

not be distinguished from the muscles and other parts concerned in the disease.

The ligature with which the femoral artery was secured still remains on the vessel, although more than twelve months have elapsed since the operation; it however produces neither irritation nor discharge of pus.

MOBILE, Ala., April 20, 1843.

ART. V.—*On the Treatment of Puerperal Convulsions before the full term of Utero-Gestation.* By S. HARRIS, M. D., of Clarkesville, Va.

OF the many accidents incident to pregnancy, that of puerperal convulsions is among the most alarming, the most sudden, and the most unmanageable. Intimately connected with and dependent on the gravid uterus, there is no period of pregnancy exempt from its attacks. It is admitted by all, that cerebral congestion is the most common cause of these convulsions; but it is contended by some, that they occur under an opposite state of the brain, and it cannot be denied but that there are some facts to sustain this opinion. Be this however as it may, they are generally preceded by undoubted evidences of a fulness of the vessels of the head, such as a flushed face, headache, giddiness, drowsiness, tinnitus aurium, &c. They are most common in the latter stages of pregnancy, and in labour during the violence of the parturient pains; and it is said, that they sometimes come on after labour has terminated. It is no part of my present purpose to describe this disease, as the symptoms are familiar to almost every practitioner. My design is simply to call the attention of the profession to a material point in its treatment, when the usual remedies fail, and we are compelled to resort to delivery, but the os uteri is found undilated, and undilatable by gentle means. We are advised, and on this point I believe all agree, to bleed the patient as long as the pulse will bear it, to give cathartics, and apply cold applications to the head. But in the event of these remedies failing, we must endeavour to evacuate the uterus with as little delay as possible. Different means of effecting this object are accurately and minutely pointed out, to be used according to the circumstances of the case. We are told to deliver with the forceps, if the head of the child be engaged in the pelvis and the os uteri dilated; or if not engaged in the pelvis, but above the brim, and the membranes have not been ruptured, the hand must be introduced, and the child turned and delivered by the feet; or if this be impossible, the perforator must be used. Now all these operations are made to depend upon the condition of the os tincæ. If not dilated or dilatable by gentle means, we are advised not to attempt any thing. All the authorities that I have consulted, disapprove of a forcible entry into the uterus under any circumstances.

Now I am not disposed to question the correctness of this established principle, as a general rule of practice; but in the disease which we are now considering, it frequently happens, that delivery or death are the only alternatives presented. And must we then quietly seat ourselves, and witness the certain triumph of this terrible disorder? Do not the tears and entreaties of husband and friends justify, and even demand, a last and desperate effort to ward off the fatal result?

We will suppose that a woman enjoying apparent good health, is taken suddenly with these convulsions in the fifth or sixth month of pregnancy; she is bled as far as her pulse or strength will allow, cold is applied to the head, cathartics administered either by the mouth or per anum, without any, or but slight abatement of the fits. On examination per vaginam, the os uteri is found nearly closed, hard and callous, and no manifestations of uterine contractions. The patient, during the intervals of the fits, lies in a profound stupor, unconscious and helpless, with a stertorous breathing, the eyes fixed, with dilated or contracted pupils; the heart, though still true to its office, propels the blood with a weak and vacillating action; a cold clamminess spreads over the upper portion of the body, with other equally distinctive signs of approaching dissolution. What, I ask, is to be done under such trying circumstances? Must the case be given up to nature, or are we not justifiable in making a forcible entry into the uterus, and extracting its contents? I am decidedly in favour of this last painful resource. And hopeless as such an undertaking may seem to be, it is nevertheless practicable in most cases, unless, perhaps, in the very early stages of pregnancy. But it may be asked, will this forced delivery, even if it can be accomplished without a laceration of the os and cervix uteri, save the life of the woman? I answer, that to judge from the few cases of the kind which I have seen, it probably will, unless pretty extensive effusion has taken place in the brain. In support of this opinion, I will relate a case that fell under my observation in the spring of 1838.

