

of what he regards as moral insanity. Dr. Ray does not, in the description he gives of the condition of the accused—in which he asserts that the disease was in a more advanced condition—state that it was proved that his lordship was occasionally insane, and incapable, from his insanity, of knowing what he did, and of judging of the consequences of his actions. He laboured under the delusion that his relations and friends had formed a conspiracy against him, and he regarded Johnson, his victim, as an accomplice. His conduct was of such a character as to convince those who knew him of his insanity. That the verdict of guilty may have been erroneous, and that the sentence and execution may have been inexpedient, is true, but that the accused laboured under moral mania seems to us false. In another place we point out the relation of those afflicted with intellectual mania to the State—here we would, while we praise the caution of our courts of law in hesitating to recognize moral insanity, and point out that, from the rarity of cases in which this disease is unaccompanied by very prominent intellectual symptoms, very little injustice has been done in consequence of the law's unwillingness to recognize this kind of insanity—we would censure the dogged persistence of lawyers who will not, even in the present state of medical psychology, and with the amount of evidence which has been accumulated, admit that there can, or ought to be, a recognition of such a form of disease by our criminal law.

ART. XIII.—*On Acute Inversion of the Uterus.* By THOMAS MORE MADDEN, M.R.I.A.; M.R.C.S., Engl.; L.K.&Q.C.P.L.: L.F.P. & S., Glasg.; Senior Assistant-Physician to the Dublin Lying-in Hospital (Rotunda); Corresponding Member of the Gynæcological Society of Boston, U.S., &c., &c.

INVERSION of the uterus is one of the rarest and most dangerous complications of parturition. The rarity of this accident is well illustrated by the Statistical Reports of the Master of the Dublin Lying-in Hospital (Rotunda); and as these reports are more familiar to myself, as one of the medical officers of this Institution, than any others, I shall commence by referring to them, not only on that account, but still more so from the fact that these statistics afford, as Dr. Mathews Duncan, of Edinburgh, has shown, the largest, and, perhaps it might be added, the most accurate mass of information on all obstetric subjects in existence.

Drs. M'Clintock and Hardy, in their *Practical Observations on Midwifery*, state that—"No example of acute inversio uteri has ever fallen under our notice; and the accumulated experience of Drs. Clarke, Labatt, Collins, Kennedy, and Johnson, in this hospital, does not furnish a single instance of the occurrence of this accident, though the number of women delivered during their united masterships amounts to upwards of seventy-one thousand."

During Dr. Shekelton's mastership, when 13,748 deliveries took place in the Rotunda Hospital, inversion of the uterus occurred in one case. Dr. M'Clintock, in his mastership, when 9,181 cases came under his care, met with no instance of acute inversion; nor did Dr. Denham, in his 9,867 cases; and up to the end of the year 1868, when 190,883 women had been delivered in the hospital since its foundation in 1745, only one case of acute inversion was observed, nor has one occurred since then.

Therefore, as I think that every medical practitioner who meets with any rare or interesting case, should place the facts he observes on record, I shall, before entering on the consideration of this subject at large, first narrate the particulars of a case of inversion of the uterus which recently came under my notice.

May 19th, 1870.—Whilst lecturing at the hospital, I was sent for at a quarter to six o'clock, p.m., by Dr. Torney, of Ellis'-quay, to a labour case. I drove there directly, and on arriving at the patient's residence I found Dr. Torney in attendance, and the patient in a state of collapse, pulseless, icy cold, blanched, respiration sighing, and exhibiting all the symptoms which generally attend cases of great hemorrhage. That this had taken place before my arrival, was evinced by the saturated condition of her bed, although the midwife denied that such had been the case.

On examination I found the uterus completely inverted, protruding between her legs, with the placenta firmly adherent to the fundus, from which a considerable draining of blood was still going on.

The history of the case was that the patient, M. L., aged eighteen, had been delivered of a living child, at full time, at a quarter past four, p.m. She had had a very quick and easy labour, which commenced at eleven, a.m., that morning, although the membranes were ruptured immediately before the first true pain occurred. It was her third pregnancy, as she had been married when only fourteen and a half years old. After the birth of the child the midwife who attended her, as, unfortunately as it turned out, no accoucheur

was engaged, informed me that there was considerable hemorrhage during the third stage. The placenta being retained she endeavoured to press it off, but not succeeding in effecting this, she sent for Dr. Swan, of Steevens's Hospital, but as he was out at the time, she stated that she introduced two fingers into the os to ascertain if the placenta was adherent or not, directing another woman in the meanwhile to make firm pressure over the fundus uteri. She denied pulling the funis, or even leaving it on the stretch at this moment, when suddenly, as she alleged, from the pressure of the woman who was pressing down the fundus, the womb became completely inverted and was extruded from the vulva. She now sent for Dr. Torney, who came at once, and on his arrival, finding the woman pulseless and moribund, and considering the serious nature of the case, sent up to the hospital for assistance, and in the meantime very judiciously administered stimulants, and applied a sinapism over the heart.

