CRITICAL REVIEW

The Treatment of Eclampsia.

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Bearing in mind the prevailing want of unanimity upon the subject, it occurred to me that it would be very interesting and might be profitable if I could obtain the opinion of the various authorities in the United Kingdom as to how they would treat eclampsia, and to this effect I prepared and despatched a circular containing various questions to every teacher of obstetrics, obstetric physician, and physician to the lying-in institutions in England, Scotland, Wales and Ireland, whose name I was able to ascertain. I sent out altogether one hundred and ten circulars and the names of those who replied will be found at the end of this paper. A glance at the list will show it to contain the names of the chief authorities in the United Kingdom on the subject, and to all these gentlemen I offer my best thanks and appreciation for the great trouble they have taken in letting me know so fully, as they practically all did, what they considered the best method. Exigences of space necessarily prevent my printing every reply in full, a course I would have liked to pursue had it been possible, but I propose in connection with each line of treatment to include a list of those authorities who are in favour of it or otherwise.

Eclampsia may be treated in one or more of the following ways:—

1. By the administration of drugs.
2. By venesection.
3. By saline injections.
4. By baths and packs.
5. By Abdominal Cæsarean Section.
6. By Vaginal Cæsarean Section.
7. By *accouchement forcé*.
8. By delivery with forceps or version after full dilatation of the cervix.

1. By the Administration of Drugs.

Chloral. This may be given by the mouth or rectum and is said to act better when given with an equal quantity of potassium bromide. It

is more especially prescribed where the fits do not stop after delivery and chloroform is contra-indicated. As it decomposes in the blood into chloroform its dose is somewhat difficult to regulate. Charpentier is greatly in favour of its administration and finds in a series of cases collected from various sources, numbering 239, that the mortality when only chloral was given was 4 per cent., but when combined with any other line of treatment 8·5 per cent. He injects a drachm of chloral mixed with three ounces of mucilage into the rectum, if not retained he gives another and so on till it is retained. In six hours he gives another drachm, which as a rule suffices, if not he goes on till he has given half an ounce in the 24 hours. Herman refuses to accept these figures as correct, since no medical man would give chloral to a comatose patient. Therefore there would be a natural selection of the milder cases for treatment with this drug. On reference to the answers returned concerning this drug I find that the majority do not use it. Dakin, McCall, Robinson, Boxall, Maclean, Wallace, Ballantyne, Kinkhead and Jardine use it occasionally. Spencer and Williamson think it is at times of very great value. Eden thinks it inferior to morphia. Croft, as a rule, gives it either by mouth or rectum, as does Rayner by the latter method. Bonney thinks it is dangerous. Ranken Lyle would not use it on account of its depressing effect. Stephenson considers that it is not to be trusted in a fully developed attack, since its full action dangerously aggravates the serious after effects of the seizure and Byers thinks that when it is given to control the fits it acts just like the poison which is the cause of the eclampsia and increases the tendency to death. Hellier administers it per rectum after labour to keep off recurrence of fits, and Haig Ferguson and Kinkhead find its administration very useful in mild cases given early per rectum, as it seems to materially help the dilatation of the cervix.

Chloroform. This drug is said to modify the number of fits, prevent the rise of temperature, ameliorate the condition of coma, relieve the venous congestion, and lower the arterial tension. Opinions differ considerably whether it should be given as a routine treatment, but everyone is, I think, agreed that it should be given whenever any operative measures are contemplated.

On reference to my circular I find that, whilst all use chloroform for operative measures, the majority also use it at times in combination with other treatment, either during the fits or when other means of controlling them have failed. Routh thinks it is essential to tone down the convulsions. Horrocks thinks it is useful in warding off

the fits and both use it as their principal drug. Sir John Williams, Champneys and Tate think it the best drug to use if the fits are frequent. Wright uses it exclusively. Blacker, Fothergill, Lockyer and Russell use it till morphia has had time to act, and Kinkhead till chloral has had time to act. Byers thinks that its use for controlling convulsions is to be deplored since it increases the tendency—in a similar way to chloral—to deaths. Eden thinks it should never be used upon an unconscious patient. Herman thinks but very little of the chloroform treatment and does not advise its administration. He thinks it absurd to talk about giving chloroform when the fits come on, since these are not preceded by any sure symptoms, neither would there be time to administer it if they were, and during the tonic phase the patient is unable to inhale. If the patient is restless she must be put fully under its influence and kept so, as long as any restlessness is present, so that she might have to be a very long time under its influence, which, even supposing the medical man could give the time, is in itself an element of danger.

