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An Essay on Puerperal Convulsions. By Wm. P. Dewees, M. D.
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THERE is no disease to which a pregnant woman may be subject, so sudden or so menacing as convulsions: their attack is always ferocious, and their consequence but too often fatal.

And what renders this disease still more formidable is, the contradictory directions given for their cure. The young practitioner, instead of becoming enlightened by consulting authorities, is bewildered by the opposite opinions on this subject; he either pursues with reprehensible temerity the directions of one, or blameably temporises agreeable to the views of a second, or fatally urges the remedies of a third.

“But who shall decide when doctors disagree?” With a view to answer this reproachful question, the present sketch of this disease is attempted. The contradictory methods of cure proposed by authors, have originated in the pathological views they took of this complaint; and from their having but too generally supposed

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that there was but one species of convulsion to which a pregnant woman might be liable.

While some, as Lamotte, Puzos, Osborn, &c. conceived they arose from the irritation of the uterine fibres; others, as Hull, Garthshore, &c. believed them to be epileptic; while Bland and some others imagined them to be nervous.

The first set make safety exclusively to consist in immediate delivery; the second deprecate the practice, and rely for success upon the powers of nature; while the third recommend the use, the fatal use of opium.

From these discordant views of this terrible disease, arose the various practical directions for the cure. From success having attended delivery in some instances, it was hastily believed it was the only resource; from the want of success in other cases, it was given up with too much facility; while in other instances more fortunate, but more rare, opium was found useful, and it was recommended with a confidence it but ill merited. From this view of the subject it would appear, that success has attended each of the methods just noticed in the hands of their respective advocates; but that this partial good had persuaded each it was the only plan that could rationally be adopted:—than which nothing can be farther from the truth, and of course must have had many victims.

Neither of the plans of cure which have just been mentioned can be uniformly pursued without the most fatal consequences following; it therefore shall be our business to attempt such considerations of this disease as shall remove all ambiguity from the treatment, as we conceive the subject completely susceptible of such consideration.

In prosecuting this plan, we shall first advert to the supposed causes of this disease; second, notice the premonitory and ultimate symptoms; third, mark the distinguishing signs of each particular species; fourth, and then lay down the method of cure.

Of the alleged causes of puerperal Convulsions.—The causes of convulsions are so completely hidden in obscurity, that any attempt at a theory of them, until better understood, would not only be futile and objectionable, but might be productive of serious

mischief. We shall therefore merely state a few of the reputed causes, and give some occasional remarks upon them.

Dr. Denman (vol. ii. p. 405 of his *Intro. to Midwifery*,) says, "it is remarkable that this disease so rarely occurs in the country," and "that a remote cause of it may be sought for in the particular influence of the air, or in some change made in the constitution, by the customs and manners of living in cities and large towns." And that "the cases which happened out of this city (London) have happened in large towns, or among those who might be reckoned among the higher ranks of life." These remarks of Dr. Denman are by no means confirmed by what I myself have seen. In the part of the country where I once resided,* I saw several cases in the course of between four and five years: and in this city, where I have practised more than twenty years, I have been called to many labouring under this disease, almost all of whom were of the lower class of people; and to me, the robust and plethoric appear to be much more obnoxious to this disease than the delicate and debilitated in the higher walks of life.

How far the condition of the air may be instrumental in producing convulsions I am not prepared to determine; but that one season is more productive of this disease than another, I am by no means willing to admit, but yet cannot absolutely deny. I have paid much attention to this disease ever since it first came under my observation; and perhaps no one person in this city has seen more of it than myself; and had this decidedly obtained, I think I could not have failed to have remarked it, the more especially as I kept pretty extensive records of the cases that have fallen under my notice. I wish, however, not to be understood as denying it—it must be left for farther observation.

It is said by Dr. Denman, that every part of the body becomes more irritable during pregnancy, in consequence of their sympathy with the uterus. And that this is especially the case with women whose habits of life and mode of education are of the enervating kind, and consequently they are more subject to this disease than

* Abington, about ten miles north from Philadelphia.

“those women who, by education and habits of living, are seasoned, as it were, against impressions which might affect either their minds or constitutions; for it is to both these we are to look for the causes of convulsions.” I have already remarked that, as far as my observations have extended, it is the robust and plethoric who are more liable to this disease. And I may add that, for the most part, when the delicate and relaxed are seized with this complaint, the convulsions are generally of the hysterical kind; which, as we shall say presently, are neither so frequent nor dangerous as the other species.

A mercurial preparation applied to the head has, according to Dr. Denman, occasioned convulsions.

He says, “I recollect two instances of women who had convulsions at the time of labour, preceded by violent headach brought on, as it appeared, by the use of some mercurial preparation mixed with the powder used for their hair.”

It is difficult to believe that the mercury employed, as stated, was the cause of convulsions.

I have frequently known this mineral employed in the diseases of pregnant women, whose labours were neither preceded by headachs, nor followed by convulsions. It is much more reasonable to suppose, that the headachs and convulsions would have taken place had not this drug been employed.

An over distention of the bladder and rectum, has been accused of occasioning convulsions.—Lamotte relates a case of the former, but I know no good authority for the latter.

