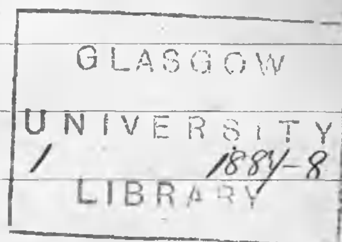

On Puerperal Eclampsia

with

Records of Forty One Cases

Malcolm Black,
M.B. Ch.

20th June 1887

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Having had the opportunity, while House-Surgeon and District Accoucheur to the Glasgow Maternity Hospital, of observing a considerable number of cases of Puerperal Eclampsia, one of the most interesting as well as most alarming and dangerous of the complications of midwifery, I have ventured to throw together some notes on the subject. In all, I have met with 41 cases. Twenty of these came under my own care, most of them in the out-door practice of the (Maternity) Hospital; the remaining 21 I saw in the hospital and elsewhere, under the care of others. Five of these latter 21 occurred in the hospital while I acted as House-Surgeon, and were consequently under my observation throughout. Of the remaining 16, I was present and assisted at the delivery of 6 only; but the other 10, although I had very little if anything to do with their management, all came under my observation at some time either during labour or the puerperium.

From statistics, collected from various authors,

① "On the Diseases of Women" by Dr. Fleetwood Churchhill, 5th Edition page 868.

② Ibiden, page 869

ⓐ Cases I – XX.

ⓑ Case II. p. 34.

ⓒ Case IV. p. 35

ⓓ Case XIV. p. 42

③ "Midwifery", 3rd Edition, page 561.

of over 200,000 labours, Dr. Fleetwood Churchill (1)
found the average occurrence of Eclampsia to be about
1 case in 600 labours, and the maternal mortality (2)
in 328 cases nearly 1 in $4\frac{1}{2}$. The mortality I have
met with is higher, about 1 in 3, for of the 41 mothers
14 died. In the 20 (a) cases for the management of which
I am personally responsible, 6 mothers died, or 1 in $3\frac{1}{3}$.
One (b) of these 6 succumbed to peritonitis 10 days after
labour; another (c) had violent convulsions for many
hours without treatment before I saw her; and a third (d),
also long in convulsions, had a contracted pelvis, requiring delivery by craniotomy, death resulting perhaps
as much from the difficult delivery as from the eclampsia.
Lusk (3) says that in New York during the 9 years 1867/75
the deaths reported from Puerperal Eclampsia were 408,
and that the whole number of deliveries there during that period is
estimated at 284,000. Supposing Churchill's average to
hold in New York, this would give us 474 cases of Eclampsia
with 408 deaths, showing that 8 or 9 mothers died out
of every 10 attacked. ie 1 in $1\frac{1}{4}$ As regards the infantile mortality:

* avy 83%

(a) Cases xiii. & xvii.

in the 41 cases, out of 47 children, there being 6 cases of twins, 29 were born alive, of whom 3 died within 24 hours, and 18 were still-born.

Eclampsia occurs in the majority of cases in primiparae;* in my list there are 34 primiparae* and 7 multiparae. I am not aware that any of the multiparae had convulsions in any previous labours, but I heard of a case recently, from a relative of the patient, where there was a recurrence of the event. The woman had convulsions in her first labour (she was then only 16 years old), her second and third passed off normally, but, on the second or third day after her fourth labour, she was again seized with convulsions and died. I have attended two (a) of my eclamptic patients in second labours, through which they passed without any threatening of a fit.

Although it is said the attack may occur at any time during pregnancy, labour or the puerperium; it seems usually to occur at, immediately after, or very shortly before the onset of labour, speedily inducing labour when occurring before it. In three of the

(a) Case XXXIX.

(b) Case XVii.

(c) Case XXViii.

(1) "Obstetric Medicine & Surgery" by F.H. Ramsbotham M.D. 4th Edition page 490
Foot-note

cases I saw, the convulsions were observed before labour began, in 32 they were found during labour, and 6 were first attacked after labour, one patient not till the third day post partum. Of the 32 cases in which the convulsions were first observed during labour, in 25 they were found early in the first stage, and in some of these they probably began with labour or immediately before it. Of the 3 cases where the convulsions were observed before labour had set in: in one,[a] the attack passed off and labour was deferred for a few days; in another,[b] labour came on in a few hours; but in the third,[c] a case I saw under the care of a medical friend, labour did not come on at all, and, the convulsions continuing, the woman died undelivered without any evidence of uterine action having been set up — the child, a few minutes after the mother's death, being removed by the Cesarian section, when it also was found to be dead. This last must, happily, be a very rare event. Ramsbotham[1] says "I never knew an instance of a

"patient dying under puerperal convulsions with the "foetus within her. Labour seems to be always instituted "soon after the seizure, although it might not "have developed previously". Three cases occurred about the 6th month of pregnancy, 5 at the 8th month, and the rest about full time.

The symptoms which lead us to fear the possible imminence of convulsions in a pregnant woman are chiefly two, general anasarca and highly albuminous urine. The woman also almost always complains of frequent and severe headache, and may suffer from vertigo and impairment of vision. Where these symptoms are present the woman may pass through childbearing without the occurrence of eclampsia, but under such circumstances we must always consider her undoubtedly threatened with this serious catastrophe. Other cases of convulsions occur where such antecedent symptoms are either entirely absent or very little marked.

When the attack occurs, it is a phenomenon well calculated to inspire terror in the beholders and suggest to their minds a hopeless prognosis of the case. In the typical eclamptic fit there is complete loss of consciousness, accompanied by two successive waves of spasm which involve all the voluntary muscles of the body. These waves of spasm begin in the muscles of the orbit and eyelids, and are propagated downwards, invading successively the muscles of the cheeks, lips, lower jaw, neck, thorax and upper limbs, diaphragm, abdomen and lower limbs. The first is a wave of tonic spasm and is immediately followed by or converted into the second, a wave of rapid and regular clonic spasms. In the orbit and eyelids the tonic wave is very transitory, but as it passes downwards its duration increases. The wave of clonic contractions immediately succeeds and passes downwards in the same way, but, unlike the first, it is more persistent above, passing off successively from below upwards, the muscles of the face and orbit being the last to become quiet. The tonic wave lasts perhaps from

15 to 30 seconds, the clonic from 1 to 5 minutes.
Notwithstanding the violence of the convulsive movements, the body does not usually move much as a whole, so that there is little danger of the patient jerking herself out of bed, or injuring herself by violent contact with the bedstead or the wall.
The tongue, if not protected, will be severely bitten.
Urine and faeces are said to be occasionally expelled during the fit, probably from the convulsive contractions of the diaphragm and voluntary muscles of the abdomen and pelvis, but I have never seen this occur.
After the fit is over the patient remains more or less deeply comatose for a variable time, according to the intensity of the attack; from which condition, however, she gradually awakes, rather confused, with no knowledge whatever of what has occurred, and complaining of a severe headache. She may have no further attack; but usually after a variable time the fit recurs, it may be in an hour or two, it may be in twenty minutes. When the fits succeed

one another rapidly, the patient becomes more and more deeply and prolongedly comatose between them, till ultimately she remains continuously unconscious. At times the patient remains thus continuously unconscious after one or two fits, apparently of no great severity. The deeper and more lasting this inter-paroxysmal coma, the greater will be the gravity of the case, irrespective of the number and severity of the fits. On the other hand the patient may become greatly excited some time after a fit, and she may even be found in a semi-conscious condition wriggling and tossing about the bed like a hysterical subject. I have only met one case illustrating this latter condition, and as I had not seen the fits I was at first inclined to fancy that I had only a hysterical phenomenon to deal with, but my diagnosis of eclampsia was confirmed by the fact that her tongue was found severely bitten as well as by the abundant albumen in the urine. In the hysterical convulsion the patient is not quite unconscious; the convulsion