I was called in consultation to Mrs. —, a strong, healthy, plethoric woman, about sixteen years of age, pregnant with her first child. She was in the fifth month, and up to the time of the attack of puerperal convulsions under which she was then labouring, had enjoyed robust health, with, perhaps, occasional transient pain and giddiness of the head, flushed face, and ringing in the ears. The convulsions came on suddenly, and recurred at intervals of twenty or thirty minutes. Up to the time I first saw her, which was probably ten hours from the commencement of the attack, she had had twenty-two or three distinct fits. A neighbouring physician, of some distinction, reached her in the morning, soon after the onset of the disease, and bled her freely, indeed I may say largely, and repeated the operation several times during the day. The bowels were likewise emptied, and irritants applied to the extremities. I found her, on my arrival, totally insensible to surrounding objects. The most glaring light produced no change whatever

in the pupils of the eyes, which were fixed and distorted. The loudest noise excited no manifestations of consciousness. Deglutition if performed at all, was involuntary, and the power of articulation was completely suspended. Her breathing was laboured and stertorous, and the pulse weak and fluttering, and sometimes not even perceptible at the wrist. There was no evidence of uterine action, and on examination the os tincæ was found almost entirely closed, hard and unyielding. Viewing the case as nearly desperate, but still desirous of doing something, we determined to administer ergot, regardless of the rigidity of the os uteri. Several twenty grain doses were accordingly put into the mouth, but from the inability to swallow, very little, if any, was conveyed to the stomach. No uterine contractions resulted from this experiment. The paroxysms continuing to recur with unabated fury, I proposed as the only resource left to make an effort to deliver her. This my colleague in the case assented to, though reluctantly, as he considered it, if not impossible without certain death, to say the least of it rash and useless. I determined, however, to make an effort. Not having with me my obstetrical instruments, I was under the necessity of making a small crotchet for the purpose, out of the spindle of a cotton spinning wheel, such as is used in many families in the southern and western parts of the United States. As some of the readers of the *American Journal of Medical Sciences* may not be familiar with this domestic machine, I will describe that part of it which I used on this occasion as well as on others of a like emergency, when time was not allowed to procure more suitable instruments. It is a small round iron spike, from twelve to fourteen inches long, gradually tapering off from about the middle to a point at one end, while the other half remains of a uniform size, say one-fourth of an inch in diameter. The hook was readily made by heating the sharp point to a red heat, and bending it exactly as I wished. For the purpose of perforating the head of the fœtus, I wrapped with tape the blade of a common dirk knife to within half an inch of the point. With these rude instruments I prepared for the operation, by placing the nates of the woman on the edge of the bed, with a chair and an assistant on each side to support the legs, (the usual position in this country for turning). With the index finger of the left hand I soon found the os tincæ, and cautiously but firmly thrust it into the uterus. The second finger by dint of perseverance, was likewise forced in by the side of the first. This effected a slight dilatation of the passage, and after ascertaining pretty satisfactorily that the fœtal head presented, I withdrew my fingers and carried up the point of the knife, carefully guarded with my finger until it reached the head, which I pierced readily by acting on the handle of the knife with my right hand exterior to the vulva. After perforating the head, I introduced the hook, and with some difficulty fixed the point in the bones of the cranium. These were, however, so soft as to yield under the slightest force. I succeeded ultimately in fixing the point among the bones at the base of the skull. The last situation enabled me to use as much force as I pleased, but bearing