The pressure of the gravid uterus upon the descending blood vessels, causing a regurgitation of blood to the upper parts of the body, and the head in particular, has been alleged as a cause of convulsions.* But as this pressure is pretty uniform in every pregnancy, and convulsions are comparatively of rare occurrence, we can hardly be justified in assigning this as a cause of them.

“An extreme sensibility of the uterine fibres, a violent distention of the edge of the orifice of the uterus and of the parts which

* *Buadelocque*, vol. ii. p. 95.

form the entrance of the pudendum," are considered by Baudelocque*, as causes of convulsions—this may truly be the case, but I doubt if it ever produces the kind that would, if even left to themselves, have a fatal termination.

It seems to be a fact well established, that convulsions may become periodical, and return with as much certainty and regularity as the paroxysms of an intermittent fever. Levret relates a case of this kind, where the fits recurred every day at the same hour, and toward the latter part of pregnancy they lasted eighteen hours out of the twenty-four.†

Baudelocque‡ tells us of a case that returned every month during three successive pregnancies; she was attacked at the period at which the menses were wont to return.

It may also be observed, in patients subject to epilepsy, that the fits may return during pregnancy at their accustomed period, without particularly deranging the economy of gestation. I have never but once seen an instance of this kind—it was a case of true epilepsy. In this woman the fits were of pretty regular recurrence, that is, about once a month—they neither appeared augmented nor diminished by pregnancy; in two instances they seized her during labour, without doing more injury to the system than ordinary; once I witnessed them immediately after delivery—they did not, in any instance that I saw, require any particular treatment from the circumstance of pregnancy—in no instance did they produce abortion or premature labour.

I am therefore disposed to believe from this case, what has been advanced by Baudelocque,§ that when epilepsy is a constitutional disease, its attacks may be supported during pregnancy, without any manifest injury to gestation.

Having thus briefly noticed some of the reputed remote causes of this disease, I shall proceed to consider the general premonitory and ultimate symptoms.

* Baudelocque, vol. ii. p. 94.

† Levret sur l'Abus des regles générales, p. 15.

‡ Baudelocque, vol. ii., p. 96 and 97.

§ Ibid. vol. ii. p. 94.

In almost every case of convulsions during pregnancy, we may observe the attack to be preceded by the following train of symptoms, which differ more in intensity and duration than in peculiarity.

Headach, ringing in the ears, vertigo, and often a temporary loss of vision—these symptoms continue a longer or shorter time in different patients; some complaining of them many days, others but a few hours, while others only a few minutes before the convulsive paroxysm takes place.

These symptoms so uniformly prevail before the convulsions come on, that I have almost constantly, where I have been consulted for severe headach in women near their term, directed a liberal bleeding with pretty smart purging. And by this anticipation I have no question but that this formidable disease has been prevented. There is a symptom which I have observed in several instances, that has never failed to be followed by convulsions, and they of the epileptic or apoplectic kind; this is a severe and intense pain in the middle of the forehead, resembling, as they expressed it, a "nail driven into the head." So certain have I constantly been that this was the prelude to convulsions, that I have uniformly and promptly used the lancet wherever I have been permitted, and I firmly believe with the most salutary effect. In one patient who was attacked with this symptom during labour, my admonitions were unavailing—the patient obstinately refused to be bled, notwithstanding every argument I could use; nor could the anxious solicitude of her husband and friends overcome her indomitable prejudices against this operation; the result was as I predicted—she was very soon after seized with convulsions. She was instantly bled to a considerable extent—she was promptly delivered; and every means was employed that either experience or solicitude could suggest, but all was unavailing—she but too soon fell a sacrifice to the disease. I have no hesitation to give it as my decided opinion, that, had she permitted me to have drawn blood at the time I urged the necessity, that she might have escaped this terrific malady. I could not obtain leave to inspect the body after death.

Some are said to complain of violent pain in the stomach, previous to the attack of convulsions; this by Dr. Denman is consid-

ered a more fatal symptom than headach; of this I can say nothing from my own experience—others have complained of pain in the back part of the head, and neck, &c.

I think I have pretty uniformly observed, that, where the headach, &c. preceded a considerable time the attack of convulsions, the disease was milder or more manageable; while on the other hand, the severer the headach, and the shorter the period previously to the attack, the more obstinate and dangerous was the malady.

The most suddenly fatal case I ever remember to have seen, was one where the patient suddenly cried out, "O my head, my head!" and was immediately seized with convulsions, of which she died in a few hours—this case will be related presently under the head of the "Apoplectic Species."

Pregnant women may be seized with convulsions from other causes than gestation. I have reason to believe this has happened frequently; and I think we have every right to suspect this to be the case, when this complaint is unaccompanied by any symptom of labour—and if my observation be correct, they are more dangerous by far than when they proceed from pregnancy as a remote cause. When pregnancy is instrumental in the production of this disease, it is almost always at that period, when the uterine fibres are at their greatest stretch, and when the os tincæ is about to dilate for labour; or where they suffer some peculiar irritation (over which perhaps we have no control) from the contents of the uterus which has the same effect. I have known them induced some time before the full period of gestation; but where the uterus suffered the same kind of irritation as at its full development; for in these instances preparation was making for labour, as was proved by examination per vaginam.

