterus* to act, it may be hard to say; though I am convinced of the benefit thence derived. Nor have I been satisfied with leaving it one hour in that situation, when attending patients who have been prone to an hemorrhage in former labours, but have prolonged the time to two or more hours, unless it should be in the mean while ejected by the pains, which proving the action of the *uterus*, would give an assurance of safety. Moreover, after waiting so long, I withdraw the *placenta* very gently, not increasing the force on account of every little obstacle, but demurring and waiting longer. Even after the *placenta* is wholly excluded, if the membranes stick, I wait yet longer, and proceed

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more slowly, knowing that a few minutes occasion a difference between the loss of one, and seven or eight ounces of blood, which sometimes may be of the utmost importance.

When we have the management, or are called to cases of preceding or present hemorrhage, the *placenta* being extracted, it should be a general rule to examine the patient, to be sure that the *uterus* is not inverted; or perhaps by slight irritation about the *os uteri*, to bring on its action. Then all the means before recommended for the suppression of hemorrhages are to be put in practice, speedily and strenuously; and we are also to endeavour to promote the action of the *uterus*, if at rest, or to strengthen it if feeble, by moderate pressure upon the *abdomen* with a very cold hand.

On the application of the hand to the *abdomen*, it is sometimes clear, from the volume of the *uterus*, though contracted, that there are large *coagula* contained in its cavity. We have been directed by gentle dilatation of the *os uteri*, to give these an opportunity of coming away, or even to introduce the hand for that purpose; as by their continuance, they are supposed to keep up the distention of the *uterus*, and to occasion the hemorrhage. This method may answer the purpose for which it is recommended, but it is not necessary; for I have never practised it, nor ever troubled myself

myself with the state of the *uterus*, unless it was inverted, after the *placenta* was brought away; but have left whatever *coagula* it contained, to be expelled by its own action.

The fainting which follows hemorrhages was considered as a remedy provided, or an effect produced for their suppression. It was also said that the medicines given, or the means used, did service, according to the degree of chillness they occasioned, and the slackness of the circulation which followed. We were cautioned not to remove this faintness by the exhibition of cordials, lest with the return of the circulation, there should be a renewal of the hemorrhage; at least till we had given sufficient time for the contraction of the vessels and other circumstances to take place, before the patient revived. But when we presume those effects are produced, nourishment and mild cordials may be given in small quantities often repeated *. The *Julap. Vitæ* of *Bates*, which is composed of warm wine and the yolks of eggs, with the addition of a few drops of oil of cinnamon, is

* *Chapman* mentions a compliment paid him by *Sir Richard Blackmore*, in a case of this kind, which shews great accuracy of distinction. If, said *Sir Richard*, you had used less cold applications, this patient would have died from the loss of blood; and if you had continued them longer, you would have extinguished the powers of life.

is an admirable medicine on these occasions ; but I must confess that the best and most general cordials are very cold air and cold water ; and the strongest stimulant in extreme cases, is to sprinkle the face repeatedly with cold water, which the patient, sensible of the benefit she receives, will often require to be done with great earnestness.

On the same ground on which these medicines are advised, opiates were esteemed improper, which certainly ought not to be given too freely when the patient is reduced to a state of great weakness. Above all, she is not to be disturbed, or raised to an erect position, but the small portion of the principle of life is to be carefully husbanded ; and there is often a power of living in a quiescent state, or in a recumbent position, when the patient would be destroyed by the least exertion. Whether an hour or a day be required for this purpose, after a profuse hemorrhage, the patient ought not to be raised, or even moved, before she is quite revived, and then with the utmost care and circumspection.

It is lastly to be observed, that in the violent and pertinacious head-ache, and other nervous complaints, which follow profuse hemorrhages, and which sometimes continue for many weeks, it will be of great service to procure two or three stools every day previous to the exhibition of the *bark*, though the patient be in a very weak state. For the

the relief of the head-ache, cold applications to the temples, as white of egg mixed with powdered Bay Salt, or crude *Sal Ammoniac*, keeping the feet and legs warm, will sometimes also be very useful.

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