in mind the delicacy of the parts thus rudely assailed, I did not exert it beyond what I supposed would have been the natural expulsive power of the uterus, under ordinary circumstances in abortion, at the fifth or sixth month of pregnancy. Though occasionally interrupted by the recurrence of the fits, the efforts at delivery were kept up at short intervals for several hours, when finally the os uteri yielded, and I succeeded in extracting the fœtus and secundines. Little or no hemorrhage ensued. The woman was then placed back on the bed in what appeared to be a truly forlorn and hopeless condition. Blisters and warm applications were immediately applied to the extremities, which were now cold and clammy. As is usually the case, she had two or three fits after delivery, but they were less severe and occurred at longer intervals. She remained in a comatose state nearly twenty-four hours, frequently without any pulse at the wrist, or the ability to swallow either nutriment or medicine. Gradually, however, reaction came on, the breathing became less stertorous, the pulse slower and fuller, the surface warmer, the face less livid, and the eyes more natural in appearance. In this situation she remained for several hours, and finally waked up as if from a sound sleep, uttering moans and inarticulate cries of pain and anguish. Consciousness having returned, she was soon able to converse a little with her anxious friends, and take a little fluid nourishment, but the complete restoration of all her faculties was retarded for several days, in consequence of the severe shock which the brain had received. Mild laxatives with an occasional mercurial purgative, a nutritious but not stimulating diet, frictions on the surface, with quiet but cheerful company, soon restored her to perfect health. As far as I was able to ascertain, neither the uterus nor its appendages sustained the slightest injury from the operation. She has since been pregnant three or four times, but has not as yet brought forth a living child. Generally she has an abortion about the fifth or sixth month, preceded by giddiness and pain in the head, and on one occasion slight convulsions, which ceased after the expulsion of the fœtus, but a partial paralysis remained in one arm and hand for six or eight months afterwards.

The result of this case proves, I think beyond all question, that we are not only justifiable, but in duty bound, when all else fails, to force our way into the uterus and remove the offending cause. The practicability of this too much dreaded operation, without serious or permanent injury to the organ, is likewise demonstrated in the following case.

I was called in the month of February 1839, with two other medical gentlemen, to see Mrs. —, with puerperal convulsions, pregnant with her fifth child, and about thirty years of age. Naturally of a thin, nervous habit, she had never enjoyed robust health, and for several years previous to the attack, had been declining in strength and vigour. She was in the latter part of the fifth or first part of the sixth month of gestation. She had been labouring under the disease eight or ten hours when I first saw her, and had had probably a dozen severe paroxysms. The os uteri was undilated, and

we were unable to discover any indications of labour. After bleeding freely and finding no relief, it was proposed to deliver her at once. This I accomplished in nearly the same manner as in the other case. She had only one fit after the extraction of the fœtus, but remained in a state of almost hopeless insensibility for many hours. The general aspect of the case was very similar to the one already detailed both before and after delivery; but it could not be viewed otherwise than as a more hopeless one, as this lady had neither the youth nor vigour of constitution of the other. The next day after the operation she became rational, but was unable to articulate distinctly. The following evening fever came on, attended with a low muttering delirium, and a slow but full pulse. There was no tenderness or swelling of the abdomen, nor were the vaginal discharges at all different from that which usually follows abortion. There was, however, a retention of urine for several days, which compelled us to use the catheter. In order to lessen the violence of the reaction, she was bled from the arm and cupped on the temples, cold applied to the head, and the bowels evacuated. Her case continued on for six days, with some slight remission of the symptoms in the forenoon, but a high fever with wandering delirium in the evening. During all this time she enjoyed not one hour's refreshing sleep, nor did one-sixth of a grain of the sulph. morphia which we ventured to give her, produce more than an unquiet stupor. She would occasionally, in the morning, converse for a few moments on the subject of her children, or domestic concerns; at all other times she appeared unconscious of, or indifferent to what was passing around her. There was evidently in this case pressure on the brain, either from congestion or effusion, and the treatment pursued was strictly in accordance with this view of its pathological condition. She died on the seventh day. Had delivery been resorted to sooner, possibly the result might have been different.