Morphia. Half a grain of morphia followed by a quarter of a grain when necessary until the patient is sound asleep is the usual dose. It inhibits metabolism and so stops the formation of poisons, whilst large doses remove the state of spasm in the renal arteries and so favour urinary secretion. The morphia is given as long as the patients are the least restless, and Veit has given as much as three grains in four hours. Most physicians think that the maximum quantity to be used in 24 hours should be two grains. Veit has treated 60 cases with two deaths, and thinks the failures are due to the fact that an insufficient amount of the drug has been given. Löhlein, in 325 collected cases, reported a mortality of 13·8 per cent. when this drug was used. On looking at the answers to my circular I find that the majority use it as a routine measure. Sir John Williams, Edgar and Newnham do not use it. Champneys has used it very little, and has noticed that it is liable to increase the coma. Dakin remarks that, although it has given him most excellent results, they have been no better than by the rapid completion of labour with chloroform. Eden and Fairbairn only advocate its use when the symptoms are not urgent. Horrocks has never seen it do any good. Spencer thinks highly of it and finds it checks the fits better than any other drug he has tried but considers half a grain too large a dose and has seen symptoms of severe poisoning when given in doses of half a grain. Tate considers it very valuable if the fits are not very frequent. Croft is in favour of it if the renal embarrasment is not marked. Kynoch is uncertain

as to its effect on the child. Munro Kerr never gives it in labour but only before or after. Jardine has entirely given up its use. Stephenson thinks it is dangerous if the right heart is inclined to be overloaded. Nicholson gives as much as a grain at a dose and repeats with half a grain until the thyroid extract comes into action, and thinks that its beneficial result is due to its effect on the arteries, as in a large dose it is the most prompt and powerful vaso-dilator we have. Herman is in favour of it as it does not require the continual presence of the doctor, and it is safer to put a patient into a deep sleep with morphia than to keep up the inhalation of chloroform for several hours.

Pilocarpine. Is said to prevent the recurrence of fits. Its peculiar danger seems to be its liability to cause œdema of the lungs and excessive secretion, so that the patient may be practically drowned. The majority of my correspondents do not use pilocarpine. Bonney always gives it and has never seen any ill effects. Champneys, Eden, Herman, Lyle, Spencer, Tate and Williamson think that it should not be used, it being a very dangerous drug. Croft prescribes it in the premonitory stages. Haultain is in favour of it. Haig Ferguson and Brice Smyth frequently use it as an adjunct to other treatment, and have seen no ill effects from it. Stephenson thinks it is useful but in a limited field. Pearson has seen great benefit from its use.

Purgatives. These act by lowering the arterial tension, removing any scybala that may be a source of reflex action and expelling some of the poison. The majority of the authorities I have heard from, whilst stating that they give purgatives as a routine treatment, give no particular reason for so doing. Herman sees no reason for supposing that purging does any good, but, on the contrary, thinks it is more likely to do harm. He advises against it. Jardine prescribes salts, and states that he has often seen croton-oil fail and on two occasions cause œdema of the glottis. Champneys and Eden, believing that the poison may be generated in the digestive tract, strongly advocate purgatives. Fairbairn and Lockyer think that purgatives are only indicated when the case is not of an urgent type. Newnham never gives purgatives. Nicholson believes in mercurial purgatives only. Kinkhead, Gibson and Wilson prescribe enemata, while Fothergill and Kynoch are in favour or rectal lavage, especially if the patient is comatose. Rectal lavage is best performed by using at least a gallon of hot water. A large funnel is attached to one end of a rubber tube four feet long. The other end is passed into the rectum. The funnel is raised and water is poured into it till no more

will flow. The funnel is then lowered and the return water received in a pail. This process is repeated till the return water is clear and is then continued until the return water becomes bile stained.