As far as I have been able to ascertain, this disease is never preceded by an aura that is generally so manifest in epileptic patients. After the patient has suffered a shorter or longer time with the symptoms we have just described, she is suddenly seized with quickly repeated spasms—the face and eyes are twitched with incredible quickness in almost every possible direction; the arms, legs, and the whole of the body are violently agitated—one

side is sometimes more affected than the other; the face becomes flushed, then livid, nay black; the tongue is strongly thrust forward between the teeth, by which it is very frequently severely wounded; the respiration at first is much hurried, but eventually becomes almost suspended; the carotids beat violently; the jugular veins are distended; a peculiar noise is made by the mouth, not unlike what is termed "a cat spitting";* a froth issues from the mouth, for the most part tinged with blood from the lacerated tongue; the pulse in the beginning is full, frequent and tense, but quickly becomes rapid, small, and eventually almost imperceptible—the urine and fæces are sometimes discharged; a cold clammy sweat bedews the whole body, and the fit then begins to subside.

This for the most part is gradual, seldom or never ceasing suddenly and at once—the convulsive motions abate in their violence; the pulse becomes more distinct and less frequent; the breathing is less hurried and less oppressive; the face loses part of its lividity; the muscles are now agitated only at intervals, and their action resembles very much the commotion excited by the passing a brisk elective shock through them, and eventually they become entirely tranquil—the patient however for the most part remains insensible or comatose, attended by a stertorous breathing or loud snoring—she cannot be roused by any exertion for some time, and when she does recover her scattered senses, she is most generally without the slightest recollection of what has passed. This truce is, but too frequently, of but short duration; convulsion succeeds convulsion without our being able to determine with any exactitude the cause or period of their return.

When this disease attacks a woman absolutely in labour, or when this is about to take place, we may observe a pretty strict recurrence of the fits with the probable return of the pains—for although the patient be insensible to external occurrences, she appears to manifest by her moans, and that suspension of respiration that is common during a labour pain, that the contraction of the uterus has taken place; this has appeared to me to be so evidently

* There is something so characteristic in this noise, that Dr. Denman has declared he could tell the condition of the patient, though in another room.

the case, that I do not hesitate to believe that we can, by attentive observation, always tell whether this process is going on or not, without an examination per vaginam.

The face becomes very much swollen, particularly the eye lids and lips; indeed the whole body seems to partake of this intumescence, but none so conspicuously as the face. So completely is the countenance changed, or rather disfigured, that oftentimes we could not recognize the dearest or most intimate friend; nor does this swelling immediately subside with the convulsions which caused it; it frequently remains many days after they have disappeared. Dimness of sight, nay blindness for weeks, are no infrequent consequences of this disease.

OF THE DIFFERENT SPECIES OF PUERPERAL CONVULSIONS.

I shall divide puerperal convulsions into three different species, that I may be the better enabled to lay down the rules which should govern our practice in these cases. I shall, therefore, for the sake of mere distinction, without attempting to defend the propriety of the terms, call the first the Epileptic, the second the Apoplectic, and the third the Hysterical species.

In the first we have always, I believe, the premonitory symptoms some days before the attack of convulsions; it is uniformly attended with a strong determination to the head, producing an engorgement of the vessels—it may come on at any period of pregnancy, but most frequently not until some time after the sixth month. This kind almost always produces labour, or at least is almost always accompanied by it, whether as cause or effect I will not pretend to determine—but am inclined to think the former. I have seen it more than once in the same lady after the death of the child in utero.* This kind may terminate favourably when judiciously treated, or may be converted into the second species.

* The children, in the instances alluded to, evidently bore the marks of having been dead some time before the attack of convulsions, as putrefaction was pretty far advanced.

In the apoplectic species we have nearly all the premonitory symptoms just enumerated, but are of much shorter duration.— It may attack, like the former, at any period of gestation, but does not necessarily, like it, produce or be accompanied by symptoms of labour. From this it would seem it may be brought on by causes independently of pregnancy, though this process may be considered as an exciting cause; for it sometimes happens, when this is at its height, and is no other ways accessory to it than by the repetition of uterine efforts, the blood is made strongly to determine to the head. It may therefore be either idiopathic or symptomatic.

In the third or hysterical kind we have not the same train of premonitory symptoms. If headach attend, it is not so severe nor so permanent; there is frequently a ringing in the ears, and is almost always accompanied with globus hystericus and palpitation of the heart; the face is much less convulsed—the eyes vacillate much less, while the larger muscles of the body are much more powerfully agitated; the patient is sometimes very obstreperous; and the muscles on the posterior part of the body are almost always violently contracted, so much so sometimes, that I have seen a woman raised up in the middle like an arch, while her head and feet, which served to support the body, nearly touched each other. This circumstance I have considered as a very decisive mark of this species of convulsion. The face is much less flushed than in the former kinds; but I have never, to my recollection, seen it pale; as some have remarked.— There is no frothing at the mouth; and that peculiar sibilating noise which so strongly characterises the first species, and perhaps the second, is entirely wanting in this—the patient for the most part after the fit has subsided, can be roused to attention by a repetition of efforts for this purpose, or will frequently become coherent so soon as she recovers from the fatigue or exhaustion occasioned by her violent struggles; and though she may lay apparently stupid, she will nevertheless sometimes talk, or indistinctly mutter. After the fit has subsided a short time, she will often open her eyes, and vacantly look about, and then, as if suddenly seized by some sense of shame, will sink lower into the bed, and attempt to hide her head beneath the bed-clothes. The

pulse is much less disturbed, nor does it acquire that extreme velocity and tenuity that it does in the other kinds, for respiration is never so near being suspended.