We find that the os tincæ, though closed and rigid, will, by persevering efforts, generally admit one and sometimes two fingers, which will enable us to perforate the fœtal head, if presenting, without wounding the uterus. This being done, and a proper degree of tractive force applied, the passage will generally dilate and allow the fœtus to be extracted. It is admitted, I believe, by most of the standard authorities on the subject of parturition, that the child being forcibly impelled by the contractions of the uterus at the full period of utero-gestation towards the os uteri, contributes powerfully to dilate this opening, by overcoming the resistance of its circular fibres. Is it not probable, therefore, that if an equal degree of force be applied directly to the head of the child, and kept up at proper intervals for a reasonable length of time, that the same effect will be produced? Unaided by the concurrent action of the uterus itself, I grant that we might not so readily succeed; but it rarely happens that this sensitive organ fails to second our designs. Roused up by the rupture of the membranes, and the tractive efforts of the

operator, the contractions of the body and fundus, contribute more or less to the dilatation of the os uteri, and the ultimate delivery of the fœtus.

Not having seen a case of convulsions of the epileptic or apoplectic form, earlier than the fifth month, I am not prepared to give any positive opinion as to the practicability or utility of extracting the ovum in the first period of pregnancy. But so firmly convinced am I of the importance of the operation in such cases, that I should not hesitate one moment, other things having failed, to make the attempt. I have frequently seen this disease in the latter stages of pregnancy, and during labour at the full term of gestation, and I have not yet succeeded in checking it even until after delivery, either by the natural powers of the uterus, or by an operation.

In thus presenting to the public my views, in reference to this formidable malady, based on an experience so limited, I can only hope to direct the attention of others to the subject, rather than expect an imitation of my rashness. If I have subjected myself to the imputation of having violated an established rule of practice, in the two cases reported, I have at least the consolation of knowing that the bold innovation of forcibly entering the uterus and delivering the fœtus, saved the life of one patient, and did not injure the person of the other. It is only as a *pis-aller* that I can recommend this course, and I venture to affirm, that if timely resorted to, it will, under guidance of reason and the promptings of ingenuity, result very often in the preservation of human life.

[Every proposition for the relief of so terrible a disease as puerperal convulsions is deserving of a respectful consideration, and therefore we have given place to the preceding well drawn up paper. The cautious practitioner will however doubtless require evidence of greater success from the practice advocated by our respectable correspondent, than has been adduced, and will only weigh the consideration whether the forcible dilatation of the os uteri is not likely to be productive of more injury than the delivery will be of benefit.

Dr. Churchill, the author of one of the best works on diseases of women, and an experienced practitioner, remarks on this subject, "I believe there is no dispute that, until labour sets naturally, interference would be injurious; so that in convulsions during gestation, we have nothing to do with the uterus, but must confine ourselves to the treatment of the convulsive disease."—*Diseases of Females*, Am. Ed. p. 403.

Dr. Rigby, equally high authority, states: "The practice in former times of dilating the os uteri, introducing the hand and turning the child, has been long since justly discarded, for the irritation produced by such improper violence would run great risk of aggravating the convulsions to a fatal degree."—*System of Midwifery*, Am. Ed. p. 385.

Mr. J. T. Ingleby entertains similar views. "From the seventh to the ninth month," he observes, "delivery, when it is expedient, may certainly

be accomplished, but every objection which attaches to artificial delivery at the full term of utero-gestation, applies with peculiar force to the performance of it, if undertaken before the term is completed, since the cervix uteri will not have undergone its full development. In numerous instances death has speedily followed artificial delivery; in others, the event has not been so immediately fatal. In an instance of very recent occurrence, the comatose state in which the patient died, did not take place for many hours after delivery; she was in the eighth month of pregnancy, and labour succeeded the artificial evacuation of the liquor amnii. Even admitting that the convulsions which arise previous to labour depend *primarily* upon the condition of the uterus, it is important to recollect that labour is not always necessary for their removal, and that whether delivery be effected artificially, or by the violence of the paroxysms, the convulsions may continue in full force, notwithstanding the evacuation of the uterus; possibly indeed, the impression previously made upon the brain may be increased by the efforts which attend delivery.”—*Facts and Cases in Obstetric Medicine*, p. 31.