Thyroid extract. This substance aids the metabolism of nitrogenous substances, the formation of urea, which is a powerful diuretic, and is a powerful vaso-dilator, and therefore favours renal activity. Nicholson gives 40 grains of the extract and follows it up soon afterwards with a similar dose and continues till signs of "thyroidism" appear. He suggests that the drug might be given hypodermically or per rectum to an unconscious patient. On reference to the answers sent in I find a very large majority have had no experience of thyroid administration. Croft has used it with no effect. Maclean has used it three times with beneficial effect. Haig Ferguson has found it to be a good diuretic. Ballantyne has used it and thinks well of it. Kynoch noted that in a case of albuminuria and pregnancy it had no appreciable effect in diminishing the output of albumen or increasing the amount of urine.

Veratrum Viride. This drug lowers the blood-pressure by dilating the arteries and depressing the heart. It is also said to promote the activity of the skin, to lower the temperature, to relax the cervix and to promote diuresis. It is administered hypodermically for an initial dose of 20 minims of the fluid extract, followed by 10 minim doses every half-hour until the pulse keeps below 60, since convulsions are practically unknown with such a pulse-rate. The average mortality in America is between 20 and 25 per cent., whilst Parvin collected 284 cases treated with veratrum viride with a death-rate of 8 per cent. This Herman thinks does not represent the true value of the drug since only successes lead to publicity.

It is contra-indicated when the pulse is weak and irregular; it may cause vomiting and collapse which, should they ensue, are best treated by alcohol or morphia. The patient must be kept lying down when under its influence. Kynoch states that he only gives three doses and that if the pulse-rate does not come down appreciably after this he thinks there is no use in continuing it. Croft has used it recently in a few cases with benefit. Rayner and Edgar give it in cases where the pulse is strong and rapid. Russell speaks unfavourably of its use. Stephenson remarks that it "modifies and relieves more directly and beneficially than any other drug I have known the vascular derangement that endangers life." Jardine has entirely given up the use of the drug, and Swayne often uses it. Mangiagalli reports 18 cases treated by this drug with 17 recoveries.

2. By Venesection.

This, one of the oldest remedies, is advocated because for a time, at any rate in some cases, it reduces the frequency of the fits. Charpentier states that in 210 cases it reduced the frequency of the fits in 43·8 per cent. and increased the frequency in 21·8 per cent., whilst in 34·4 per cent. it had no effect. The value of this treatment, however, appears in most cases to be doubtful, although under certain circumstances of over-dilated right heart and engorgement of the lungs, it is of undoubted value. Those in favour of it base their opinion on the fact that it lowers arterial tension and abstracts some of the poison. Whitridge Williams thinks that venesection is indicated in all cases where delivery of the child is not followed by cessation of the fits. He abstracts 500cc. of blood and injects 500cc. of saline solution, thus for all practical purposes removing a quarter of the total quantity of the poison circulating in the body. If anæmia causes the fits bleeding would seem to be contra-indicated, and Herman quotes some figures of Tarnier and Chambrelent which show that the mortality with bleeding is 43·2 per cent. and without 29·7 per cent.

On reference to the replies to my circular I find that the great majority think that bleeding should only be employed when great cyanosis is present and should then be followed by a saline injection. Blacker, Lockyer, Fothergill, Munro Kerr and Russell are in favour of it as a routine treatment followed by saline injection. Spencer considers that in the majority of cases the patients are not in a fit condition to stand it. Kynoch bleeds if drugs do no good and Herman thinks but little of the theoretical argument that it is of use because it reduces the high arterial tension, since this hypothesis assumes that for a patient with eclampsia high arterial pressure is a bad thing, whilst, for all we know to the contrary, it may be of benefit. But the fact that bleeding does reduce the frequency of the fits leads him to think that it may be of temporary benefit. Swayne is greatly in favour of it.