This kind attacks women of delicate habits, or those who are habitually subject to hysteria. The recovery from this is always more rapid, and never, as far as I have observed, has it left imperfect vision or blindness.

From the view which we have taken of puerperal convulsions, it will readily occur, that each particular species requires a somewhat different mode of cure; and that on the discrimination much of the woman's safety depends. We trust we have laid down with sufficient clearness the symptoms which characterise each kind, and that if due attention be paid to their respective marks, there cannot well be any gross error committed.

MODE OF TREATMENT.

In the first species, our great dependence must be placed upon bleeding. This must be done promptly and copiously, or no good can be expected—and one efficient mean to render this serviceable is, that the blood should be subtracted as rapidly as possible in a given time; to ensure this, large veins should be chosen, and large orifices be made. The jugular veins are opened with a decided advantage over the veins of the arms, as the blood flows more freely, and is immediately derived from the head, the part more particularly involved in this disease. The drawing of the blood suddenly cannot be too strenuously insisted on, as I am convinced that sometimes on this circumstance alone will depend the success of the operation. It is a fact well known, that a large quantity of blood may be so gradually abstracted from the system, as scarcely to make any impression on the arterial system. When this obtains no advantage is gained, as the force of the arterial action is not weakened by the operation; nay sometimes, I am persuaded, mischief has arisen from this kind of bleeding; for the arterial system, in consequence of being relieved of part of its load when in a state of depression, acts with renewed vigour, and augments the existing mischief. The well known fact of syncope being

more certainly induced by suddenly emptying the vessels, shows that the good derived from blood letting is not simply from the number of ounces that are taken from the system, but is owing to that peculiar effect which this circumstance has upon arterial vigour; for the same, or even a greater quantity allowed gradually to escape from a vein, will have no such effect.

Baudelocque* says, "authors are not perfectly agreed upon the part where we ought to open the vein; some advise bleeding in the foot, others in the neck, but the greater part in the arm;" and adds, "it would be of great importance to fix the opinion of young practitioners on this point. I have seen convulsions of the kind described in par. 1102 (our first kind) yield to nothing but bleeding in the neck, after several bleedings in the foot; those mentioned in par. 1103 (our third kind) appear after bleeding in the foot, and be constantly removed by bleeding at the arm."

I shall merely observe on the above quoted passages, that they furnish us with the most indisputable evidence, how little the treatment of this disease was understood, or how little its treatment was reduced to system. It was prescribed for in the most empirical manner, and of course with the utmost uncertainty. To decide upon the part from whence the blood was to be drawn was a matter of the utmost import at that time; a period, and in a country where the doctrine of revulsion was cherished, and implicitly believed in. At the present day, at least in this country, we are not fettered by such restraints; we here at least know, that, *cæteris paribus*, the nearer the part affected we can draw blood, the greater will the relief afforded be: Therefore the nearer to the head that we can bleed, the more advantageous will this operation be. Dissections prove to us, that the brain invariably suffers in this complaint, to a greater or less extent. And I think we have also from these passages a strong confirmation of the opinions just advanced on the slow and sudden abstraction of blood—if these principles be not kept in view, the cases related by Baudelocque would be entirely inexplicable, but bearing these in mind, they are of most easy solution. We shall therefore lay it down as a rule, to bleed

* Vol. ii. p. 101.

from the jugular vein or veins whenever practicable, or from the arm or arms, from large orifices—for we must repeat, the shorter the time a given quantity of blood be drawn in, the greater will be the advantage resulting from it—hence I have in several instances bled in both arms at once.

It has been recommended from highly respectable authority, that we divide the temporal artery: I should not approve of this practice in the commencement of the disease, as a sufficient quantity of blood, in no instance in which I have tried, it could be drawn. I do not even recollect being able to obtain more than eight or ten ounces of blood by this operation, a quantity totally inadequate to the exigencies of the patient. When blood has been freely drawn previously, and more is still wanting, then opening the temporal artery may be highly advantageous, and I would recommend it as a substitute in some instances for cupping or leeching—but this operation I think should never be relied on, where much blood is necessary to be drawn. Could we by any contrivance obtain the required quantity, and in a short space of time, this mode of bleeding would of all others be the most eligible.

When blood is drawn from the foot, it usually flows very slowly—it does not remove the plethora that is oppressing the system, but rather promotes the vigour of the arteries; hence the injury done in the cases just related from Baudelocque, when the bleeding was performed in the foot; and hence the relief derived by bleeding from the arm, as the blood flowed from this place more copiously.—Besides, the feet are so remote from the head, that it would require an immense quantity of blood to be drawn from them, before its influence could be perceived or felt in the head.

Topical bleedings by cupping and leeching should never be had recourse to in the beginning of this disease, for the reasons we have just urged against the gradual subtraction of blood.