When I arrived, the woman was in the condition just described, and accordingly, having first administered as large a quantity of brandy and ammonia as I could get her to swallow, I at once proceeded to peel off the placenta which was morbidly adherent to a great part of the fundus. She was lying in a pool of blood when I examined her, and the hemorrhage was going on to a considerable extent before and during the operation, but was not at all increased by it. On the contrary it stopped almost immediately after it. I then returned the uterus, still inverted, completely within the vagina; the part that extruded last being the first returned, and applying pressure steadily to the fundus, with great difficulty succeeded in pushing it through the inverted cervix, there being a persistent convexity of the fundus uteri which it took some time to overcome. I now had the satisfaction of feeling the uterus spring out back into the pelvis before my hand and resume its normal condition. Dr. Torney also introduced his hand and found the parts in their natural situation.

We gave twenty drops of Battley's liquor opii sedativus with aromatic spirits of ammonia. She was still cold as death, jactating, colourless, and pulseless.

I should now, without hesitation, have at once resorted to transfusion, and indeed was quite prepared to do so, as the case was, in my opinion, one in which this operation would have afforded the best chance of saving the patient's life. But unfortunately the circumstances of the case were such as to render it impossible to do

so, as there was no one at hand to furnish the vital fluid to be injected, and hence I was obliged, most reluctantly, to abandon the idea of transfusion. Transfusion then being out of the question, we applied fresh mustard sinapisms over the heart and to the calves of the legs, and hot jars were put to the feet. There was hardly any draining from the vulva; the uterus contracted firmly; and we bound her up and applied a large compress over it. The brandy and ammonia was administered by the tea-spoonful every couple of minutes, her head was lowered, and finding the vital powers failing still more and more, I again gave thirty drops of Battley in brandy and ammonia, in all fifty drops of Battley within half an hour's time. Spite of all our efforts, however, she sank rapidly and died before seven o'clock, p.m.

Dr. Ramsbotham narrates a case very like mine, both in the alleged cause, symptoms, and result. "I was called," he says, "on April 4th, 1866, to a case of inversion which occurred under the hands of one of the most careful of our midwives, in the Royal Maternity Charity, in which I was assured that not the least effort had been made to extract the placenta. The patient was dying when I arrived, about an hour after the occurrence, although there had been very little hemorrhage. She seemed to sink from the shock communicated to the system in consequence of the accident. The uterus was very placid; I restored it without difficulty to its natural position; but the woman expired before I left the house."*

A case of this accident, which has fortunately been the only one that has occurred in this hospital from its foundation to the present date, is narrated in Drs. Johnston and Sinclair's *Practical Midwifery*, and was brought before the Dublin Obstetrical Society by Dr. Johnston in the Session 1853-54. In some of its features, particularly in the assigned cause, this case resembles that which I have just spoken of. The patient was nineteen years of age, and was delivered of her first child after an easy labour of six hours' duration. "The gentleman on duty, after having tied and separated the funis, had maintained the contraction of the uterus with the hand above the fundus—in accordance with the usual practice of the hospital—for a quarter of an hour, when finding a tendency to 'draining,' he increased his pressure, but, he asserted, not nearly to the extent it had been on frequent occasions found necessary to employ in order to assist in the expulsion of the placenta, or to restrain hemorrhage.

* Principles of Obstetric Medicine and Surgery. By Francis H. Ramsbotham, M.D., p. 429. Third Edition. 1868.

The uterus was felt suddenly to yield and recede from his grasp; he immediately saw it expelled from the vagina; an inverted mass with the placenta still attached to its surface. The assistant on duty having been sent for, on arrival found the woman pallid, exceedingly anxious, complaining of considerable pain, with the pulse scarcely distinguishable. Examination proved the uterus to be inverted, with the placenta attached to its fundus; the funis was of ordinary length, and *there was no hemorrhage.*" Dr Johnston at once effected reduction, and the patient recovered perfectly in a very short time.