(1) See Playfair's Midwifery, 3rd Edition, Vol. II. page 300. Case XXXVIII. appears however to be an illustrative case of this.

is limited to the limbs and trunk, the facial muscles not being involved; and it is quite irregular, quite devoid of the regular, pendulum-like rhythm of the eclamptic fit. The uterus, it is said, may partake in the eclamptic spasms and labour go on briskly, in fact sometimes so briskly that the child is born quite unexpectedly while the medical attendant is busy looking after the convulsions. This I am afraid is not a common occurrence. In many cases, although the convulsions are violent and frequent, the pains make exceedingly little impression on the labour. After delivery, as a rule, the fits either cease altogether or recur only two or three times and greatly mitigated in severity. Sometimes however they continue after delivery as severe and frequent as before, when the prognosis increases greatly in gravity. At other times, as I have already mentioned, the convulsions supervene for the first time after labour, it may be days after. The woman it is said may die during a fit from asphyxia, caused by the more than usually pro-

(1) See Playfair's Midwifery Vol II p. 301

(2) See Cases

longed tonic spasm of the respiratory muscles, but death usually occurs after a series of fits and prolonged coma, apparently from exhaustion. The child when born alive is sometimes also attacked with convulsions similar to the mother's.

During convalescence the patient has, not unfrequently, an attack of acute mania, not usually of long duration. The dropsy and albuminuria usually disappear rapidly, even in very bad cases. The patient is apt however to suffer for a long time from drowsiness, mental dulness, weak memory and impaired vision.

With regard to the Pathology of Puerperal Eclampsia, the old view held that it is due to cerebral hyperaemia, the direct effect on the brain of increased vascular tension, congestive apoplexy, the overfilled vessels of the brain compressing the cerebral tissues and irritating them or hindering their function; and the condition was accordingly and very naturally treated

by copious and repeated bloodlettings. Upon this there followed the theory of Braun and Frerichs that it, in common with the identical convulsions of Chronic Brights disease, is due to the action on the ~~cerebrum~~ sensorium and motor centres of a poison circulating in the blood, derived from excrementitious matters which have failed to be eliminated by diseased kidneys or kidneys whose function has been seriously interfered with by the pressure of the gravid uterus on the renal veins. This poison was believed to be Ammonic Carbonate, derived from the decomposition of Urea under the action of some ferment. The general anasarca and the presence of a large quantity of albumen in the urine in cases of Puerperal Eclampsia, conditions also of Chronic Bright's disease, were appealed to in support of this view. Cases, however, are said to have occurred where the albumen appeared in excessive quantity only after the convulsions commenced and other cases are quoted where neither dropsy nor albuminuria were present. It has also been denied that Urea is ever decomposed in the blood into Ammonic Carbonate.

Again with regard to pressure on the renal veins, the occurrence of Eclampsia in the early months of pregnancy is opposed to it, at least as an invariable cause.
Then came the theory of Traube and Rosenstein, who reverted to the view that the determining cause of Eclampsia is increased vascular tension, chiefly caused on the one hand by the hypertrophy of the left ventricle of the heart, said to be constant in pregnancy; and on the other by the pressure exercised by the gravid uterus on the abdominal veins.
They hold however that the cerebral hyperaemia caused by this increased vascular tension is only temporary, that it results in an exudation of serum into the brain tissues, which serous exudation or oedema of the brain compressing the capillaries diminishes their calibre and consequently there results an anaemia of the brain, which cerebral anaemia is the proximate cause of the convulsions. That cerebral anaemia will determine convulsions seems to have been abundantly proved by the experiments of Kussmaul and Tenner. From the post-mortem inspections of two cases of fatal Puerperal Eclampsia the late Dr. Angus

Macdonald confirmed the observations of Traube and Rosenstein as to the existence of anaemia of the deeper structures of the brain in convulsion cases (although he found the meninges congested) but no cerebral oedema was noticed. He came to the conclusion that they were right in attributing the convulsions to cerebral anaemia, but that the anaemia is caused, not by the pressure on the capillaries of exuded serum, but by spasmodic constriction of the cerebral arterioles from the action of some poison ~~circulating~~ in the blood upon the vaso motor centres. This poison Dr. Macdonald believed to be some of the waste products of the body that have failed to be excreted by crippled kidneys. Where there has been no renal inadequacy, some irritation acting through the uterine nerves might, he thought, induce the vaso-motor spasm.

Where the urine was examined in my cases it was always, with one exception only, found to contain albumen, usually in great quantity; in some cases blood and tube

(a) Case XLI. p.79

(b) Case XXX

(c) Case XX.

casts were also found in it. In the exceptional case (a) the patient had two convulsions before delivery, and the urine ~~on examination~~ of the next day was found entirely free from albumen. In a number of cases the bladder was found empty or nearly so, the secretion appearing to have been suppressed. In some cases there was no considerable oedema. The dropsy and albuminuria, I have already said, were found to disappear rapidly even in very bad cases. In the report of the post-mortem in one of the fatal cases in my list, occurring in the hospital (c), the brain is described as firm and very anaemic, its ventricles filled with serous fluid and the pia mater oedematous; the kidneys are noted as healthy, and the heart normal in size. In the post-mortem of my last fatal case (c), we found oedema of the subarachnoid space, cerebral ventricles empty, cerebral veins and sinuses congested, and substance of brain extremely anaemic; the heart though normal in size, had the left ventricle

increased in thickness; and the kidneys were free from disease. In the report of the post-mortem in another case[a] in the hospital, evidence is said to have been found of chronic interstitial nephritis.

With regard to Anaemia as a possible cause of convulsions, I may state that on two occasions where I had the sad experience of witnessing death take place soon after labour from haemorrhage, twitchings of the eyelids were observed a few minutes before death although nothing like a general convulsion occurred. If a poison which causes vaso-motor spasm can determine convulsions by inducing cerebral anaemia, Ergot ought to be capable of causing convulsions. A gentleman, a patient of mine, had an epileptiform convulsion following the administration within a short period of ʒss of the Liquid Extract of Ergot, given to check a haemoptysis. This, of course, might be a coincidence merely; but he never had a fit of any kind before or after. Another example of the action of a toxic agent in determining convulsions I once witnessed, in a

series of fits, precisely identical with those of severe typical Puerperal Eclampsia, in a man after a prolonged whisky debauch.

It may well be that the nervous system of some pregnant women is in a more excitable condition than that of others, so that the uterine contractions of commencing labour, or some other comparatively slight uterine or ovarian cause, say the determining cause whatever that may be of labour, may be sufficient to set up convulsions; just as they are brought on in children by teething, slight digestive derangements, &c; and labour and the presence of the foetus in utero will keep up the excitement. Such 'nervous exaltation' is not confined to infants and pregnant or parturient women; I once saw an epileptiform convulsion induced in a big, strong, old Highland policeman by the extraction of a tooth. Where such a predisposition to convulsions exists in the form of an unusually excitable nervous system, a smaller dose than would otherwise be required

x: What proportion?

of retained excrementitious material or other irritable poison will be sufficient to cause an explosion. Vaso-motor spasm, and consequent coma from cerebral anaemia, may be but part of the general phenomena of the fit, of the spasmodic wave propagated along the whole motor track.