If it be asked, what quantity of blood should be drawn in any given case, I answer I do not know by ounces—I bleed until I abate the severity of the fits, or until I arrest their repetition.—This may be effected sometimes by thirty or forty ounces suddenly drawn, but it may require upwards of an hundred in the course of a few hours. Beside bleeding generally and topically, other

evacuations are to be promoted, such as purging, enemata of stimulating ingredients, sinapisms, blisters, &c.

During the paroxysm, it is no unusual thing for anxious bystanders to attempt an alleviation of them by holding stimulating substances to the nose of the patient—for this purpose, hartshorn, brandy, burnt feathers, &c. are used; this practice is seriously to be forbidden.

The dashing of cold water has appeared to be of temporary use.—I have never witnessed its influence, to the extent mentioned by Dr. Denman, nor should I ever place any other reliance on it but as an auxiliary.

With a view to exhibit the routine of practice in this disease, I shall subjoin cases, selected pretty much at random from many others of similar import.

CASE I.

Mrs. —, a delicate small woman, twenty-three years of age, pregnant with her first child, was attacked on the 16th Nov. 1809, at 8 o'clock A. M. with epileptic convulsions. I saw her an hour after the attack—previously to my seeing her she had had three fits, and a fourth was coming on just as I entered the door. Three or four days previously to the attack she complained of a violent jaw or toothach which was looked upon as rheumatic, and no attention was paid to it. On the 15th, that is, the day before her illness she was seized with an extremely acute headach; and during the night, and, just before the onset of the fits, she was extremely sick at stomach, and vomited a large quantity of thick glairy mucus; immediately after this she said she could not see, and was in a few minutes more seized with convulsions. She laboured under the appearances described as the ultimate symptoms, in a violent degree. I instantly bled her from a large orifice in the arm ℥xxxv . by measure—this, as I have just said, was at 9 o'clock A. M. Eleven o'clock, had two fits during my absence, and was now in the third—bled ℥xii .—ordered a strong infusion of senna as an enema—os tincæ a little opened, but rigid. 1 o'clock. P. M. had two fits since last visit—injection operated

—pulse still active—face flushed—very restless and uneasy, arising, as I believed, from the pains in the uterus—os tinæ rather more dilated—to be bled by cups ζx . 4 o'clock P. M. one fit; cups drew well; senna operated again two or three times; very comatose—ordered cold applications to the head by means of a large bladder partly filled with water and some ice—blisters to the legs. 7 o'clock P. M. no fit since last visit—pulse very active—very restless, constantly making efforts to get out of bed*—os tinæ not much more dilated; took ζx blood—senna continued to operate. 10 o'clock P. M. no fit since last visit—pulse still too active—took ζx . more of blood—cold applications. 17th, Mr. Purnell, now Dr. Purnell, one of my pupils, staid all night with the patient. He said she had one fit, after which he took ζx . of blood—senna continued to operate. At 10 o'clock A. M. I saw her—stupor much less—recognised her friends, and asked some questions—she did not see well, a slight squinting was observable. 7 o'clock P. M. better, pulse less active—had had three stools since the morning visit. 18th. Mr. De la Motha, now Dr. De la Motha, another of my pupils, staid with the patient last night. She passed a good night, was tranquil and rational—no return of fits during the night—two stools. Saw her at 10 o'clock A. M. skin dry and hot, face a little swelled, but perfectly collected. 8 o'clock P. M. face more swollen, and a little flushed; much headach—pulse very active—great thirst—took ζx . of blood, much relieved by it; pulse softened, and diminished in frequency—cold applications continued. 19th, passed a good night; free from fever and pain—no return of convulsions—bowels rather tardy; ordered senna tea. Continued much in this condition until 28th, twelve days from the first attack—this morning was seized with brisk labour pains, and was soon delivered of a dead child. From the degree of putridity, it is presumable the child died early in or before the attack.

On this case it may be proper to remark, 1st, that the child had not been felt to move for several days before the patient was taken ill—but this is by no means a certain proof of its death. 2d, signs of labour were manifested on the first day of the illness,

* I have considered this as a pretty certain sign of labour going on.

but was evidently suspended, or at least not progressive, after the second. I occasionally examined for several days, but found the os tincæ so rigid, as to preclude the idea of manual assistance; it was therefore not attempted. 3d. Had manual aid been resorted to, I have no hesitation in believing it would have been extremely injurious. 4th. That the convulsions were controlled ten days before delivery took place, although from the state of the uterus it was evident it would sooner or later take place. 5th, That the attack commenced at between the seventh and eighth month of pregnancy. This lady's next pregnancy was not attended by this untoward accident; strict attention was paid her during the whole period of gestation. She was kept on a milk and vegetable diet—her bowels were kept open—She was occasionally blooded, especially when she complained of headach—she took for several months three or four doses daily of the tincture of foxglove, with, I think, evident advantage, and was at the proper time happily delivered of a fine child. In her third pregnancy she paid much less attention to herself, and was not under medical restraint, in consequence of which she was again attacked by convulsions, and was held very much as above related, with this exception that labour was much more rapid. Her fourth pregnancy was again fortunate, as she again submitted to medical directions. Her fifth pregnancy I have understood was again unfortunate, and attended with convulsions like two of the former—I did not see her in this last pregnancy, having been absent in the country when it happened.

