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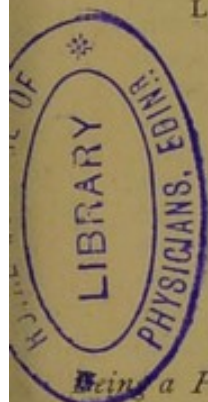
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ON THE  
PREVENTION AND TREATMENT  
OF  
HÆMORRHAGE AFTER DELIVERY.

BY  
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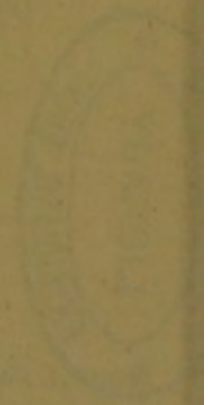
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## ON THE PREVENTION AND TREATMENT OF HÆMORRHAGE AFTER DELIVERY.

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No circumstances can occur in medical or surgical practice calling more imperatively for the exercise of the highest qualities of the medical attendant, than those in which the midwifery practitioner may at any moment be placed when suddenly called on to treat a case of violent flooding. Nor can the power of the obstetric art be more strikingly illustrated than when it enables us to rescue from the tomb a patient who is pulseless, unconscious, and collapsed from hæmorrhage after childbirth. Therefore, I think that it would be difficult to find any questions of greater importance that could occupy the attention of the Obstetrical Section of the British Medical Association than the prevention and treatment of flooding. And, although both these subjects have been discussed by obstetric writers in every age, from the dawn of our art in the Hippocratic treatise *Περὶ Γυναικείων* down to the present day, their further consideration is not unnecessary, as long as women still occasionally die from hæmorrhage after labour, despite all treatment.

With the advancement of midwifery, this lamentable accident has gradually become less and less frequent, and we have every reason to anticipate that in the more perfect obstetric practice of a not distant future its occurrence will be entirely unknown. To contribute towards this end, it behoves all who have extensive opportunities of trying different methods of preventing or arresting flooding to record their experience; for it is only by the accumulation of such individual experiences, that conclusions of practical value can be ever arrived at on disputed points in the practice of our art.

Within the last few years, several new methods of treating *post partum* hæmorrhage—such, for instance, as the uterine injection of solution of perchloride of iron, tincture of iodine, and hot water, or the hypodermic employment of ergotine, etc.—have been introduced into practice and each advocated as the remedy in all cases of this kind; whilst other plans of treatment which have not the recommendation of novelty are unduly neglected. Therefore, recognising the value of each



of these in appropriate cases, and not believing in the universal applicability of any of them, I shall briefly submit to the Association my experience of some of the methods, old and new, which I have employed in hospital and private practice for the prevention or suppression of flooding.

At the present time, there appears to be a great tendency to resort to heroic treatment in all cases of so-called hæmorrhage. It should not be forgotten that a certain loss of blood is a normal, and within due limits a beneficial, accompaniment of the termination of labour. What these limits are cannot be rigidly defined, as they depend on the condition of the patient in each case. But, in the majority of instances, a greater loss can be borne with impunity than seems to be generally supposed by those who resort to ergotine, or perchloride of iron, or the injection of hot water into the uterus, on the least appearance of hæmorrhage after delivery. In saying this, however, I certainly have no wish to depreciate the value of any of these remedies, or, by underestimating the gravity of the accident under consideration, to encourage remissness in its recognition and treatment.

*Causes of Post Partum Hæmorrhage.*—In considering the prevention and treatment of this complication of labour, its causes must be referred to, and these vary widely. Inertia of the uterus, although the most frequent, is almost equalled in this respect as a cause of flooding by an intermittent action or alternate contraction and relaxation of the muscular fibres, so that at one instant we can feel the womb in what should be its normal condition immediately after labour—viz., as hard as a cricket-ball under our hand—and a moment later it relaxes, and becomes impossible to grasp.

The uterine action may be neither deficient in force nor intermittent, and yet fatal hæmorrhage may occur from the contraction being irregular or partial. The os and cervix may be firmly contracted, whilst the body is distended by hæmorrhagic effusion. Or we may have irregular uterine energy exhibited in the form of so-called hour-glass contraction. In one remarkable case, I have seen the uterine cavity thus divided into several distinct chambers, each filled by the effused blood.

I refer to this point merely to show that cases of hæmorrhage from irregular and generally too forcible uterine action obviously require very different treatment from the more frequent atonic powerless state of the uterus, although both may be productive of this accident.