Inversion of the uterus is met with in either the acute or chronic state, and on the present occasion I shall limit myself to the consideration of the former. Dr. Churchill^a has proposed to substitute the terms reducible and irreducible for acute and chronic inversion; but, inasmuch as chronic inversion may be reducible whilst acute inversion is occasionally irreducible, I think that for our purpose the old names may be more conveniently retained.

By acute inversion then we mean to describe the form of this accident, which is of recent occurrence, and, with Dr. Barnes, I would restrict the period within which the case remains one of acute inversion, so long only as the physiological changes which take place in the uterus after, and in consequence of parturition, are going on.

Inversion of the uterus occurs in three different forms, or, more properly speaking, degrees of inversion. In the first there is merely some depression of that portion of the fundus to which the placenta was attached, which forms a cup-shaped projection into the cavity of the uterus. In the second variety of this accident the amount of inversion is much greater, so that the depression of the fundus is converted into a regular intus-susception of the upper portion of the uterus, which is forced down towards the os; and, lastly, there remains the third variety or degree of inversion of the uterus, in which the displacement is complete; the fundus and body of the uterus passing through the cervix, which with the os is, in some cases, also turned inside out, and protruding from the vulva.

The causes of inversion of the uterus may be either connected with parturition, or result from morbid growths within the uterus. The former class of causes being more frequent than the latter, in

^a Manual of Midwifery. Fifth Edition, By Fleetwood Churchill, M.D., p. 569, Dublin, 1866.

the proportion of seven to one. In the great majority of cases the cause of inversion of the uterus is unskilful treatment of the third stage of labour, the womb being inverted by forcible traction on the funis, or by undue pressure over the fundus to hasten the expulsion of the placenta. And hence it is that in this hospital, where great caution is observed in every stage of parturition, this lamentable accident has occurred but once in the course of one hundred and twenty-five years.

Inversion of the uterus may, however, occur quite irrespectively of any malpractice, and this fact, which it is most important to bear in mind, is attested by William Hunter, Baudelocque, Crosse, Tyler Smith, Cowan, Barnes, and M'Clintock.

There can, I think, be very little doubt that the most frequent cause of inversion of the uterus is the employment of undue force in drawing down the funis to remove the placenta. But this is not the sole cause, for cases are recorded in which this accident was produced by shortness of the cord,^a or by the pelvis being abnormally large, by delivery taking place when the patient was in the erect position, by inertia of the uterus, by precipitate labour, or by the patient making extraordinary voluntary or involuntary straining, expulsive efforts to force off the placenta. Or, as was alleged in the case just narrated, by excessive pressure being exerted by the attendant on the fundus uteri for the same purpose. The possibility of spontaneous inversion of the uterus taking place has been strenuously denied by some writers; but too many cases to the contrary have been recorded to admit of any doubt that this accident may occur without any tangible cause. These cases, however, are but exceptions to the general rule, and in the majority of instances of inversion of the uterus, it has been the result of improper traction on the funis when the placenta was still adherent to the uterus.

Spontaneous inversion of the uterus was first described by Hunter, who says—"The contained or inverted part becomes an adventitious or extraneous body to the containing, and it continues its action to get rid of the inverted part, similar to an intus-susception of an intestine."^b Dr. Burnes supported the same view as Hunter, and held that in every instance of so-called spontaneous inversion of the uterus, a partial displacement or depression of the fundus had

^a Dr. Denman's Introduction to Midwifery. Seventh Edition, p. 423.

^b See "Pathological Catalogue and Preparations," Royal College of Surgeons of England.

previously existed, and the change to complete inversion, the gradual and natural result of this.

The occurrence of spontaneous inversion of the uterus is, as Dr. Barnes points out, intimately connected with inertia of that portion of the fundus to which the placenta was attached; this portion of the uterus being thicker than the rest of the walls of the organ, naturally projects inwards, and this projection inwards, or depression when thus produced by inertia, is described by Dr. Barnes as the first degree of inversion.*

As to the diagnosis of a case of this kind there can be no difficulty whatever in recognizing the nature of the accident which has occurred, when the inverted uterus is extruded from the vulva with the placenta still attached to the fundus. The diagnosis is by no means so simple, however, if the accident has occurred after the expulsion of the placenta; or if the placenta has been detached before the arrival of the accoucheur. The symptoms of inversion of the uterus are always of a very grave and alarming character, being of course more marked in the complete than in the partial varieties. Amongst the most constant and most prominent are those which mark the amount of shock which the nervous system sustained by it. At the moment of the occurrence of the accident, the patient generally experiences sudden and intense bearing down pain in the womb. This is almost invariably immediately followed by a feeling of faintness and exhaustion, and the setting in of sudden collapse; the pulse becomes rapid, weak, and intermittent, the skin cold and clammy, vomiting, or, at least, nausea is present; the respiration is hurried and sighing; she tosses about, moaning continually, and soon becomes unconscious. These symptoms are of course aggravated by the profuse hemorrhage which generally attends inversion; but they exist also in cases in which little or no hemorrhage has occurred.

