On puerperal eclampsia : notes of a clinical lecture / by Dr. Matthews Duncan.

ON PUERPERAL ECLAMPSIA.

ON PUERPERAL ECLAMPSIA.

(Notes of a Clinical Lecture.)

BY DR. MATTHEWS DUNCAN, F.R.S. ED.

Physician for Diseases of Women to the Royal Infirmary, Edinburgh.

IT is to-day my object to give you a sketch of a very interesting affection, of which an example has recently been admitted into Ward XVI.

Puerperal eclampsia is an unmistakable disease which is still very far from being understood, but on which much light has recently been thrown. It used to be confounded with apoplexy because the patients were often suddenly attacked, and because they became rapidly more or less comatose; and the error was confirmed by the occasional discovery *post mortem* of clotted blood within the cranium, generally between the meninges. But the symptoms alone distinguish it from apoplexy, e pecially the recurring attacks of epileptiform convulsions which have given it one of its common names—"puerperal convulsions." Then it was confounded with epilepsy. But the distinction from this was soon made, eclampsia being an acute, while epilepsy is generally a chronic disease; the resemblance to epilepsy being indeed confined to the circumstances of the individual convulsive attack.

Puerperal eclampsia has more likeness to infantile convulsions than to any other disease; excepting, of course, the almost identical disease which may occur in uræmic men and women, apart from pregnancy or childbearing. A child, scarcely able to walk, gets into a garden and eats some pretty raw fruit. Shortly, it is seized with a series of epileptiform attacks, with intervals of stupor or coma; and these attacks continue till the offending fruit is vomited. Then the fits cease, and the child

rapidly recovers. The analogy between this and the most ordinary form of puerperal eclampsia, though not perfect, is very close. A woman, believed to be in good health, like the patient upstairs, is unexpectedly taken with epileptiform convulsions. She is known to be in a state of advanced pregnancy. The fits continue, and between them she is comatose. At last, after more than twelve hours of this acute disease, the fœtus is expelled, and the fits cease. The woman rapidly recovers.

The predispositions to this disease are not well known. Among them are primiparity and hard labour, and the influence of these conditions is easily explained, as will be presently seen. But when Lever observed that the urine of these eclamptic cases was often albuminous, everyone at once recognised the discovery of a great fact, and the further history of the investigation of the disease confirms its significance. The uræmic theory was the consequence. It was soon ascertained that Bright's disease in a chronic form, in pregnant women, predisposed to eclampsia; and it was generally, but wrongly, said to cause it. Then it was also observed that acute renal attacks, which were far more common, had the same influence. Much error has arisen from confounding with these cases, others in which there was no Bright's disease; where there was only a trace of albumen, such as is found in the urine after a seizure of epilepsy as well as an attack of puerperal eclampsia. The frequent discovery of traces of albumen in the urine of pregnant women, whether eclamptic or not, and the mixture of these cases of slight albuminuria with cases of more copious albuminuria attending some form of Bright's disease, had produced statistics which were most misleading in connection with this subject. A similar error would be to confound cases of diabetes mellitus in pregnancy with the slight glycosuria alleged by some to be invariably present in that condition.

In Bright's disease the blood becomes loaded with urea. This happens in men, of course, as well as in pregnant women. Eclampsia does not invariably occur in either class of cases, but it is very much more frequent in the latter than in the former; and here there is an evident insufficiency of the uræmic theory, if held to be the whole account of the cause of the disease as well as of a predisposition to it. Why should it be so frequent in uræmic pregnant women?

Frerichs now advanced his hypothesis, that the cause of the eclamptic attacks in the uræmic was the transformation of urea into carbonate of ammonia. That there is plenty of carbonate of ammonia in the blood, in the expired air, in the vomit, and in the fœtal blood of eclamptic puerperal women, is at least generally believed; and it can be sometimes demonstrated in the breath by means of a rod dipped in muriatic acid. I have not time to enter upon this hypothesis, and shall merely say that, in spite of the numerous attacks on it by Oppler and others, it has recently received some support from the experiments of Spiegelberg and Gscheidlen. The hypothesis of Frerichs is an appendage of the uræmic theory. The theory of Traube and Rosenstein is generally regarded as antagonistic to the uræmic theory, but it appears possible to combine them and produce a view of the disease which may perhaps be even sufficient as a guide to the proper treatment. These gentlemen invoke the well-known watery condition of the blood of healthy advanced pregnancy, which Andral pointed out, and increased cerebral blood-pressure from hypertrophy of the left ventricle which was demonstrated by Larcher. These combined conditions produce congestion, then œdema, and ultimately anæmia of the brain, and thus the disease is supposed to be accounted for.

But there are many other circumstances, either actually known or nearly ascertained, which cannot be neglected when we frame a theory of this important practical subject; and a good theory is most valuable, for, in spite of ourselves, our theories govern our treatment.

Now, healthy women in advanced pregnancy are known to be hydræmic. The researches of Gassner show that a woman in pregnancy gains considerably in weight, excluding the weight of the gravid uterus. Recent investigations by Spiegelberg and Gscheidlen indicate that there is a plethora of the watery blood. Some unpublished researches of Dr. Hardie indicate an increase of the quantity of urea in the blood. The presence of increased urea in the blood causes, as Mahomed has recently described, contraction of the small arteries and increased blood-pressure, and these demand increased power of the heart's action. These latter conditions are all materially increased by an attack of Bright's disease to which women in pregnancy are peculiarly liable. On a pregnant woman in this

healthy condition, strikingly like as it is to that produced by Bright's disease, come the throes of labour which interfere with the regularity of respiration and suddenly increase the cerebral blood-pressure, flushing the face. It does not seem wonderful that under this combination of circumstances fits should occur, and that they should often appear to recur simultaneously with the pains. If the uræmic theory is insufficient, so also is the theory of Traube; but the bases of both theories may be advantageously combined with increasing knowledge as to the conditions of healthy pregnant women, with a view to a more thorough explanation of the production of the fits.