Laceration of the cervix uteri is an occasional cause of severe *post partum* hæmorrhage. In my notes of over four thousand midwifery cases in hospital and private practice, only two cases of this kind are recorded. But, there is reason to anticipate that, when the practice recently advocated of applying the forceps before the natural dilatation of the os uteri becomes generally adopted, as seems likely, the next generation of midwifery practitioners will thenceforth have an ampler opportunity of witnessing this accident than was the case in the practice of their possibly slower but certainly safer predecessors in the obstetric art.

Some of the other causes of flooding, such as the mismanagement of the third stage of labour, especially by the neglect of proper pressure over the uterus, or by attempts to hurry away the placenta by traction on the cord (which should never be touched for this purpose), and the causes of secondary hæmorrhage, have not been here referred to, being far too important to be summarily discussed in a short practical paper on *post partum* hæmorrhage.



In most instances, flooding is a preventable accident, and should be comparatively unfrequent in first confinements. Thus, of eighty-nine cases of this kind in the Dublin Lying-in Hospital, in only twenty-four instances were the patients primiparous. Moreover, the risk of this occurrence in any case is almost invariably in exact proportion to the number of the patient's previous confinements.

Having, therefore, in the first instance, ascertained the patient's obstetric history, we may prevent her from again suffering from hæmorrhage by prophylactic treatment suitable to her constitutional state. Thus, if she be plethoric, saline purgatives, restricted diet, avoidance of stimulants, and free exercise must be enjoined for some time before labour. If, on the contrary, as is more generally the case, she be anæmic or broken down by repeated childbearing, there is no better prophylactic of hæmorrhage, as I have found by experience, than a course of the old-fashioned tincture of the perchloride of iron, given in large doses for the last two months of pregnancy.

Flooding is occasionally obviously connected with the hæmorrhagic diathesis; and this condition, although rare amongst the well-fed upper and middle classes, is not uncommon amongst the half-starved wives of the poor in the humid atmosphere and rain-saturated soil of the city of Dublin. I have met with several cases of flooding occurring in patients who suffered from a general tendency to hæmorrhage from all the mucous surfaces, the gums, the nose, and stomach, in whom the most trifling operation or the slightest scratch gave rise to considerable bleeding, or the least bruise to extensive ecchymosis, and whose catamenia were either unduly frequent or excessive without any active disease to account for it. It may be added, that those who suffer from menorrhagia are almost invariably more liable than others to hæmorrhage after delivery. Therefore, whenever we are consulted beforehand by a pregnant woman who is of this diathesis, we should endeavour to prevent the probable occurrence of *post partum* hæmorrhage by correcting the impaired tonicity of the vessels and the morbid state of the blood, by the free administration of ferruginous tonics and a generous and nutritious regimen.

Many years ago, the connection between an excited state of the circulation during labour and subsequent flooding, was impressed on my mind by the late Dr. Churchill, at the bedside of a lady who was in the commencement of the second stage of labour, when he was thus enabled to forewarn me of flooding which followed some hours after delivery. Hæmorrhage may occur without any previous acceleration of the pulse; but, in a long experience, I have never seen it permanently quickened during labour and not subsiding to its normal rate in the interval between the pains, especially if this continued after delivery, in any instance in which hæmorrhage did not follow, unless obviated by timely treatment.

In every case of natural labour in which we had any reason to anticipate *post partum* hæmorrhage, the membranes should be ruptured before the full dilatation of the os uteri, so as to allow the womb to contract firmly on the body of the child. This practice, which has been recommended by Dr. McClintock of Dublin, I have now acted on for some years, and I am convinced it might be safely and advantageously extended to every multiparous labour in which the presentation is natural.

Whenever ergot is required as a prophylactic of hæmorrhage in the second stage, I give by the rectum a strong infusion of the fresh powder,



or a dose of Long's liquor ergotæ or of the fluid extract, as hot as it can be borne. In this way, the specific action of the drug is most rapidly and effectually produced, and the retching or nausea commonly caused by an ordinary use of ergot is entirely obviated.