3. By Saline Injections.

The saline injection acts by relaxing the arterioles and lowering the blood-pressure with a consequent greater supply of blood to the glomeruli of the kidney and renewal or increase of the urinary secretion; marked diuresis, however, does not often follow till 24 or 36 hours after the injection according to Nicholson. It also causes diaphoresis and, of course, dilutes the poison. Jardine, who has written extensively on the subject has

succeeded by its use in lowering the mortality of eclampsia in the Glasgow Maternity Hospital from 47 per cent., at which figure it stood for the 15 years previous to its introduction, to 17 per cent., the mortality for the last three years; the patients in both cases belonging to the same class. Jardine uses no other method now except administration of magnesium sulphate and chloroform, and the latter only when any manipulations are taking place.

The saline injection is made up of acetate and chloride of soda, one drachm of each to the pint. As a rule Jardine runs it into the cellular tissue under the breasts at a temperature of 100°F. A douche-can or funnel, four feet of rubber tubing and a small aspirator needle are all that is necessary. The water should be boiled before use. Two pints should be injected at a time, and repeated if necessary.

On examining the answers to my circular I find they can be divided into four classes:—(1) Saline is injected to take the place of the blood abstracted by venesection, which is employed for plethora only; (2) bleeding is advocated as a routine measure with the intravenous injections to follow (a reference to the section on *Venesection* will give the authorities); (3) saline infusion is thought to be contraindicated—Kinkhead, McCall and Newnham do not use it, and Spencer is not satisfied that it does any good; and (4) the treatment is used as a routine measure and thought highly of by Robinson, Martin, Stevens, Targett, Tate, Eden, Hellier, Croft, Rayner, Wallace, Wilson, Ballantyne, Edgar, Haig Ferguson, Kynoch, Munro Kerr, Russell, Campbell, Brice Smyth, Purslow, Wright who uses it in collapse, Lyle in anuria, Stephenson principally for after treatment, and Williamson, who uses it as a diuretic only.

4. By Baths and Packs.

Hot water bath. A method of treatment advocated by Breus. It cannot be used if delivery is near, and it is difficult to use if the patient is restless. The reported results are good. The patient is wrapped in a sheet and put into the bath, the water being kept at 102°F. or a little higher for half an hour, then taken out and wrapped in a blanket, then more blankets wrapped round her and she is then allowed to sweat for two hours. Herman thinks it is worth trying in early cases of labour or after labour, and that it is especially called for when a patient is dying from coma, the fits have ceased, the pulse is beginning to fail, and the temperature is normal or subnormal.

Hot air bath. This acts in a similar way to the hot water bath and is easier to manage.

Hot pack. This is the easiest method, and can be used by wringing a sheet out of very hot water and wrapping the patient in it, wrapping macintosh round this, then putting hot water bottles all round her and lastly enveloping the whole in blankets. Blacker and Bonney use hot air baths when they can, Boxall and Rayner when there is anuria, Lyle when there is œdema, and Hellier when there is coma after delivery. Champneys and Eden chiefly in the premonitory stages, and Spencer has used them many times with benefit. Croft, Fothergill, Wallace, Russell, Jardine, Campbell and Nicholson (the latter uses hot fomentations over the lumbar regions in addition) all use the hot pack as a routine treatment, also Maclean when there is a marked œdema, and Ballantyne if the case is very severe. Hot packs or hot air baths are used by Dakin after delivery, Haig Ferguson either then or in pregnancy and the early stage of labour, Donald when the case is severe, and as a routine by Gibson and Munro Kerr unless contra-indicated.

Kynoch uses the hot pack or hot water bath after delivery, in the early stages of labour, or in pregnancy. Targett, Newnham, Wallace, Wright, Kinkhead and Williamson never employ any of these methods.

Cold bath. Herman strongly advocates this treatment in those hopeless cases where, with a very rapid pulse, the temperature steadily rises to 108°F. or so. The patient should be placed in a tepid bath between 70° and 80°F. and kept in it from a quarter to half an hour till the temperature has fallen to 102°F., then be wrapped in blankets and allowed to sweat. He thinks he has seen life saved by it and that its use in such cases is imperative. Andrews and Routh also reply that they would use them under these conditions.