CASE II.

Mrs. ———, aged twenty six years, pregnant of her first child—a large plethoric robust woman, was on the 9th of Sept. 1811, at about 5 o'clock, A. M. taken with labour pains, and sent for her midwife; before the midwife arrived she was seized with terrible convulsions, and I was immediately sent for—the fits were very frequently repeated, and were from their extreme violence very threatening—her face was immediately swelled—her eyes fairly

protruded from their sockets—her tongue terribly wounded, &c. &c. I instantly bled her from the jugular vein more than three pints of blood—examined her, and found labour approaching—ordered a brisk injection—saw her two hours after—had had several severe fits—pulse extremely active—labour advancing—bled her twenty ounces—injection repeated—a stream of cold water was poured on her head during the interval of the fits—11 o'clock, A. M. fits not so severe, but pretty frequent—pulse still very active—took a quart of blood—apparently much relieved—lay quieter—1 o'clock, P. M. had had two or three fits—very restless—mourned every few minutes, desirous of getting from the bed—bled her $\text{℥}xii$.—examined and found the head low in the pelvis, and delivered with the forceps—she had two or three fits after delivery—and remained insensible to every thing for forty-eight hours—she now began to show some signs of returning sensibility—was bled twice in that interval—cold was applied to the head, and the legs blistered—she was purged freely by senna tea—after this she gradually recovered her senses. She was left completely blind for two weeks—she then began to see imperfectly, but was six weeks before she could distinctly discern objects. It may not be amiss to observe the child was living.

This case is remarkable on account of the severity of the disease, and the large quantity of blood that was drawn in the short period of a few hours. She lost, in the first six or seven hours of her illness, one hundred and twenty ounces of blood, and about 140 ounces altogether; a quantity that might, at first sight, startle the timid or inexperienced practitioner; but when he reflects, that here was a patient labouring under one of the most ferocious complaints in the whole catalogue of human diseases; the brain threatened with immediate destruction; the patient of prodigiously full habit; one who not only neglected the kindly warnings of head-ach, giddiness, and occasionally loss of vision, by not having recourse to bleeding—but, contrary to the advice of her midwife, fed freely and remained long costive—what then could avert the threatening consequences of this disease but the most prompt and the most subduing remedies? Had not the bleeding been carried to the extent it was, I really believe it would have been unavailing.

Even as it was, it did not prevent temporary blindness. Her second pregnancy was not attended with any untoward circumstance.

TREATMENT IN THE APOPLECTIC SPECIES.

We know no difference in the treatment of this disease that is very important, except that blood-letting should if possible be more promptly employed, and more extensively used than in the former—for if an hour be lost, the patient's doom may be sealed. And it must not be disguised, that the patient but too often falls a victim to its violence, notwithstanding "all the pliances and means to boot." And we may add, as it forms a distinction between these two species, that there is one state of the patient in which artificial delivery is not to be thought of. But as this is a matter which should be clearly understood, we will state the treatment more at length. In order to do this with the least possible ambiguity, we shall divide this species into two varieties, and for want of better terms shall call one idiopathic, and the other symptomatic. By the former we wish to be understood that attack of convulsions in which pregnancy or labour has no agency in the production of: and by the latter that attack of convulsions which happens during the progress of labour, but in which this process had no other agency than producing a strong determination to the head. In variety first, we have seen a disease seize a pregnant woman without this state contributing especially to it; for if the same plethoric condition of the blood vessels should be produced without the circumstance of pregnancy, the same result would follow. In this variety then we shall find, that the premonitory symptoms preceded the attack but a short time; that they were more intense; but that the convulsions are perhaps less severe, but more obstinate in their continuance, and less regular in their return—the breathing is more strongly stertorous, or is rather a loud snoring—that there is no change made in the *os tincæ*, nor any evidence of uterine contraction—in a word, not a symptom of labour. Here, then, should we attempt delivery by forcing the mouth of the uterus, as some direct, we should inevitably destroy

our patient; delivery in this case is not to be thought of, because there is no effort of nature for this object; and where this effort does not manifest itself, it were madness, nay, I had like to have said, *murderous* to attempt it. Our whole duty in this case consists in proper medical treatment, and differs in no way from that we have already suggested for species the first, except, in this case, the remedies require a more prompt and a more extensive application. Effusion but too often takes place, and all our hopes are blasted in a moment.—We may here observe, once for all, that the rules for the delivery of a patient labouring under convulsions are simple, clear, and void of all ambiguity—they are these. When there is an evident disposition in the uterus to effect the expulsion of its contents, it is then and then only we are to attempt to assist it.

2. That this assistance must be given to the efforts of nature with the least possible violence.

3. That unless the labour be far advanced, and the delivery can be very promptly effected either by turning or the forceps, it should not be attempted, until we have lessened the danger of a fatal effusion by a copious bleeding.

4. That no attempt should be made to dilate the mouth of the uterus when at all rigid, until we have removed, or very much lessened the determination to the head by a *sufficient loss of blood*.

5. That this *sufficient loss of blood* is only manifested by a cessation, or a great abatement of the convulsions, or by an easy dilatability of the os tincæ.