A still more convenient method of obtaining a similar effect is the hypodermic injection of two or three grains of ergotine. Under no circumstances should ergot or ergotine be used until the os uteri is dilated or dilatable, so as to allow delivery to be effected when necessary, and thus avoid the injurious effect of the unremitting uterine action produced by ergot on the foetal circulation. That this danger is not hypothetical, was shown in a paper read elsewhere, in which I mentioned that, in forty-six cases in which ergot was given and the forceps used afterwards, the children were still-born in eight instances; and, in seventeen cases in which ergot was given and the forceps not used, three were still-born. Therefore, great as is the danger in unskilful hands of the premature and meddlesome misapplication of the forceps, I would almost as soon entrust its use to a student commencing midwifery attendance, as allow him to give ergot before the proper time for its administration had arrived.

As I have just alluded to the forceps, I may observe, with reference to the causes of *post partum* hæmorrhage, that the first stage of labour cannot, with subsequent safety, be cut short, as a rule; as those seem to think who now so freely employ the forceps, before the dilatation of the os uteri, merely to save time and without any urgent necessity. Nor can the natural duration of the second stage be either unduly abridged by the unnecessary and premature application of this instrument, or unduly prolonged by timidity or want of skill in its use, without equally exposing the patient to increased risk of *post partum* hæmorrhage.

In this respect, as well as in others, the danger of undue delay in affording judicious assistance with a comparatively safe instrument, such as my short straight Tractor-Forceps, in a case of difficult labour, once the os uteri is fully expanded and the soft parts sufficiently dilated, are not less serious than those produced by needless, hasty, and meddlesome recourse to the more powerful double curved long forceps, the application of which, before the full dilatation of the os uteri, is only necessary in certain cases of complex labour, and should be confined to these. With regard to the short forceps, however, the case is very different; for in protracted or difficult labour, if the violent, painful, and, at the same time, powerless expulsive efforts of the second stage be permitted to continue too long, a state of inertia will probably supervene, the pains gradually becoming weaker, so that it may become impossible to re-arouse the worn-out contractile power of the uterus. And this inertia may prove fatal (when too late the necessary assistance has been given) by resulting in uncontrollable flooding.

*The use of the Perchloride of Iron* in the treatment of flooding, which we owe to Dr. Barnes, although its advantages have been warmly controverted by others, is so manifest that no one who has fairly tried it could possibly doubt its efficacy. With regard, however, to the safety of its indiscriminate use, another question arises. Regarding it as a misapplication of this powerful remedy to employ it in every instance of *post partum* hæmorrhage to the exclusion of other treatment, I have, during the last nine years, only found it necessary, in my own practice or in consultation with others, to resort to the perchloride of iron in sixteen cases; in fifteen of these, the flooding was completely arrested, and in only one instance it failed. The latter was



a case of secondary hæmorrhage, proving fatal within two hours on the eighth day after delivery and resulting from hæmorrhagic small-pox. This has been the only instance of death from uterine hæmorrhage within the puerperal period that I have ever met with in private practice. In another case, where hæmorrhage was arrested by the perchloride of iron, the patient died suddenly, apparently from embolism, on the third day after delivery. Whether this was ascribable to the perchloride of iron used or not, is fairly questionable. Sudden death from embolism, soon after delivery, is not confined to cases in which this remedy is employed, and is most likely to occur when the circulation has been weakened from hæmorrhage. In the *American Journal of Obstetrics*, I have recorded three cases of sudden death from embolism, after delivery, that occurred whilst I was connected with the Lying-in Hospital, and in which the perchloride of iron was not used. Nevertheless, I am strongly inclined to agree with those who hold that the injection of perchloride of iron, through a syringe passed up to the fundus uteri, is by no means a safe practice. This powerfully coagulating fluid may thus be forced through the open uterine sinuses into the circulation, producing embolism; or it may pass through the patulous Fallopian tubes into the abdominal cavity, and cause peritonitis. I have myself had proof, in two instances, that the latter accident may be thus occasioned by a much milder astringent injection, several days after delivery, and hence, *à fortiori*, it may occur immediately after labour.