On examining the parts, if the inversion be complete, the nature of the case is self-evident, but if it be only partial, or, in the second degree, we must make a vaginal examination, when a tumour will be found in the pelvis, of a globular form, dipping down into a *cul-de-sac* all around it, about an inch or more in depth, within the os uteri. If the case be merely one of simple depression of the fundus, it will not be possible to reach the inverted part without introducing the hand within the uterus. But here we must, as in all these cases, examine with the hand above the pubis, when, if the

* Lectures on Obstetric Operations, by Robert Barnes, M.D., p. 456. London, 1870.

case be one of complete inversion, or even of extreme introversion, we shall not find the hard contracted uterine tumour in its natural position; and if the case be one of depression, we shall be able to trace the outline of the depressed fundus through the abdominal parietes.

Though it would be almost impossible that complete inversion could be overlooked, yet it is by no means impossible that partial inversion might not be at once recognized. Hence, if a patient after delivery complains of sudden intense bearing down pain, or evinces symptoms of collapse and shock, not to be accounted for by any form of hemorrhage, the practitioner should bear in mind the possibility of the case being one of *inversio uteri*, and at once institute a vaginal and abdominal examination, and if he does not find the globular fundus uteri in its normal position, and if he discovers any tumour projecting into the vagina, he should consider and treat the case as one of partial inversion.

It has been noticed by several authorities that it frequently happens that complete inversion of the uterus is accompanied by far less hemorrhage than is generally the case when the inversion is only partial.

In the treatment of inversion of the uterus, success or failure is mainly determined by the promptitude of the accoucheur in effecting the reduction of the displaced organ. For if this be postponed sufficiently long to allow the uterus to contract completely, replacement will be impossible, and the patient will either perish at once from hemorrhage and shock, or survive the victim of the most distressing uterine suffering.

Denman says that he found it impossible to reduce an inverted uterus after a lapse of four hours from the occurrence of the accident.

Cases of spontaneous reduction of an inverted uterus are related by several writers; but these cases are so exceeding rare as to be of no value whatever in forming the prognosis of a case of this kind, or in militating against the imperative necessity for at once endeavouring to replace the womb in its natural situation. Baudelocque narrates a case where, after a lapse of eight years, an inverted uterus was spontaneously restored to its normal condition. And this has been accounted for by Dailliez, on the supposition that the tubes pulled up the inverted organ.

It seems almost unnecessary to add that in attempting to return the inverted uterus to its natural situation, it is essential, while

replacing it, to bear in mind the direction of the axes of the pelvis, and to press the uterus at first upwards and backwards into the hollow of the sacrum, and then upwards and forwards through the brim, in such a direction laterally as to avoid the promontory of the sacrum, which Dr. Barnes and Dr. Skinner, of Liverpool, both agree in thinking may prove an important obstacle to the reduction, if not avoided by this lateral movement.

Dr. M'Clintock^a endorses by the weight of his high authority and great experience, the suggestion of the late Dr. Montgomery, namely, to replace that portion of the inverted uterus first which came down last; and he has most clearly shown the necessity for attending to this point. For if any attempt be made to force the fundus through the cervix whilst the uterus is still in a state of procidentia the result will be to produce double inversion, and, therefore, increased difficulty in pushing back double the thickness of the uterine substance through the constricting cervix.

The difficulty of replacing a completely inverted uterus, results from the constriction of the inverted part by the cervix; every hour increasing the tumefaction of the protruded organ, and the pressure of the neck of the uterus through which it must pass, until reduction through the undilated cervix soon becomes impossible. The case is now very closely analogous to one of the strangulated hernia.

As on all subjects connected with the practice of obstetric surgery, the question of removing or not removing the placenta from an inverted uterus, before attempting the reduction of the displaced organ, is one on which the opinion of obstetricians are almost equally divided. Following Denman,^b most English writers advise that the uterus should be replaced with the placenta still adherent; this practice is laid down by Blundell,^c Davis,^d Ramsbotham,^e Burns,^f and Newnham.^g

Denman and Blundell, however, both agree that if the placenta be separated to a considerable extent, it should be removed before the uterus is replaced, and that, if not, it should not be interfered with until the organ be returned to its natural position.