Again, he says, “It has been already stated that convulsions sometimes cease under *natural* and *spontaneous* labour-pains, nevertheless it is equally true that manual interference is, at the moment, calculated both to renew the paroxysm and render it more violent: thus Denman found the mechanical dilatation of the os uteri productive of these effects, and the best informed writers, including Chaussier, fully confirm his statement. The principle of forwarding the dilatation of the os internum by means of the fingers, can only be commended when the orifice is in a soft and yielding condition; under contrary circumstances, the practice cannot fail to be injurious.”—*Op. cit.* p. 33.

Mr. Symonds, in a paper on puerperal convulsions (*Lancet*, 8th Feb. 1834), after detailing the particulars of four cases successfully treated—first, by depletion, cold to the head, blistering, the warm bath, and camphor and opium—concludes in the following words: “Instructed by my own experience, and fortified by the authority of such writers as Denman, Blundell, and Gooch, I would say with the latter, take care of the convulsions, and let the uterus take care of itself.” In this as a general principle Mr. Ingleby says that he quite concurs, and adds, “but exceptions to it may arise. When the attack appears during actual labour, our line of practice is clearly defined; we must moderate excessive action, and deliver on the first favourable moment. But should the convulsions *precede* labour, the practice pursued by Dr. Joseph Clarke (very similar to that recommended by La Motte) is the most rational that can be followed, viz. to trust to nature’s efforts, aided by medical treatment, until the patient’s life appears to be *immediately* endangered by the continuance of the disease, and then to interfere in the speediest and safest manner to promote delivery. The circumstances which justify interference demand an impartial and dispassionate consideration, and should embrace the state of the uterus, the presentation of the fœtus, the period of gestation,

and the violence of the symptoms. An apprehension lest the patient may die undelivered, has often proved an incentive for undertaking delivery at any risk, and, doubtless, the interests of the mother alone ought to decide so momentous a question; indeed, under severe and frequent paroxysms, especially of the tetanic kind, the child is frequently still-born. In Collins's cases, 14 of 32 children, including two twin births, were born alive. Of 43 cases, including a twin birth, which occurred under Dr. F. H. Ramsbotham's observation, 21 of the infants survived. The death of the child is considered, by this gentleman, to depend rather upon a defective utero-placental circulation, than upon direct pressure; but the result may be occasioned by either cause.

"The want of success in delivering generally arises from one of two causes; the first—delivering too early, before the uterine orifice has undergone sufficient relaxation; the second—postponing the delivery until effusion has taken place, or a fatal impression been made upon the brain. Previous to delivery being attempted, sufficient relaxation of the uterus must therefore be obtained by bleeding or emetic medicines in nauseating doses, purgative enemata, and perhaps the application of belladonna to its orifice, otherwise we incur the risk either of an apoplectic seizure, or a laceration of the uterus or vagina.* This precaution has less regard to the degree of dilatation of the os uteri, (for the orifice is not unfrequently more or less open for many days before labour,) than to its state of softness; and if a decided impression be made upon it during the paroxysm, the sooner delivery is accomplished the better. Although the uterine orifice often becomes relaxed earlier than we might *a priori* infer, a moderate degree of resistance is, in every delivery, both to be expected and desired: but a forcible entry into the uterus must be discountenanced by every rational practitioner. Ashwell considers that we may always dilate the uterus with the fingers: a statement which I cannot assent to, and it is with marked propriety that Collins strongly cautions the practitioner to 'avoid hasty measures for the delivery of the child.'" *Op. cit.* p. 35, 36, 37.

All these considerations should be duly weighed, and we would particularly recommend to the junior practitioner a careful perusal of the admirable remarks of Mr. Ingleby on puerperal convulsions, in the work from which we have just quoted.—EDITOR.]

* Of five fatal cases recorded by Collins, three were complicated with laceration of the vagina.