5. Abdominal Cæsarean Section.

The advantage over other violent methods of delivery is stated to be that it is quicker and there is less shock than in the more violent methods of *accouchement forcé* and a better chance of obtaining a living child. Its indication is said to be in those exceptional cases when the cervix is so very rigid that it cannot be dilated sufficiently to get a bag in, but there seems to be not the slightest justification for its performance as a routine measure. Apart, however, from any obstruction of the hard or soft passages, it should only be done in those rare cases where the patient having died during the attack,

a living fœtus can be detected in utero, and, of course, it is then a right and proper procedure.

Herman views it with great disfavour. Spencer remarks that "Abdominal Cæsarean Section is (and always has been) an absolutely unjustifiable operation for eclampsia, the patient can be delivered by rapid dilatation per vaginam in less time and with less danger." And this, more or less, agrees with the majority of the answers I received; a small minority not commenting on this particular subject. Haultain has performed the operation once with an unfavourable result. Published statistics show a death-rate of 47·7 per cent.

6. Vaginal Cæsarean Section.

Dührssen considers this operation easier than the application of forceps, dilatation of the cervix by Bossi's dilator (although he has never tried this method), or craniotomy, and in his hands it takes five minutes, whilst he maintains there is not the same danger of lacerating neighbouring tissues as when using steel dilators. It is performed as follows:— A circular incision is made through the mucous membrane of the vaginal portion of the cervix close to the fornices and extended into each lateral fornix for half an inch. The cervix then being pulled down with a volsellum, is divided in the middle line in front and behind, the bladder being held back with a retractor. The anterior incision is then carried up as far as is necessary, carefully avoiding the peritoneal cavity. An opening 8cm. to 12cm. in length is obtained, which gives room for the fœtus to be delivered by version or forceps. The bleeding is controlled by forceps or the uterine vessels may be tied, the placenta and membranes removed, a gauze tampon placed in the uterus and the incisions closed with catgut. The operation is recommended in pregnancy or early labour where the cervix is difficult to dilate owing to its rigidity. In reply to the circular the majority think the operation quite unjustifiable. Munro Kerr has peformed it in the case of a rigid cervix with success and found it very easy.

7. Accouchement Force.

De Ribes' Bag. If the os is large enough to admit two fingers the bag can be inserted at once, if not the cervix has to be dilated with Hegar's dilators or tents; the bag acts as a slow dilator and takes, as a rule, four to five hours to thoroughly dilate the cervix.

Before using it one must be careful to ascertain that it does not leak and can bear the pressure of water, also it is necessary to know how much water it will hold; it is a good way of dilating the cervix and will not injure it. It is used either before labour comes on—if the cervix will not dilate,—or to hasten the dilatation of the cervix. The following use it on certain occasions: Andrews, Bonney, Champneys, Eden, Dakin, Fairbairn, Horrocks, Robinson, Routh, Spencer, Targett, Tate, Williamson, Boxall, Hellier, Maclean, Campbell, Wallace, Wilson, Wright, Haig Ferguson and Nicholson.

Manual dilatation (Harris's method). The patient must be deeply under chloroform. The index finger having been passed through the os the second finger is passed in by its side. Then the second finger is removed, and the thumb pushed past the index finger with a similar motion as is employed in snapping the fingers. The cervix is then dilated with the index finger and thumb, and the second, third, and fourth finger gradually introduced. If the cervix is rigid great force will be required, and there is a danger of lacerating the cervix, and a resulting death from sepsis or bleeding. Bonney, Champneys, Fairbairn, Lockyer, McCall, Robinson, Spencer, Stevens, Gibson, Williamson, Boxall, Croft, Fothergill, Hellier, Maclean, Newnham, Rayner, Wallace, Wilson, Kirkhead, Wright, Ballantyne, Edgar, Haig Ferguson, Kynoch, Nicholson, Stephenson, and Jardine all employ this method on occasion.

Bossi's dilator. There are various steel dilators in use, but this with four blades and Frommer's, which has eight, are the best known. Bossi claims for this instrument, which he has used since 1890:—

1. That it dilates the cervix in any stage of pregnancy and in any condition with certainty and success.
2. The time taken in dilatation can be regulated from ten minutes upwards.
3. It is under the operator's control and affords both a mechanical and dynamic action.
4. It can be used by any private practitioner.
5. It entails no subsequent sutures.
6. It causes no fatigue to the hand.