An important factor I think in the etiology of Puerperal Eclampsia in some cases, one which may conduce to an excitable condition of the nerve centres, is mental distress. A number of the cases I have seen were in unmarried girls, or women recently married who had become pregnant before marriage, and who were terribly afraid of their condition being discovered by their relatives and others. In order to conceal their condition some of them had resorted to tight lacing of the abdomen, which would have some further influence by impeding the renal function. Perhaps the immunity of multiparae from Eclampsia may be in part due to the greater laxity of their abdominal parietes. In several cases in my list the circum-

(1) "Obst. Med & Surg." 4th Ed. p. 486

lation was further impeded in the venous system by mitral regurgitation.

With regard to Treatment we have to consider when Eclampsia has occurred what to do with the convulsions, and what to do with the labour; also when convulsions threaten during pregnancy what we can do in the hope to ward them off.

As to the treatment of the Convulsions, it is not long since the only important treatment recognised was Bleeding - free general bloodletting, the abstraction of 20 or 30 ounces perhaps, and the repetition of the bleeding in 2 or 3 hours if the fits continued. Dr. F. H. Ramsbotham (1) says "Bleeding is our great "reliance - the lancet is our sheet anchor - and blood "may be taken to a very large extent; it may be "necessary to draw forty, fifty, or sixty ounces, nay "even more, in the course of a very few hours. If ten or

"twelve only be abstracted, the patient seldom obtains
"much benefit; depletion will avail us little, unless a
"decided impression be made on the system generally".
Supposing the old theory of the cerebral hyperaemic causation of the fits to be true, bleeding will do good by inducing comparative cerebral anaemia. On the uraemic theory it might be supposed to do good by getting rid of some of the poison. On the Traube-Rosenstein oedemic theory it should at least give temporary relief by reducing* the vascular tension, thereby permitting the reabsorption of the serous exudation in the brain, and consequently restoring the calibre of the cerebral vessels, and at least the bulk of their contents. But the excessive vascular tension, it is presumed, ought to be soon restored and the serous exudation again poured out; while, as the blood would now be much poorer in quality the cerebral anaemia consequently would be intensified and the patient's condition thereby rendered worse. *On the Macdonald toxically produced spasmodic anaemia hypothesis, bleeding ought to do

(2) Burns Midwifery 7th Ed. p. 456

(1) Churchill on Disease of Women 5th Edition p. 869.

good first by getting rid of some of the poison which, lessening the irritation of the vaso-motor centres, would tend to restore the cerebral circulation; but, further, bleeding has probably a direct influence upon the vaso-motor centres, diminishing vaso-motor spasm, like all other spasm, just as it diminishes spasm of the cervix uteri as witnessed by the old accoucheurs, for Burns says if bleeding wont relax a rigid os uteri nothing will. Some strikingly good results appear to have been got by bleeding. Dr. F. H. Ramsbotham who, we have seen, advocated large bleedings, out of 43 cases (as quoted by Churchill) only lost 3. One would like to know the subsequent history of these women, and how they made up for their lost blood. In some cases of Puerperal Eclampsia the patients certainly seem to be good subjects for bleeding, with flushed face, strong bounding pulse and well-nourished; and we know that many women can lose a large quantity of blood

(1) Playfair's Midwifery Vol II p. 306. 3d Ed.

(a) Case V. p. 36

postpartum without being apparently much the worse. Personally, I have no experience of venesection in eclampsia; but I have seen an accidental haemorrhage cause decided temporary improvement. Dr. Playfair (1) suggests that temporarily some of the good obtained from bleeding might be got by compressing the carotids. This somewhat dangerous proceeding I have seen tried and apparently also with some temporary benefit. (2)

When waste products have accumulated in the blood from kidney incompetency, after clearing out the lower bowel with an enema, the administration of a sharp purge, hydragogue cathartic, will be indicated; — Jalap, or Elaterium ($\frac{1}{4}$ gr.) or Croton Oil (m. i - ii.) if the patient is unconscious and unable to swallow. Pilocarpine nitrat. (gr. $\frac{1}{3}$) injected hypodermically, by causing speedy and copious diaphoresis and salivation, may be of use. I used it once, but the patient died just as it was beginning to act. (3) The salivation is a serious

(1) See Wood's Therapeutics 3d Ed. p. 353.

objection to its use when the patient is unconscious as the saliva may run down her larynx and choke her.

The inhalation of Nitrite of Amyle, which relaxes vaso-motor spasm effectually and promptly, is suggested by the theory of Macdonald and has been tried in postpartum Eclampsia; succeeding as regards the convulsions, a paroxysm being, it is said, instantly arrested by the inhalation of a drop of the Nitrite; but it relaxed the uterus as well as the cerebral arterioles, and serious haemorrhage was the result. If this action on the uterus could be neutralized without affecting the action on the vaso-motor centres, Nitrite of Amyle, and its therapeutic congener Nitroglycerine, might bid fair to be regarded as the most hopeful of remedies in Puerperal Eclampsia, if the spasmodic anaemia theory be accepted; and would certainly deserve a fair trial.

(a) Case IX p. 38

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The most useful agent in relaxing spasm that I haved used is chloroform. Chloroform, if persistently given, will in most cases either prevent altogether the recurrence of the convulsions or greatly abate their violence and diminish their frequency. I was much impressed by the action of chlorofolm in the treatment of a case I had occurring post-partum. The convulsions set in on the morning (a) of the third day after delivery with great violence and recurring every 20 minutes. I stayed by the patient for a considerable part of the day and administered chloroform during the fits and occasional whiffs in the intervals. This appeared to diminish greatly the frequency and violence of the fits, but having occasion to leave her in the afternoon for a few hours the convulsions returned with their original severity and frequency. Returning in the evening I determined to remain beside her and keep her continuously under the influence of the anaesthetic. On a convulsion ensuing I put her deeply under chlorofolm, and thereafter

N.B.

whenever she began to get restless a few whiffs more were given and she would go off to sleep again. Convulsions appeared to be threatening occasionally through the night, but a little more chloroform always seemed to avert the attack. I kept her thus under the influence of chloroform for ten hours, when I allowed her to wake up. ~~and left her On getting~~ On awaking she got up and passed a large quantity of urine. She had no more convulsions, and made a good recovery. Chloral Hydrate in doses of 15 to 30 grains will act much in the same manner as chloroform, indeed it is said to be only a ~~convenient method of administering~~ chloroform, being converted into chloroform in the blood. I usually combine it with Bromide of Potash.

The obstetric treatment of these cases recommended by the authorities I have been in the habit of looking to for guidance in difficulties appears practically to consist in rupturing the membranes whenever the os seems fairly soft and dilatable

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(1) See Leishman's Midwifery 1st Edition, page 761

(2) Midwifery 1st Ed. page 761

and thereafter leaving the labour severely alone. According to them, when the os is fully dilated we may get the forceps ready; but until the head has begun to press on the perinaeum (when we may proceed to use them without much hesitation if the labour should begin to flag or the urgency be very obvious) we had better in the majority of cases devote our attention entirely to the medical treatment.(1) They admit that delivery is of urgent importance, that in the great majority of cases, it will either stop altogether or greatly mitigate the convulsions and that we cannot ~~hope for~~ confidently expect any lasting improvement before delivery, but they are afraid that operative interference, nay even digital examination, may so intensify the paroxysms as to render matters distinctly worse. Especially do they deprecate mechanical dilatation of the os and turning. Thus my teacher Professor Leishman(2) impressed upon us his conviction that "forcible dilatation "of the os is a method of procedure (in such cases)

(1) Medurfery Ed. 3d. Vol II. page 309.