When perchloride of iron is used in the treatment of hæmorrhage, it is not necessary that the solution should be injected into the uterine cavity, as recommended by Dr. Barnes. For several years past, I have never resorted to this hazardous practice; and yet I have employed the remedy as frequently as most practitioners. The plan I have found the most effectual, as well as the safest in such cases, is that by which, more than five years ago, I succeeded in arresting violent hæmorrhage, and of ultimately saving the patient's life, in a case of rupture of the uterus, which I brought before the British Medical Association, at the Norwich meeting. In that case, when I was called in, the patient was almost moribund from shock and flooding, which was still going on; and, as it would have been impossible to inject the styptic fluid without sending it through the ruptured uterus into the abdominal cavity, and thus causing certain peritonitis, I soaked a sponge in the strong liquor ferri and carried this up to the fundus, applying it to the edges of the rent and to every portion of the flaccid uterine surface. A strong and permanent contraction was produced, and the hæmorrhage was stopped. Since then, I have adopted the same practice whenever I have had occasion to resort to this styptic in the treatment of flooding. The use of the solid perchloride of iron in such cases was suggested by Mr. Weir, of the Coombe Hospital, to Dr. A. H. Ringland, and successfully employed by him in several cases published in the *Dublin Obstetrical Proceedings*.

The practical difficulties, however, of applying the styptic in a hard crystalline state to the bleeding vessels, as well as the risk of injuring the soft uterine tissues in the attempt to do so, I think, renders Dr. Ringland's method of using the perchloride of iron less feasible as well as less safe than that which I have been in the habit of employing. Not only are the possible dangers of the injection of the liquor ferri avoided, when it is applied by the sponge directly to the uterine walls, so as to secure its styptic effects, but also, at the same time, another powerful



stimulus to contraction—namely, the introduction of the hand into the uterus—is conjoined with it. We thus obtain what, I think, will be found the most effectual method of arresting *post partum* hæmorrhage from inertia of the uterus. It is hardly necessary to add that this procedure, as in every case where the hand is introduced into the uterine cavity, is by no means free from subsequent danger, or to be adopted without necessity. But in those urgent cases to which it should be restricted, it is surely better to run a remote risk of metritis than to remain inactive spectators of immediate death from flooding.

*Ergotine*, in three or four grain doses, hypodermically administered, is not only of great value as a prophylactic, but is also of unquestionable utility in the arrest of flooding, and should never be omitted in any case where the uterus is not securely contracted. I may add that I have never found its use, in the many cases in which I have employed it, followed by any unpleasant effect.

*The use of Opium*, in the treatment of flooding, has been strongly deprecated by some writers, on the ground that its action must interfere with the contraction of the uterus, on which the safety of the patient depends. Nevertheless, those who have much practical experience will agree that there are two conditions connected with flooding in which the use of opium cannot be replaced by any other remedy. The first is when, after the arrest of active hæmorrhage, a thin incessant streamlet of blood continues to ooze from the uterus; and thus insidiously and slowly, but, if not stopped, with fatal certainty, drains the patient to death. In such circumstances, no treatment is so beneficial as a full opiate. The second case in which opium proves beneficial in connection with flooding, is in the treatment of collapse. By the use of opium (and in such cases where a stimulant effect is required, the tincture is the best preparation), I have more than once seen the flickering or imperceptible pulse brought back to the wrist; the intense restlessness, so painful to witness in those moribund from hæmorrhage, calmed down; sensibility restored; and the patient's ultimate recovery commenced.

Cold applied by ice, or the application of iced-water into the uterus or the rectum, or by the sudden shock of a wet cloth to the vulva, was the remedy on which for some years I most relied in cases of flooding. But I now believe that, although of unquestionable utility in ordinary hæmorrhagic discharge, or in violent floodings of short duration occurring in robust plethoric women, with a high bounding pulse, it is not suitable in the treatment of flooding in anæmic patients, and in such cases the undue continuance of cold injections may become an additional cause of uterine inertia, and thus increase, instead of checking, the flooding.

*Hot Water* injections, in the circumstances just referred to, offer a rational, and, as Dr. Atthill has recently proved, effectual alternative treatment.

*Transfusion*.—The success of transfusion, in a few cases of collapse from flooding, is hardly sufficient to warrant much dependence on it, save as a last resource. At some future time, this operation, in an improved form, is likely to fill a prominent place in medical and surgical, as well as in midwifery, practice; but, at present, its uncertainty, risks, and difficulties are only equalled by the gravity of the condition in which its performance is justified. The promises held out when, upwards of half a century ago, Dr. Blundell revived transfusion, are apparently as far as ever from being realised. Nor have any of the more recent suggestions—such, for instance, as Dr. Aveling's direct arm-to-arm method,



or Dr. R. McDonnell's operation with defibrinated blood, however superior in a physiological or theoretical aspect—afforded much better practical results than Dr. Blundell accomplished.

Of six cases of transfusion, narrated in the *Dublin Obstetrical Transactions*, within the last few years, three were successful, and in three the patients died.