^a M'Clintock—*Clinical Memoirs on Diseases of Women*, p. 76. Dublin, 1863.

^b Denman—*Introduction to Midwifery*, cap. 15, p. 12.

^c Blundell—*Obstetric Medicine*, p. 693.

^d Davis, p. 1088.

^e Ramsbotham—*Obstetric Medicine and Surgery*, p. 430.

^f Burns—*Principles of Midwifery*, p. 501.

^g Newnham on *Inversion of the Uterus*, par. 1309.

Dr. Barnes recommends the uterus to be replaced with the placenta still adherent, if the accident be recognized immediately after its occurrence. "But if this favourable moment, it will be better," he says, "to detach the placenta first."^a

The reasons assigned by Dr. Ramsbotham and Mr. Newnham for not removing the placenta prior to replacing the uterus, are that "either the woman must lose a very great quantity of blood from the patulous orifices of the exposed vessels, or if such a degree of contraction took place as to stop the hemorrhage, that the very shrinking of the uterine parieties would preclude the possibility of restoring it to its natural state." Mr. Newnham goes still further than Dr. Ramsbotham, and says, "Besides returning the placenta while it remains attached to the uterus, and its subsequent judicious treatment as a case of retained placenta, will have a good effect in bringing on that regular and natural uterine contraction which is the hope of the practitioner, and the safety of the patient."

Amongst Dublin obstetricians the weight of authority is undoubtedly in favour of removing the placenta, if adherent, before attempting to reduce the inverted uterus. Dr. George Johnston, by his own example and precept, has strongly supported this practice.

Dr. Churchill says:—"I have no doubt, therefore, that as removing the placenta would facilitate the reduction of the inversion by reducing its volume, that the proper method in general would be to peel it off before attempting to restore the organ."

The mode of effecting the reduction of the displaced uterus, though the subject of much controversy in some of the standard works on the question, is when freed from the unnecessary circumlocution in which the subject has, I think, been involved, is in reality simple enough. The placenta, if adherent, having been first gently, but as quickly as possible, peeled off, the displaced uterus is to be grasped in the operator's right hand, and pushed firmly, in globo, into the vagina, the cervix being first returned. No attempt should of course be made to re-invert the uterus until fairly within the vagina, as otherwise a double inversion would be the result. But, when the uterus has been passed as high up within the vagina as possible, steady pressure should be made with the pulp of the three fingers within the vagina on the fundus, which should thus be pressed through the cervix, great care being taken that the

^a Barnes' Lectures on Obstetric Operations, p. 459. London, 1870.

pressure should not exceed the resisting power of the uterine wall, or else a fatal laceration of the fundus might be very easily produced; in this way the fundus should be insinuated back through the cervix, when pressure with the knuckles may be substituted for the fingers, and continued until, as generally happens, the uterus will be found to spring out of itself upwards and forwards, "like a bottle of india-rubber when turned inside out," as has been aptly observed, and the womb resumes its normal condition. The operator's hand should now be left in the uterus until, as in my case, the organ is found to contract strongly on it, when it may be withdrawn, and the case treated on those general principles applicable to all cases in which a great shock and much hemorrhage has been sustained by a parturient woman.

If the inverted uterus cannot be replaced after all our efforts have been pushed as far as is possible compatibly with the safety of the patient, the uterus should be, at least, pushed up within the vagina; hemorrhage should be restrained by astringent applications; inflammation should be met by appropriate treatment; the patient's strength supported; the state of the bladder carefully attended to; and all pressure taken off the part as far as possible by properly adjusted bandages or pessaries, as the case may be. I need not consider this subject further, as the case is one now one of chronic inversion of the uterus.

ART. XIV.—*Hydrate of Chloral and Nitrous Oxide Gas as Anesthetics.* By CHARLES KIDD, M.D.; Member of the College of Surgeons, England; Associate Member Surgical Society of Ireland; late Physician to Westminster General Dispensary, &c.

I WOULD wish to supplement some former observations on anesthetics by a few remarks of a practical kind on a further three years' experience of nitrous oxide gas, chloroform, chloral hydrate, and one or two other agents of this class. The nitrous oxide begins to be used now mixed with atmospheric air, which allows it to be adapted to long operations, and much improvement has taken place in ophthalmic practice in "quick anesthesia," especially at Guy's Hospital.

The present year will be sadly memorable, for establishing in field hospitals, during a terrible and prolonged war, the great value and importance of two new anesthetic or narcotizing agents, the