"which can scarcely be admitted as warrantable
"under any circumstances, and the operation of
"turning should never be entertained unless in
"the presence of malpresentation"; and Dr. Playfair
says "forcible dilatation of the os and especially
"turning are strongly contraindicated".

Now as to the propriety of effecting delivery,
if it can be safely done, and as soon as it can be
safely done, there should be little doubt. In a case
of poisoning, generally, the first indication for treatment is to
empty the stomach and so get rid of so much of
the poison as may not yet be absorbed. Here the
presence of the foetus in utero appears to me like
so much unabsorbed poison. Its mere presence in
the uterus is apparently often the excitant of the spasm
centres, and it is constantly pouring into the
mother's blood through the placenta the waste
products of its life and thereby, if her kidneys be
crippled, poisoning her more and more. It is
clearly of the utmost importance to get rid of the

foetus and that at the earliest practicable period. Now, convulsions usually come on, as I have pointed out, early in labour when the os is little if at all dilated (in 7 only of the 41 cases did the convulsions begin in the second stage); and labour in these cases is by no means in the habit of going on rapidly even after the premature rupture of the membranes. If we wait till the head is pressing on the perinaeum before taking steps to finish the labour, nay if we but wait till the os is fully dilated, all the possible mischief may be already done, and the delay in many cases is likely to be disastrous. Now it seems to me that if we put the patient deeply under chloroform, it is quite possible to dilate the os and deliver either by the forceps or the feet, without adding materially to her danger, and yet giving her all the immense advantage of early delivery. Under chloroform I dilated the os (either by the fingers or Barnes' dilators) and delivered by turning

(a) Cases IV. VI. VII. XII. XV. XVIII. XIX.
(b) " IV.

(c) " XVI. XVII

(d) " XXII. XXIII.

(e) " XXIX.

(f) " XXVI. XXX. XXXI. XXVII

(g) " XXXI

(h) " XXVI. XXVII. XXXI.

in 7 cases (a); 6 making good recoveries. The seventh (b) was in convulsions for many hours before coming under my care and died, but certainly not from the delivery which was very easily accomplished. In other two cases (c) of mine, the os was mechanically dilated under chloroform and delivery effected by the forceps, both making fairly good recoveries. In two cases (d), occurring in the hospital while I was house-surgeon, I witnessed the os forcibly dilated under chloroform, with delivery by the forceps and both made ~~excellent~~ good enough recoveries. Another successful case (e) I saw in the hospital where under chloroform the cervix was dilated with the fingers, further dilatation made by traction on head with forceps, and ultimately the child turned and extracted by the feet. On the other hand I was present at the delivery of four cases (f) managed in the same way by mechanical dilatation and extraction by the feet (in one case (g) the feet presented) all proving fatal to the mother; but with respect to three of these (h), as no convulsion occurred during

(a) Case XXX

(b) " XXVI

the operative procedures I think we have some ground for assuming that probably delivery made them no worse. The fourth was known to have been in convulsions for 14 hours before delivery was attempted; and one of the three (in this case chloroform was not used but delivery of twins was very easily effected) had been, it was said, for 10 or 12 hours also in severe convulsions. I am strongly inclined to believe that if the patient be put deeply under chloroform, any exacerbation of the convulsions from the irritation likely to be set up by dilating the os mechanically either by the fingers or Barnes' dilaters in a reasonably cautious manner, and delivering either by turning or the forceps is, in the majority of cases at least, nothing compared with the importance of speedy delivery. I never could make out that any manipulations that I saw used to effect early delivery in eclamptic cases really caused an appreciable exacerbation of the convulsions;

@ Case V.

but in a number of cases it seemed to me that the results might have been more favourable had delivery been effected earlier. When there is unusual rigidity of the os, of course we must wait, but we should keep the patient fairly under the influence of chloroform meanwhile, which is the best relaxing agent of the cervix that I know. Any attempt to dilate the os without the patient being anaesthetized is of course strongly to be condemned. The fatal issue in one of my cases was most likely in great measure due to the injudicious efforts of the student in attendance to hurry the labour by digital dilatation of the os without chloroform. He frequently found his manipulations followed by a seizure, but believing the only chance of safety to the mother and child lay in speedy delivery he persevered in his efforts, and ultimately got the child born shortly before I arrived. The child was born alive and survived, but the mother succumbed. Turning should only be adopted (when not required for malpresentation) where it can be easily accomplished, that is

where the membranes are unruptured, the liquor amnii is abundant and the head readily movable. In an eclamptic case during labour therefore I would say: Put your patient deeply under chloroform and keep her under it or under the influence of Chloral. Clear out her bowels and empty her bladder. And as soon as convenient take your Barnes' bags or your fingers and cautiously and slowly dilate the os and proceed to deliver - also cautiously but get it done without unnecessary delay. I would add: Don't give Ergot or inject Ergotine after delivery. You can get the uterus to contract without it, and, should there be a little post-partum haemorrhage, it may probably, in the light of the statistics of bleeding be to the benefit of the patient. After delivery the patient will require to be carefully watched for at least twelve hours and, if the convulsions should continue, Chloral and it may be Chloroform will be still needed. It will be necessary

to see that the bladder is emptied as required, as the kidneys begin to act more freely soon after the uterus is emptied, and distension of the bladder may keep up the convulsions.

During pregnancy when I have found general dropsy present with excessive albuminuria and frequent headaches, I have put the patient upon a course of Bromide of Potash and diuretics, acting on the bowels occasionally with Pulv. Jalapae Co.; and when labour appeared coming on administered a full dose of Hydrate of Chloral, and kept the chloroform at hand, administering the latter if the patient got at all excited.

The following are records of the cases referred to in the preceding pages. I regret their scanty character, but when anxiously engaged in the treatment of a

terrible emergency, I find that note taking is apt to be neglected. Cases I. to XX. are those that came under my own care.

Case I. Margaret W——. Moffat Mill delivered 21st June 1876. Single. Primipara. At full time. Convulsions in second stage. I attended this case while acting as assistant to the late Dr. Rankin of Airdrie. Patient, a young girl, was much depressed in mind during pregnancy, her marriage to the father of her baby having been prevented by his death. She had considerable general anasarca; urine not examined. Convulsions came on after the os was fully dilated, very severe and frequent. On my principal Dr Rankin coming to my assistance, I put her deeply under chloroform when he delivered her with the forceps of a living child. During the operation she had two convulsions. No convulsions occurred after delivery, and she made a good

recovery, the oedema disappearing in a few days. Child did well.

Case II. Mary T———, 27 King St. City. Single Primipara. At full time. Delivered 13th January 1879. This patient had been in convulsions we were told for 24 hours before we saw her, and I presume therefore the fits began early in labour (if not before). The child's head was then at the pelvic outlet, and I effected delivery very easily with the forceps of a still-born child, recently dead. Patient had two convulsions only after delivery. Peritonitis set in on the 3rd day of the puerperium, terminating fatally on the 10th. Patient's surroundings were extremely wretched and dirty and she got very little attention from her friends.