*Cases of Transfusion.*

Authority.	Method Employed.	Amount of Blood Transfused.	Result.
Dr. Beatty.	Dr. R. McDonnell's.	—	Recovery.
Dr. A. H. Ringland.	Dr. R. McDonnell's.	8 oz.	Death.
Dr. J. Ringland.	Dr. R. McDonnell's.	12 oz.	Recovery.
Dr. Atthill.	Dr. R. McDonnell's.	14 oz.	Death.
Dr. Kidd.	Dr. R. McDonnell's.	12 oz.	Recovery.
Dr. Kidd.	Not stated.	10 or 12 oz.	Death.

Any treatment adopted in a case of threatened death from hæmorrhage should be prompt, feasible, safe, and effectual; and, in all these respects, transfusion is defective. Even in one of the best methods of transfusion—namely, that of Dr. R. McDonnell—much time, when it can be ill spared, is lost in the process of defibrinating the blood to be injected. Moreover, in this, as also in other recent plans, the success of the operation is made to depend so much on exceptional skill as to take it out of the reach of the ordinarily well-qualified practitioner, to whom it should be of most value, and who at any moment, and perhaps in remote districts or under unfavourable circumstances, may meet with a case requiring its performance.

Transfusion is useless as long as active hæmorrhage is going on. Nor would it be generally justifiable to subject the patient to the special risks of this operation until, after the failure of other treatment, she shows symptoms of collapse. The majority of patients may lose from twenty-five to forty ounces of blood before collapse is produced. In successful cases of transfusion, there are seldom more than from eight to ten ounces injected. This, being obviously insufficient to refill the empty vessels, can act only as a physiological vital stimulus.

It is sometimes, as I have seen, a matter of difficulty to obtain the necessary supply of blood. And in such circumstances, when every moment is of vital importance, we might in the first instance have recourse to the venous injection of a saline solution, as suggested by Dr. H. Kennedy, and employed in one case by Dr. Kidd, so as to fill the emptied vessels, and give the heart some pabulum to act on, and, by affording a mechanical resistance to its rapid contractions, bring back the pulse towards its normal rate and volume. We might thus at least gain time to obtain a supply of blood for venous transfusion, should that be still necessary.

*Hypodermic Use of Ether.*—In a few cases that came under my observation, the subcutaneous injection of sulphuric ether, which was suggested in the treatment of collapse from flooding by Professor von Hecker of Munich, and first brought before the profession in this country by a case reported by Dr. Macan of Dublin, was tried with great advantage. In one instance, where I was called in when the patient was already pulseless, cold, unconscious, and apparently moribund, from hæmorrhage after delivery, a drachm of sulphuric ether was injected into the gluteal region, and almost immediately the pulse



returned to the wrist, her eyes opened, and some degree of consciousness was restored. After a short time, however, the symptoms of collapse again came back, and it became necessary twice to repeat the injection of ether, the beneficial effect of which was now permanent, and the woman ultimately recovered. In this case, the patient had the nearest approach to death from hæmorrhage that I ever saw recovered from ; and although the result was possibly assisted by the other measures also resorted to, namely, mustard sinapisms to the legs and over the heart, and enemata of brandy and beef-tea, with small doses of tincture of opium, yet undoubtedly the saving of the woman's life was mainly due to the hypodermic use of ether. It would be difficult to exaggerate the beneficial effect, under such circumstances, of this remedy, by the timely use of which, in many instances, all necessity for transfusion might be obviated.

In injecting ether, less than a drachm is insufficient; and as the ordinary hypodermic syringe is too small, and is cemented with a gum which is dissolved by the ether, and, as I have found, may give way at a critical moment when it is impossible to replace it, I have had a syringe especially made for this purpose, which holds about a drachm and a half, and has no joints which can be thus acted on.

Many points have been necessarily omitted, and others hardly touched on, in the foregoing notes on the prevention and treatment of flooding. But, with regard to the treatment recommended, I may use the words of an ancient man-midwife Dr. Willoughby, and say at least that "these several reports are not feigned, or the surmised thoughts of man's fantasie sitting and meditating in his study, but which really have been performed in the travailing woman's chamber".

In conclusion, I offer these hurriedly prepared notes merely as a clinical contribution to the discussion of an important question, in discharge of that debt which we all owe to our profession, and to the cause of humanity to which it ministers.

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