Dührssen criticises the instrument severely after an exhaustive study of the reported cases. He admits that he has never used it, but states that it is dangerous, inefficient, useless, uncertain, since in every case sufficient dilatation cannot be obtained to get a living fœtus. He thinks that the lacerations which may cause death from

hæmorrhage or sepsis are uncontrollable. Bossi maintains that if the middle and index fingers are kept in the cervix dilatation is supervised and laceration may be entirely avoided. A reference to the reported cases shows that when the cervix is taken up there is very little risk of laceration if proper care is used, but when the cervix is not taken up then, owing to the prongs not passing through the internal os, there is greater danger, especially if the cervix is drawn upon to steady the uterus with a volsellum. About three minutes for each centimetre of dilation appears to be the best speed to use.

The advantages of manual dilatation are that the operator, as he is only using the fingers, can tell exactly what he is doing. Its disadvantages are the time it takes, the difficulty, at times amounting to impossibility, if the cervix is rigid, and the exhaustion to the hand. Blacker, Spencer, Martin, Ballantyne, Haig Ferguson, Haultain, Kynoch, Munro Kerr, Russell, Jardine and Byers have all used the instrument and speak well of it, the latter stating that he has found it of great service and is inclined to interfere sooner, obstetrically, in these cases than formerly. Croft, after trying Bossi's dilator, prefers his fingers.

Cervical incisions. For rapid delivery Dührssen has lately advocated the value of deep multiple cervical incisions, and claims that he can always extract a living child afterwards; that the incisions are controllable and less likely to cause bleeding or sepsis than steel dilators. Other authorities advise against the operation since much surgical skill is required. It also appears that the extraction of the child will often seriously increase the incisions; the parametrium may be widely opened and the uterine artery torn. Effacement of the cervix is said to be absolutely necessary, and therefore the operation is especially applicable to primiparæ. Four cuts are usually made in the four quadrants with scissors up to the vaginal roof. Jardine incises the cervix if it is rigid and there is any difficulty with Bossi's dilator in dilating, and Haultain advises free incisions if labour has not commenced, and Bossi's dilator shows any sign of causing tearing.

8. Delivery with Forceps or Version as early as possible.

By this method of treatment the attendant relies entirely on drug treatment until the cervix is sufficiently dilated to deliver by forceps or version. A list of those favouring this line of treatment will be found below:—

Herman stands alone in contending that the only proper and

safe treatment is to do absolutely nothing unless some complication other than eclampsia calls for further treatment. Cases of eclampsia before or at term, can be divided into two classes:—(1) Where labour has not yet come on. (2) Where labour has come on. I now propose to try and analyse the answers to my circular in order to make it as plain as possible what line of treatment each authority recommends.

Where labour has not yet come on.

Induce labour. Sir John Williams, Eden, Fairbairn, Williamson, Croft, Newnham, Haultain (if before six weeks from term), Stephenson, Byers, Gibson, Kinkhead, Campbell, Jardine and Ballantyne, the last three if fits are severe.

Do not induce labour. Andrews, Lockyer, Herman, Stevens, Fothergill, Ranken Lyle, Maclean, Purslow, Ballantyne, Haultain (if within six weeks of term), Munro Kerr, Nicholson, Jardine, Pearson.

Hasten labour. Blacker, Bonney, Dakin, Horrocks, McCall, Routh, Champneys, Tait, Hellier, Rayner, Wallace, Wilson, Wright, Haig Ferguson, Russell and Spencer, who says, nevertheless, that he is not satisfied that this is good treatment if the os is not dilated.

Leave the case to nature. Unless it is indicated that more urgent treatment is wanted:—Boxall, Duncan, Targett, Donald, Edgar, Martin, Kynoch, and Brice Smyth.

(I include the last two paragraphs because I think from the replies many who merely write hasten labour mean they would induce and those leaving the case to nature mean they would not.)

Where labour has come on.

Wait till the cervix is naturally dilated and then deliver with forceps or version. Sir John Williams, Boxall, Horrocks, Targett, Croft, Donald, Fothergill, Rankin Lyle, Campbell, Gibson, and Brice Smyth.