Case III. Mrs. ———, William Street, Confined August 1879. Married. Second confinement. Delivered naturally of living twins at full time. Convulsions came on day after confinement.

I was called to this patient the morning after her confinement and found her in a convulsion. The urine (drawn off with catheter) contained blood and abundant albumen. She had 2 or 3 convulsions altogether. Recovered.

Case IV. Mrs G. 149 Great Hamilton St., delivered 12th September 1879. Married; 8th confinement. About six months pregnant, might be a little further on. Aged 39. Convulsions began early in first stage, might have been before labour. She had been we were told many hours in violent and frequent convulsions without treatment before I saw her. A medical man who had been called in referred her friends to the Maternity but it was a long time before they came for us. We found her quite unconscious. Under chloroform I easily dilated the os with the fingers and delivered by turning. Patient never

regained consciousness and died in 3 or 4 hours after delivery.

Case V. Elizabeth R. , 19 Little Dove Hill. Confined 29th October 1879. Single, Primipara, aged 19., at full time. Convulsions began early in first stage and very severe. The student in attendance, after having sent off for assistance, promoted the dilatation of the os with his fingers. A living child had just been born when I arrived. The then District Accoucheur was first summoned, and he being out the message was sent on to me; this caused a considerable delay before I reached the house. I found the patient deeply unconscious and Convulsions Continuing at short intervals. Chloroform was administered during the fits, and Chloral was given per Rectum and Several times hypodermically. No improvement being apparent and the patient died next day.

A few minutes before death $\frac{1}{3}$ gr. of Pilocarpine nitrate had been injected. She died just as salivation was beginning.

Case VI. Mrs Elizabeth C. 28 Bright Street, Confined 23rd December 1879. Married. 6th Confinement. Age 35. Convulsions came on in first stage. On arrival found os size of a florin. Under chloroform I dilated os with Barnes' bags and delivered her by turning of a full time living male child. Patient had no convulsions after delivery: recovered.

Case VII. Mrs Mary L. 30 Princes Street, City. Confined 4th January 1880. Married. Fifth Confinement. Age 28. Convulsions began in first stage. Under chloroform I dilated os with Barnes' bags and delivered by turning a still-born child of 8 months' development. Mother had 2 or 3 Convulsions after delivery.

Made good recovery.

Case VIII. Mrs G. 156 Millburn Street.
Confined 10th May 1880. Married. Primipara.
Age 19. At full time. Child male; still-
born, delivered naturally. Convulsions in
2d stage. Had no convulsions after labour
which was just over when I arrived (nurse
in attendance). Patient made good recovery.

Case IX. Mrs M. Springburn.
Confined 16th October 1881. Married. Primipara.
This patient I delivered with the forceps of a large
child with very considerable difficulty. The
child died 7 days after birth from erysipelas
caused by injury to the scalp by forceps.
Patient had convulsions beginning on the
morning of the 3d day after labour. She was
kept well under the influence of chloroform
for 10 hours, after which no more convul-

tions occurred. (See ante page 23).
She made a fair recovery.

Case X. Mrs Dempster Street.
Married, primipara, at full time. Convulsions began in first stage. On arrival I found the os capable of admitting two fingers. Patient was quite conscious between the convulsions. Having ruptured the membranes I allowed labour to go on (chloral being administered meanwhile) for some hours till the os was fully dilated. She was now quite unconscious between the fits. Under chloroform I delivered with the forceps, child still-born, recently dead. Mother died a few hours after delivery. I regretted much not ~~of~~ having operated earlier in this case.

Case XI. Mrs Dempster Street.
Married, Primipara. Labour natural, living child

Had one convulsion after labour. History of Epilepsy. Mother & child did well.

Case XII.

Girl in Macleod St. (Nicholas Place). Confined August 1883. Single. Primipara. At full time. Convulsions began in 1st stage. Patient had 6 or 7 convulsions before delivery. I found the os just capable of admitting the tips of two fingers, but feeling soft and dilatable; head presenting. Patient was immediately put deeply under chloroform when I proceeded to dilate the os slowly with the fingers, until the cervix permitted the passage of the hand into the uterus; a foot was then brought down, dilatation completed slowly by the passage of the body, and the child extracted. No convulsion occurred during the operation, which lasted about 3/4 hour; the patient being kept meanwhile

deeply anaethetised. Two convulsions occurred after delivery. Chloral & Pot. Brom. given. Mother made a good recovery. Child lived three months.

Case XIII. Mrs McK. 121 Drygate Confined 23rd January 1884. Married, Primipara, age 23. At full time, child, male still-born, delivery natural. Convulsions came on in second stage. Labour terminated naturally just before I arrived, child dead. I found the patient struggling and tossing about the bed but quite unconscious. Chloroform quietened her down and chloral and Bromide of Potash were given afterwards. Urine highly albuminous. Patient had bitten her tongue severely. When 3 days afterwards she awoke to clear consciousness, she had no recollection whatever of any occurrence from the time the

fits began. I attended this patient during a second confinement, through which she passed without any threatening of a fit.

Case XIV. Mrs L~~ogo~~ Gatngad Hill. Confined 31st December 1884. Married primipara. At full time. Convulsions beginning in first stage. Contracted pelvis. Craniotomy. Death on 3rd day after delivery.

Case XV. Mrs M. 13 Garden St. Confined August 1885. At 8th month. Married, 8th confinement. Convulsions began with labour. She had five convulsions in ten hours during which I treated her with chloral & bromide. The os being then capable of admitting 3 fingers and seeming readily dilatable, head presenting, she was put deeply under chloroform ~~and~~ when I dilated

cervix with fingers and delivered by turning. Patient had one convulsion after delivery. Next day she recovered full consciousness and had no recollection of anything occurring during the labour. She suffered from weak memory for about 2 months after. Otherwise made good recovery. Child died 4 hours after birth.

Case XVI. Girl at 9 McAlpine St. Single, primipara, at full time. Convulsions began in first stage. Had 5 fits before delivery. Under chloroform I dilated os with fingers and delivered with forceps. Had no convulsions after delivery. Child did well. Mother made good recovery.

Case XVII. Mrs C. Primipara, aged 26,

married, delivered in the Maternity, at full time, on 9th February 1886. I attended this patient for some days before her confinement, and when ultimately convulsions came on and some hours thereafter labour set in, as the accommodation at her home was very limited I had her removed to the Maternity and, with the House Surgeon, looked after her there until she was delivered. She was enormously swollen all over, especially the lower limbs and labia. A mitral V-S. murmur was heard. Urine highly albuminous. Had suffered much from violent headaches since October last and was rendered breathless by slight exertion. Was married last Christmas and was now near the full period of pregnancy. At the time of her marriage none of her friends suspected her pregnancy, she having concealed her condition by tight lacing. She was terribly afraid of her stepfather coming to know of it. I put her on Bromide of Potash and Diuretics (Acetate of Potash, Digitalis, & Cream of Tartar) and purged her repeatedly with