[*Here were stated the facts of the case.*]

You have here a picture of a case of a truly awful disease. Bystanders are greatly terrified by the fits as they recur and convulse the patient. But the mere phenomena of these paroxysms do not in the same manner alarm the intelligent practitioner, for he is aware that the patient may undergo almost any number of these without irretrievable damage. He has, however, in addition, knowledge of terrible events that may happen: the patient may suddenly die in a fit, and when this happens it is not rarely in the first fit; the patient may become gradually more cyanotic and comatose, and die exhausted, as it is frequently called; and although she may appear to recover, she is more than ordinarily liable to die from secondary diseases during puerperality.

When you have seen one case of this disease, you can have only a very imperfect notion of it. Cases differ from one another very much. You may have a case without eclampsia or allied symptoms; you may have a case where nightmare terrors and pains in the head take the place of the convulsive paroxysms; you may have a case with coma alone, with a single fit, or with only two or three; you may have a case with very numerous fits, but without any evident symptoms of great danger; and the most common cases are much more formidable and manifestly very dangerous.

Here is a disease which offers the physician an opportunity for a triumph; but, alas, we have no sure remedy. The physician can do very much, and probably saves many lives; and he will be most successful who does not blindly trust to any proceeding or drug, but uses cautiously his resources, watching their effects.

It is a good custom to have the alimentary tract evacuated. The urine, sometimes very scanty, is drawn off and preserved for examination. Gentle diuretics are administered, if the patient can swallow. Care must be taken lest the patient injure herself, and you will try to prevent her biting her tongue. Artificial respiration may be required towards the end of a fit.

The most valuable resource is, for evident reasons, the evacuation of the uterus; but this is a remedy which taxes all your wisdom to use properly. It may be a desperate resource, or it may be an easy operation, easily judged appropriate and easily done. Its desirableness is based on the circumstance that in very many cases the fits stop when the uterus is evacuated; but this desirableness has in many cases, when the labour is little advanced, or apparently not yet begun, to be measured against the danger of the operation to both mother and child. In the second stage of a labour advancing too slowly, you would not hesitate to apply the forceps; on the other hand, if labour were not apparently present, you would justly hesitate, proceeding to perform forced labour only in circumstances truly desperate. Here comes an important practical question, When is a case desperate? To enable you to answer this question, you will find it advantageous to call to your side your best and most experienced friend, to aid you with his counsel. In the worst cases the nature of the fits varies, being often frequent and severe; but, especially, the patient's condition is gradually becoming aggravated; she becomes paler, more cyanotic, her breathing shallower, her pulse feebler, and her coma profound.

We now come to remedies which are the subject of much difference of opinion. These are venesection and narcotics. In my young days, I was taught, on the authority of Hamilton, that bleeding was the "summum remedium." Then chloroform was discovered, and immediately, without good reason shown, bleeding was decried as injurious, and chloroform declared to be the "summum remedium." We may take what lesson we can from observing the effects of these sudden changes of opinion, and we must try to be less fickle and more rational.

Bleeding is useful in two ways. In the most desperate circumstances a small amount of blood drawn by venesection relieves the distended right ventricle. But it is as a good large depletion of from twelve to twenty ounces that this resource

is generally esteemed. It is most relied on in cases where there is the appearance of plethora and great vascular tension, and I do not doubt that it is sometimes very useful. Occasionally the practitioner is flattered by the immediate appearance of signal, though perhaps only temporary, benefit; the patient, who has been in deep stupor for hours, looking up intelligently before the blood has ceased to run; and this happened in our present example. I am sorry I cannot give you precise instructions for the application of this potent remedy; and I need scarcely remind you that while it meets some of the morbid indications, diminishing blood-pressure and removing blood poisoned with urea, it injuriously favours the hydræmic condition; and although it diminishes blood-pressure at the time, it may be doubted whether it does so permanently, or even for an hour.

We now come to narcotics, and among these, that chiefly relied on is chloroform, recommended originally by Simpson. Opium or some of its preparations is extensively used, especially on the Continent, but it is chloroform that has made the reputation of this class of remedies. Latterly, chloral has been frequently resorted to with apparently good results. No satisfactory theory of the utility of these remedies has as yet been discovered. By a few, certainly not by Simpson and most other physicians, they have been supposed to produce their effect by restraining effort and thus obviating the concurrent increase of cerebral blood-pressure which is supposed to be the cause of the fits. Admitting the almost proverbial difficulty of estimating the value of a remedy, I conclude by some dogmatic statements as to the use of chloroform in this disease. Often it appears to lessen the frequency and severity of the fits, and to be otherwise satisfactory in its results. Occasionally it is impossible to attribute to its use any good effect whatsoever, the case going on as before its exhibition was commenced; and this, whether given in large or in moderate doses. Occasionally it seems to have an injurious effect; the case, under its use, becoming more and more desperate. I use it only experimentally and cautiously, in those cases where the respiration is imperfect, there being much cyanosis; and it is not unnatural to suppose that the intoxicated blood of such a patient will be rendered more baneful by the addition to its constituents which will be derived from the inhalation of chloroform.