6. That when the former condition obtains, we may safely trust to the efforts of nature to effect the latter, but if it be accompanied by the latter, the more speedily we deliver the patient the better.

7. That turning is the means to be employed where the child is still enveloped in the uterus; but when the head has escaped from this viscus, we must employ the forceps.

CASE III.

Mrs. ———, Nov. 10th, 1797—pregnant with her second child, and in the 8th month, was seized while at the ironing

table with vertigo.*—She fell, and was immediately attacked with convulsions. I was living near her, and was instantly sent for—I found her labouring under the general symptoms of this disease—I bled her from both arms at once, and took from each arm nearly, if not quite, a quart of blood.—She appeared for a short time much relieved; that is, the convulsions were abated—I examined her, but found no change in the os tincæ. An injection was ordered, which operated well—about an hour after the bleeding her pulse rose very much; her breathing was more laborious and stertorous, and some convulsive twitchings played over the whole body.—She was entirely insensible to all external impressions—the pupils of the eyes were much dilated; fearing a violent repetition of the convulsions, I again tied up the arms, and took about twenty-five ounces more of blood—this seemed again to moderate the symptoms—no change in the os tincæ. 4 o'clock, P. M. three hours after the attack, the convulsions were renewed with considerable violence.—She was let blood to the amount of twenty ounces—cold water was poured on the head—she was again more tranquil, but not less comatose, though the breathing was less loud; she had a copious black stool. 6 o'clock, P. M. had had several fits, but not as violent as at first—pulse still too active; took eighteen or twenty ounces of blood from the arm—as the pulse was now considerably reduced, applied a pair of blisters to the legs and sinapisms to the feet. 10 o'clock, no convulsions since last visit, breathing freer, but loud—swallowed a little water with some difficulty—passed no water since the attack, introduced the catheter, and drew off a large quantity—had two stools—made an effort to vomit. 11th, 6 o'clock, A. M. was called to her suddenly by request, as her breathing was becoming more laborious and loud, and face more flushed, with some convulsive agitations; pulse rather too active, had ten ounces of blood by cups, and a large blister between the shoulders. From this time there was no return of convulsions.—She gradually recovered her

* She had complained all the morning of intense headach, and several times said she could not see—she was advised to leave off work, but would not.

recollection, but remained until some time after her delivery, (which took place at the regular time, and with a living child,) with imperfect vision, especially in one eye. She was for many years after this subject to violent headaches, which were relieved constantly by bleeding.—She had several children after this attack without convulsions.

CASE IV.

Mrs. —, October 1, 1803, had been in labour several hours; she had every appearance of being happily delivered of the fifth child, when, during a strong pain, she instantly cried out “my head,” “my head,” and immediately fell into convulsions. She was under the care of another physician, to whose aid I was instantly called by his own desire—the convulsions were strong and very frequently repeated—she was largely bled; on examination the child was found to be far advanced, and was speedily delivered by the aid of the forceps—the convulsions, however, continued in spite of every exertion to relieve them, and she died in about three or four hours from the attack. Leave was obtained to open the body; the longitudinal sinus of the dura mater contained (by estimate) between two and three ounces of blood; the posterior left ventricle was filled with a bloody serum—the other ventricles appeared sound, as did the other parts of the brain—no other part was examined.

CASE V.

Mrs. —, aged 24, pregnant for the first time, was taken in labour on 10th March, 1797—her labour proceeded regularly, and the child's head was at the inferior strait, and every rational expectation was entertained of a speedy delivery, when she suddenly cried out with pain in her head, and declared she could see no one in the room; these symptoms had continued but a few minutes when she was seized with convulsions—she was under the care of the late Dr. Shippen, who requested I might be sent for, and desired I would bring my forceps with me. I found the patient in a

strong fit, with her face literally as black as a negro—it was agreed she should be bled extensively—this was done from the left jugular vein to the amount of nearly two quarts; it had an immediate effect in tranquillizing her. I now examined her, and found the head low in the pelvis; I applied the forceps, and delivered her of a dead child. Upon examination it was found there was another child; the uterus soon discovered a disposition to act; but fearing injury from delay, I immediately delivered by the feet, which were the presenting parts; the child was healthy and did well; the mother had no return of fits, and she rapidly recovered her usual health, excepting that of her eye sight, which did not return so as to discern objects for several days; and her vision was very feeble for several weeks.

HYSTERICAL CONVULSIONS.

This species is much more rare than those we have already mentioned, not occurring once for the others twenty times—it is also much less mischievous. It may occur at any period of pregnancy, without necessarily deranging its economy. I have known it repeated six or eight times in the same pregnancy without manifest injury. It is not preceded by the same train of premonitory symptoms as the other two species—for the most part we find the patient complain of headach and especially on the top of the head; some giddiness, and ringing in the ears, a sense of suffocation, making deep inspirations and begging for air, declaring she is so hot she shall die if she does not get air—palpitation of the heart and a rising in the throat—she is presently afterwards seized with a convulsive paroxysm, which differs in its appearance, as we have already noticed, from the other species. For the most part the convulsions continue longer, but are evidently not so threatening—it sometimes ceases suddenly, and the patient will frequently recover her senses and anxiously enquire where she has been, or what is the matter. Sometimes the paroxysm is attended by laughing or crying—when this happens, there is no mistaking the disease. It may take place during labour, but this is rare. When it happens before labour it does not appear to have any agency

in producing it. I have never seen this species followed by loss of sight or permanent headachs.