Compound Jalap Powder. Convulsions began about mid day on the 8th February 1886, when I gave her a dose of Chloral gr. xxx. Chloroform was administered occasionally throughout the day, but it was evening before labour appeared to come on. She was admitted to Maternity at 9.30 p.m. Had a fit in the bath and when put in bed was unconscious and very restless. Croton Oil m ii put on her tongue but did not move bowels. Chloroform administered. Os now capable of admitting 2 fingers. I had ruptured the membranes on examination at home. Chloral gr x. given hypodermically and an hour after gr xx. per rectum. Continuing restless chloroform was kept up, patient being put deeply under it when an examination was made. At 1 a.m. (9th Feb.) a medium sized Barnes' bag introduced and expanded. At 3.30 a.m. a large sized bag used and os dilated to about ½. At 4.30 a.m. forceps applied by Dr. Whitton, House-Surgeon and os slowly and carefully dilated and delivery completed at 5.30 a.m. During all the operative procedure patient was

kept well under the influence of chloroform. Child born alive. Patient immediately after delivery became quieter and slept till morning, when she awoke partly conscious but dazed. In evening was completely conscious but had no knowledge of what had occurred from time of first convulsion. Patient went home on 19th Feb. she and her baby fairly well. In a week or 2 longer the oedema had entirely disappeared, although it was a considerable time before she was capable of much exertion. I attended this patient lately in a second labour, through which she passed normally. The cardiac murmur however is still audible and for some weeks before this labour her lower limbs were considerably swollen, although the urine showed no trace of albumen.

Case XVIII. Elizabeth K., confined in maternity 17th July 1886. Primipara, single, age 18, at 8th month of pregnancy. Dr Reid being out of

town I was called to the hospital to take charge of this case. The following notes are condensed from

Admitted to hospital at 7.45 A.m. on 17th July 1886. Factory girl. Had headache & dropsy (legs trunk & face) for last fortnight. On admission os slightly dilated, head presenting, patient dropsical. Complains of headache and is rather dull mentally, not being able to give coherent answers. Urine contains much albumen and there is a mitral v.s murmur. House-Surgeon suspecting her a likely subject for Eclampsia, gave her Magnes. Sulph. ℥vi. & set a special nurse to watch her. Bowels moved soon after. At 4.30 p.m. patient was seized with a severe convulsion and I was summoned and saw her a few minutes later. Patient was immediately put under chloroform and kept under till at 7.30 p.m. when, after having dilated os with my fingers I completed delivery by turning & extracting by the feet. Child living. An hour after delivery she had another convulsion and although anaesthetised she had several others before 12 mid-night.

18th July. At 12.30 A.m. became conscious and said

her head was not so painful and told her address.
Chloroform stopped. Dose Potas Tart. given & ice freely to
suck. She was fond of the ice & took a good deal of it.
At 6 A.M. ℥xviii of bloody urine drawn off. 10 A.M. Quite
Conscious and talks easily though not very Coherently.
20th July. Had 3 Convulsions to-day. Chloroform given.
Violent headache 21st July. Pot Brom. & Chloral mixture,
& Saline diuretics. She had no more Convulsions and
was dismissed on 27th July 1886. well, Oedema and albuminuria
gone. Child feeble.

Case XIX. Mrs C. 118 George St. delivered 9th Sept.
1886 of living twins, both male, at full time. Married, Primipara. I delivered
this case for a medical friend. Convulsions came on in first
stage. Had 3 fits before delivery, none after. Found
os capable of admitting 3 fingers & readily dilatable.
Under Chloroform I dilated os manually and extracted
by the feet. Children born alive and healthy.
Whole of patients body was greatly oedematous (limbs,
labia, trunk, face, hands). Oedema had existed

for 2 months before confinement and it disappeared in 8 days after. On the 3rd day after labour patient was attacked with mania which lasted for a fortnight. Recovered.

Case XX. Mrs Martha W. B. 11 Hatters Row Bridgeton delivered on 11th Feb. 1887. Married, primipara, aged 37. Convulsions began in second stage. Had 2 fits before I saw her and she was then semi-conscious. Legs oedematous, urine highly albuminous and very little in bladder. Os fully dilated. Head presenting at brim in 1st position. Pelvis ~~[illegible]~~ contracted, but head small. I put her deeply under chloroform and delivered with the forceps (with axis tractors) Had to use considerable force to bring head through. Child still-born. (6.30 P.M.) No convulsion during operation. Patient seemed improved before I left, she was asleep and could not be roused, but was breathing quietly. I ordered some beef tea to be given to patient as soon as she should awake, and directed her husband to report to me immediately if ~~[illegible]~~ another convulsion should occur, and in any

case to report to me her condition not later than 10 p.m. He came about 11 and reported that she had had 3 fits since I left. I gave him a draught of Chloral containing ʒi. and directed him to get nurse to administer one half either by the mouth if she could swallow or by rectum if she could not, and the remainder in 4 hours if the fits continued; and to report to me again at 6 a.m. She died at 1.40 a.m. on 12th Feb. Had 5 fits in all after delivery. The chloral had not been given.

The following is the report of the Post mortem examination made for me by Dr Dalziel, 34 hours after death.

External appearances. Body well nourished; rigidity moderate; lividity small. Oedema of legs. Hair of head infested with myriads of lice.

The head being first opened. Brain. Sinuses distended with dark clotted blood. Cerebral veins also markedly distended, especially those over the vertex. The pia mater generally is normal. Sub-arachnoid

space oedematous. There is no marked increase of the cerebro spinal fluid generally. The ventricles are empty. The choroid plexuses and veins of Galen are slightly congested. There were a few puncta cruenta but distinctly fewer than usual. The substance of the cerebrum is paler than usual. Nothing abnormal observable in the pons and medulla. A universal pallor is a most characteristic feature, although the veins and sinuses are distended.

On opening the Thorax the subcutaneous fat is found yellower than usual. The Pericardium contains about 3 ounces of light yellow fluid. The Right auricle is distended with blood clot (post-mortem). Pericardium normal, fat moderate. The Right ventricle is flaccid, its valves normal. The Left Ventricle contains little blood. The thickest part of left ventricle is 1·8 centimetres. The apex of left ventricle is 4·5 millimetres. Valves of left ventricle perfectly normal. Nothing of importance observed in the condition of the aorta. Size of heart normal on both sides.

Left Pleural cavity contains about 5 ounces of fluid

similar to that in pericardium. Over pleura of left lung are a number of extremely delicate fibrinous adhesions. Hypostatic congestion fairly well marked. Substance of lung markedly oedematous, but crepitant throughout. Along the anterior border is a zone of well-marked emphysema. The bronchial mucous membrane is slightly congested, and the bronchi contain a quantity of frothy serum. The Right lung is adherent over the upper lobe by firm, somewhat lengthy adhesions. The pleural cavity contains about 2 ounces of fluid. Otherwise the right lung is in a condition similar to the left although the oedema is not so well-marked.

The Liver is firmly adherent to the diaphragm over the right lobe. The greater part of the surface of the liver presents marked ecchymosis as if from multiple capillary haemorrhages immediately under the peritoneum; these being specially numerous on the upper surface of the right lobe where the organ was adhering to the diaphragm. The adhesions are of old standing. The Gall bladder is nearly empty. The substance of the liver is firm and presents a mottled appearance as if from distension of the interlobular

vessels. **Spleen.** Appearance: Capsule slightly thickened and opaque with numerous fine adhesions characteristic of old standing perisplenitis. The organ is larger than normal. The pulp readily separable from the stroma. **Left Kidney.** Surface smooth. Capsule readily separable, but with minute portions of kidney substance. Cortex is paler than usual. **Right kidney:** Surface smooth. Capsule similar to left. Cortex appears paler than usual and is distinctly abnormally friable. Otherwise kidney presents nothing of importance. **Microscopic** examination of portion of left kidney shows nothing of importance. **Uterus.** Length from os to fundus $8\frac{3}{8}$ inches. Breadth of fundus $4\frac{1}{2}$ inches. Depth $3\frac{5}{8}$ inches. Uterus presents nothing of importance. Placenta had been situated on upper and posterior surface. No signs of Corpus luteum. **Pelvis** (after removal of uterus but not of bladder) antero-posterior diameter of brim $3\frac{1}{4}$ inches; transverse $4\frac{1}{4}$ inches. **Peritoneum and Intestines** normal.