Manual dilatation with forceps or version. Lockyer, McCall, Croft (if cervix does not dilate properly), Newnham (22 cases without a death), Wilson, Stephenson, Pearson and Nicholson.

De Ribes' bag with forceps or version. Andrews, Bonney, Dakin, Fairbairn, Routh, Targett, Eden and Duncan (if fits don't stop with drug treatment), Tait, Campbell and Fothergill (if cervix rigid).

Bossi's dilator with forceps or version. Blacker, Martin, Haultain, Munro Kerr, Russell and Byers.

Manual dilatation or De Ribes's bag with forceps or version. Boxall, Williamson, Herman, Hellier, Maclean and Wallace.

Manual dilatation or Bossi's dilator with forceps or version. Bonney, Ballantyne, Kynoch, Jardine and Kinkhead.

Spencer writes that he has adopted all the above measures except incising the cervix and Vaginal and Abdominal Cæsarean Section.

Champneys hastens labour so far as is consistent with gentleness. "Some cases require the immediate evacuation of the uterus by any or all the methods mentioned."

Sir John Williams writes:—"For many years I have induced labour in all cases in which convulsions had set in. . . . The method employed usually was the introduction of bougies, not for two or three inches but for their whole length, and rupture of the membranes. I did not interfere until the os uteri was dilated and used no artificial means of dilating it except in those in which I induced labour by tents, a method I think highly of. When the cervix had been dilated I used forceps or not as seemed desirable in the individual case."

Herman allows no interference of any description, and in the case of the child being dead, would certainly let the woman die also without delivering her, as he holds that the woman has more chance if she is left alone than if she is delivered. At the International Congress in Geneva in 1896 the weight of opinion was in favour of emptying the uterus as quickly as possible.

The great reason for emptying the uterus is to stop the fits, but whether it does so in the majority of cases is a matter of doubt. Herman has collected over 1,500 cases, and by a careful examination of most of the original papers proves conclusively that

The fits continue *after* delivery in ...	52·5% of the cases.
The fits stop *on* delivery in	47·5% „ „ „

But it may be argued that the *danger* is lessened by emptying the uterus, although the fits do not stop, since the mortality of those treated actively is less than that of those treated by expectant treatment, and that with active treatment the case becomes one of post-partum eclampsia, which is the least dangerous of any variety. To test this Herman takes the results of over 1,600 cases collected from various sources, and finds that the mortality with active treatment is a little less than that of expectant treatment, and even if recent cases only are taken where the increased antiseptic precautions are naturally in favour of lowering the mortality of active treatment, the difference of 2 or 3 per cent is so small that if

hurried delivery were indiscriminately practised by all who attend labour in all cases the mortality arising from operative delivery would soon overbalance the trifling and doubtful benefit of emptying the uterus.

At the International Congress at Paris, in 1900, Porak gave the mortality for *accouchement forcé* as 6·3 per cent., and Bumm states that the mortality from forcible delivery is less than by any other method of treatment.

How, then, is one to reconcile all these different statements and results? Why should one man get his best results with the most forcible means of delivery at his disposal, whilst another's experience shows that exactly the opposite is true, even making every allowance for the element of chance and the degree of poisoning? Is it possible, as was suggested in the critical review on the causation of eclampsia, that eclampsia is in reality, like puerperal fever, a symptom of a number of separate and distinct diseases, and therefore the results of treatment might differ according to which variety one was treating?

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LIST OF THOSE WHO REPLIED TO CIRCULAR.

LONDON

Sir John Williams, Bart.
Dr. Russel Andrews
Dr. Bell
Dr. Victor Bonney
Dr. Boxall
Dr. Champneys
Dr. Cullingworth
Dr. Dakin
Dr. Wm. Duncan
Dr. Eden
Dr. Fairbairn
Dr. Herman
Dr. H. S. Hicks
Dr. Horrocks
Dr. Lockyer
Dr. Annie McCall
Dr. Playfair
Dr. Drummond Robinson
Dr. Amand Routh
Dr. Spencer
Dr. Stephens
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