Its cure is much more simple and certain than the other kinds, requiring precisely the same treatment as when this disease happens to women not pregnant. I have never considered delivery essential to the welfare of the patient, unless it attacks when this process is pretty far advanced, and seems to arise from the irritation given by the head of the child suddenly distending its mouth; in this case to deliver may be important, as it immediately removes the cause of the convulsions.

This form of the disease rarely requires more than one bleeding, and that not very large. After we have taken away blood, which should always be done when the pulse is full or tense, we may safely exhibit opium with assafœtida, which will generally pretty speedily arrest the disease. I have never found cupping or blistering necessary; having the bowels opened by injections is important; and enemata are often the best, and sometimes the only method of conveying the remedies just mentioned. It was the treatment for this form of the disease which has given rise to almost all the errors in the management of puerperal convulsions; it was successfully treated by opium and antispasmodics; and as every other species was confounded with this, the same plan was pursued with them to the inevitable destruction of the patient.

CASE VI.

I was called on the 10th of July, 1811, to Mrs. ———, who was, at the moment of my arrival, and had been for a considerable time before, in a strong convulsive paroxysm. I found several men diligently employed in holding her and opposing her motions; she was raised in the middle like an arch, while her feet and head nearly met. She was between seven and eight months pregnant, and subject to hysterical affections.—She was thrown into this by some altercation with one of her neighbours—cold water was dashed in her face, and she was blooded to the amount of sixteen ounces.—The spasms began to give way soon after, and in the course of about fifteen minutes ceased.—She sighed very deeply,

and struck her arms very forcibly against the bed, and in a few minutes more enquired what all these men were doing with her. I gave her fifty drops of laudanum and two tea spoonfuls of the tincture of assafoetida in some sweetened water, and she had no return of the fit.—She went her full time without a repetition of them, and was safely delivered of a healthy child.

I shall now subjoin two other cases to show of how much consequence a proper distinction is in the treatment of puerperal convulsions.

CASE VII.

I was called on the 16th of April, 1810, to Mrs. —, said to be in strong convulsions. I was from home when the messenger arrived, but went so soon as it was in my power.—When I went into the sick chamber I found Dr. — with the patient. He told me “Mrs. — had been attacked about two hours before with convulsions, and was in the ninth month of pregnancy—that previously to the attack of the fits, she had complained of violent pain in the forehead, which she told her husband she could cover with her finger.—She had this pain several days, but was much more intense this morning, and was attended with a sensation as if a piece of black gauze was before her face. She was stooping for some time over a trunk in which she was arranging some articles, when she was seized, and fell on the floor in strong convulsions.”

She was now lying senseless and without motion on the bed; she breathed very heavily and snored loudly—her face much swollen and of a purple hue—the pulse frequent and small, and the extremities cold. I enquired what had been done, and was informed by Dr. — he had given her twice, sixty drops of laudanum at a time, and that since the last dose she had had no fit, and was in his opinion very much better, requiring nothing but sleep to restore her.—I told him very plainly that I thought he had mistaken the patient's case, and had in my opinion sealed her fate by the use of the laudanum.—He appeared alarmed, but not altogether convinced.—We did every thing that we thought might be

useful, but all exertion was unavailing, and the patient died in about three hours.—I could not procure leave to open the body.

CASE VIII.

Above three months after the above event had taken place, viz. on the 20th of July, 1810, the same gentleman was called to Mrs. —, labouring under convulsions. I was sent for at his request. Before I arrived he had bled the patient very freely (forty ounces) by which she was considerably relieved—she was near her full time of gestation. From her peculiar motions and breathing, I suspected labour had commenced—she was examined, and the os tincæ was dilated to about the size of a dollar. It was however pretty rigid. The convulsions however returned with considerable force; the patient was again bled about thirty ounces; a stimulating injection was thrown up the rectum, which operated freely: the mouth of the uterus was now well dilated; I turned and delivered a living child. Mrs. — had one fit after delivery, but it was not severe. She recovered her senses and feelings on the second day after delivery, and no other inconvenience was experienced, except some dimness of sight and slight headach. Several days before the attack of convulsions, she had complained of the headach, and that particular sensation of a nail being driven into the head, and also of an occasional loss of sight.

The two cases just related form a happy contrast in the mode of treatment; the first case proving so unfortunate, made a strong impression on the mind of Dr. —, who very properly profited by it in the second case. He candidly confessed they were as similar as any two cases of disease could be, and declared himself much shocked at the reflections which the unfortunate case gave rise to.

In every case of convulsions, it is but too common for bystanders to oppose by strength the contractions of the agitated muscles. This practice cannot be too severely reprehended, as it is very injurious and most unnecessary; it subjects the patient to severe muscular pains, which last for very many days after the fits subside.—All that should be done in such a case is, to prevent the patient

doing herself mischief, or prevent her throwing herself from the bed; a very moderate exertion is sufficient for this purpose, therefore violence should never be employed.

—Si quid novisti rectius istis
Candidus imperti, si non his utere mecum.