Principal points of interest: the Congestion of upper Cerebral veins and Venous system generally; the pallor of the Cerebrum

and the Ecchymoses of the Surface of the liver.
Child small, but apparently full time.

The remaining Cases (XXI – XLI) were, all under the care of others. The next five Cases (XXI – XXV) occurred however in the hospital during the time (a period of about 3 years) that I acted as House Surgeon, and consequently I had them under my observation throughout while carrying out the treatment of the Acting Physicians.

Case XXI. Elizabeth C. from 251 High Street delivered in Maternity on 25th March 1878. Single Primipara age 22., at full time. I visited this patient at her ~~own~~ home at 8.15 A.M. on 25th March 1878, & found her suffering from Convulsions recurring every 10 or 15 minutes and each lasting about 1 minute. During the intervals she remained in a profound stupor, breathing stertorously at times. Os the size of a sixpenny piece.
Convulsions began about 7 A.M. and patient

appeared then to be taken in labour. She had no convulsions after 9.15 A.M. & from that time she breathed quietly and occasionally talked in an incoherent manner, but she never seemed to regain complete consciousness. The District accoucheur saw her at 10.30 A.M. and took charge of her. He advised her removal to the hospital which after considerable delay was effected, where she was admitted at 5.15 p.m. Dr. Tannahill examined her on admission and found her in a semi comatose state, pupils contracted and hardly sensitive to light, pelvis roomy, vagina moist, os dilated to the size of a halfpenny, membranes unruptured, pains weak recurring about every 10 minutes. He ruptured the membranes and, the bowel having been cleared out with an enema, decided to leave the case to nature for a while. Staff met in consultation at 8 p.m. Os now considerably dilated. Catheter passed; bladder found empty. Patient having been put under chloroform Dr. Tannahill easily extracted with the forceps at 8.45 p.m. a living full time

male child in a state of asphyxia but brought round by half an hour's practice of artificial respiration (Sylvester) varied occasionally with alternate warm & cold baths. A second child presenting an arm was turned and extracted by the feet, a female, which had been dead for some time, the epidermis peeling off trunk and limbs. On removal of placenta, uterus contracted well. Patient's pulse was now almost imperceptible. Stimulants were freely administered, but she never rallied and died at 2-35 A.M. on the 26th. During the previous six weeks she had been observed to have swollen feet and ankles especially towards evening and had complained of constant aching pain in the lumbar regions. P.M. refused.

Case XXII. Jane R. Confined in Maternity on 5/5/78
Single. Primipara. Age 32. At full time.
Admitted to hospital at 5. A.M. on 5th May 1878.
Patient had a convulsion at 11 A.M. and when I saw her a few minutes after, she was conscious, although somewhat stupid, and complained of headache, and abdominal pains. Pulse 84. Feet and legs oedematous,

Membranes not mentioned

urine highly albuminous; os size of a shilling; head presenting.
Convulsions recurred at 1·30, 3·30, 5, & 7 p.m. each time
lasting from 2 to 3 minutes. Pot. Bromid gr XXX given every
3 hours. Vinegar cloths to brow; sinapisms to back of neck,
loins & calves. Chloroform given during convulsions and
occasionally during intervals. At 5·30 p.m. Chloral Hyd.
gr. X. injected subcutaneously and Pot. Bromid ʒi by enema.
Chloral injection repeated in half an hour. At 6·30 p.m.
(rectum having been emptied by enema and bladder by
catheter) Drs. Hugh Miller and Samuel Sloan proceeded
under chloroform to dilate os with Barnes' bags and by 8·30 p.m.
completed delivery with forceps. Child still-born.
After expulsion of placenta, Liq Ext. Ergot ʒii given.
Uterus contracted well. Patient had 2 convulsions after
delivery: treatment Chloroform, Chloral & Bromide.
On 17th May Patient was dismissed well: oedema and
albuminuria disappeared. Highest temperature during
puerperium 99°·7.

Case XXIII. Rebecca C. Confined in Maternity on 22/8/78. Single. Primipara. Age 18.
Admitted to Maternity at 1.30 p.m. on 22d August 1878. Had slight pains previous night. Convulsions occurred at 11 A.M., 11.30 A.M. & 12 Noon. Was then sent off to hospital. Patient had one convulsion (4th) on the way and on entering the hospital was just recovering from another (5th). She seemed then to be conscious although confused and stupid. She had 6th convulsion at 2 p.m. lasting 2 or 3 minutes. Feet and ankles oedematous but no oedema of face or rest of body. Urine highly albuminous. Face pale. Patient was now (2 p.m.) profoundly unconscious. Os size of a shilling, pains weak, liquor amnii scanty, head presenting in first position. Chloral hydrat. gr XL. & Pot. Bromid gr. LX. given by enema. Seventh convulsion at 2.45 p.m. Eighth at 3.30 p.m. Os being now size of a florin patient was put deeply under chloroform, when Dr Tannahill proceeded to dilate os with fingers until forceps could be applied and delivery was completed at 4 p.m. of a living male child with slight facial

'x' ? Swelling ? due to ?

hemiplegia? After removal of placenta, uterus contracted firmly but speedily relaxed occasioning considerable haemorrhage. After the clots were cleared out of the uterus, it was again induced to contract firmly. ½ gram Morphia given by suppository. At 4.30 pm. patient had another Convulsion (9th). Chloroform was administered occasionally and at 10 pm. ½ gr. Morphia suppository repeated. Tenth Convulsion occurred at 11 pm. Throughout the night patient was closely watched by me and Chloroform administered whenever she became restless. 23rd August, No return of Convulsions. Urine still albuminous. Patient sleeps soundly. 24th August. Patient is perfectly conscious now, but weak and inclined to sleep. 29th August. For the last two days patient has been feverish and has had slight tenderness over uterus. Hot fomentations with turpentine applied.
30th August. This morning patient is maniacal; fancies she sees objects which do not exist, has uncaused fits of laughter, &c. Says she feels no pain whatever. Had Pot. Brom. ʒß.; and at night Chloral Hydrat. ʒß & Pot Brom ℈ij. 31st August Slept well last night and appears much better. Repeated

Pot. Bromid ʒß. this morning. Sept. 6th Patient & child now fairly well: dismissed to Deserted Mothers' Home.

Case XXIV. Mrs Mac D. Confined in Maternity on 18/1/80. Married. Primipara. Age 22.
Patient admitted to hospital on 18th January 1880 at 6.30 p.m. and delivered at 8.30 p.m. by Dr. Hugh Miller with forceps. Child still-born. Patient's father & 7 brothers & sisters all died of pulmonary phthisis. Patient showed large strumous scars on neck face & limbs. Had vomited much in morning during last month of pregnancy. During the last fortnight suffered from severe headache and pain in lumbar region. No oedema of feet or elsewhere. Urine highly albuminous. Began to have convulsions on ~~night~~ evening before admission (17th January) recurring every hour or half hour and on admission was in a state of profound coma. Labour easily completed with forceps. Patient had no convulsion after admission to hospital and became conscious ~~but~~ next morning but was very drowsy for a day or two. On 31st Jany fairly well and allowed

Pot. Bromid ʒß. this morning. Sept. 6th Patient & child now fairly well: dismissed to Deserted Mothers' Home.

Case XXIV. Mrs Mac D. Confined in Maternity on 18/1/80. Married. Primipara. Age 22.
Patient admitted to hospital on 18th January 1880 at 6.30 p.m. and delivered at 8.30 p.m. by Dr. Hugh Miller with forceps. Child still-born. Patient's father & 7 brothers & sisters all died of pulmonary phthisis. Patient showed large strumous scars on neck face & limbs. Had vomited much in morning during last month of pregnancy. During the last fortnight suffered from severe headache and pain in lumbar region. No oedema of feet or elsewhere. Urine highly albuminous. Began to have Convulsions on ~~night~~ evening before admission (17th January) recurring every hour or half hour and on admission was in a state of profound Coma. Labour early completed with forceps. Patient had no Convulsion after admission to hospital and became conscious ~~but~~ next morning but was very drowsy for a day or two. On 31st Jany. fairly well and allowed

to go home

Case. XXV. Mrs M. Confined in Maternity on 2/4/80. Married. primipara. Age 22. Convulsions in 2d. of 3d. stage.
Admitted to hospital on 30th March 1880 at 8 pm. and delivered at 12.45 pm. on 2d April. Patient said she had always been strong & healthy but easily frightened. Often had severe headaches. During the last month of her pregnancy had suffered much from dyspnoea and sleeplessness, and had also observed that her feet were somewhat swollen, although there was no oedema on admission. For some days she had suffered from spurious pains. On admission labour had just commenced, and thereafter it proceeded very slowly, the first stage not terminating till 9 A.M. on 2d April. All the previous night pains were very severe and chloroform was frequently administered to abate her suffering. At 9.30 A.M. (on 2d Apl) she had a convulsion, but recovered consciousness completely when it passed off. Pulse 112. At 12.25 pm. patient having been put deeply under

chloroform, Dr. Samuel Sloan completed delivery with the forceps. Patient considerably exhausted after labour; had ʒss Brandy & ʒss Lq. Ext. Ergot. Child living. Patient during the puerperium had a smart attack of metritis but on the 19th Apl. she and her baby were dismissed well. On the day after labour urine (drawn off with catheter) showed a trace of albumen. Patient had only one Convulsion.

I was present at the delivery, in the next 6 cases under the care of others (Cases XXVI - XXXI).

Case. XXVI.

Girl in Airdrie, attended by Dr. Rankin delivered . . 1877. Single. Second Confinement. At 8th month of pregnancy. Patient, a pit-head worker, was a robust girl. Her lower limbs and trunk were greatly swollen and she had been complaining for some time of severe headache. When I saw her first with Dr. Rankin

she had been having violent convulsions at frequent intervals, we were told for 10 or 12 hours, and she was then deeply comatose. Os admitting 3 fingers and dilatable. Dr. Rankin delivered her very easily by turning of 2 living children. Chloroform was not given, but no convulsion occurred during delivery. The mother never regained consciousness, continued to be convulsed at intervals and died in 2 or 3 hours after delivery. Both babies died next day.

Case XXVII. Mrs. B. 9 Gibson St. Gallowgate, attended by Maternity students with Dr. Alex. Miller, District Accoucheur; delivered 9th September 1878. Married. Primipara. Age 31. At full time. Convulsions began in first stage. Under Chloroform Dr. Miller dilated os with fingers and delivered by turning. Child still-born. Ergotine ʒ iii injected subcutaneously. Convulsions continued (chloroform administered at intervals) and patient died 54 hours after delivery, never having regained consciousness. During delivery no convulsion occurred.

7th Oct. 1879.

Case XXVIII. Girl McA. 29 Brown St. Single. Primipara. Age 18. Severe and frequent Convulsions. Coma. Chloroform and Chloral given without any effect. Attempt made to induce labour unsuccessful. Convulsions continued till she died. I was present when, a few minutes after mother's death, the child was extracted by Caesarian section. Child found to have been dead for some time.

Case XXIX. Mrs J[illegible] Married, 7th Confinement. Convulsions beginning in 1st stage or before labour. Age . At 8th month of pregnancy. I saw this patient delivered in Maternity and saw her frequently from her admission till her delivery. The following notes are condensed from the House Surgeon's report. During pregnancy health said to have been fairly good but during the last 3 or 4 months complained of pain in throat. At 6.30 pm. on 27th November 1884. she began to vomit and almost immediately after that had a convulsion. Had 18 fits during

night and at 11 A.M. next morning (28th) was seen by a medical man who advised her immediate removal to Maternity. Admitted to Maternity Hospital on 28th November 1884 at 12·45 pm. On admission she was comatose but could be partially roused without much difficulty. Breathing stertorous about 24 per minute. pulse 80. Pupils normal with slight reaction to light. Vaginal examination produced resistance. Cervix undilated and unobliterated, corresponding to friends statement that patient was about 8 months pregnant. Urine drawn off, ½ albumen. Her condition varied slightly, patient appearing at times less comatose, till arrival of Dr. Reid at 3·20 pm. Dr. Reid ruptured the membranes and ordered her to have chloral gr. 20. if she woke up sufficiently to be able to swallow and this to be repeated according to her condition. Croton Oil m. ii. in olive oil put on the back of her tongue. At 3·40 patient had a convulsion, clonic spasms of the whole body. Chloroform was immediately administered and the clonic spasms ceased in about 2 minutes, but patient continued

rigid for some time and became very livid. As the rigidity passed off, the chloroform was stopped but as she showed a tendency to twitching of the limbs for about ½ an hour, chloroform was administered intermittently for that time but stopped at 4.10 p.m. when she was more deeply comatose than before. At 6 p.m. her bowels moved freely. Chloral gr. 8. in m. 15 water injected into buttock. At 7 p.m. bowels again moved and chloral injection repeated. Passed urine. During the evening she became rather less comatose. Compression of the Carotids was resorted to for a few moments two or three times and seemed to have a decided effect, patient opening her eyes and becoming partly conscious. At 9.30 p.m. Dr. Reid returned. Patient still comatose as before. He found no dilatation of cervix had taken place and patient showed considerable resistance to examination. Chloroform having been administered, Dr Reid proceeded to dilate the cervix with his fingers. During the first part of the operation patient's breathing became very stertorous, but pulse remained fairly

good. Having dilated the cervix so as to get 2 fingers through it, Dr Reed then (10·20 p.m.) applied his forceps to the foetal head and by traction on it continued the dilatation. After the application of the forceps a considerable amount of haemorrhage took place, and almost immediately patients breathing became much improved and no longer stertorous. The forceps were removed and delivery effected by turning at 10.40 p.m. Child female, premature, dead, weighing 3½ lbs. & measuring 18 in in length. Tanners Ergotine Solution ℳ iii. were injected into buttock and at 10.55 p.m. Placenta was expressed. An Iodoform ʒi. pessary was passed into vagina. 29th November At 12·30 A.m. patient opened her eyes and looked round the room but almost immediately went to sleep again. During the night she woke up 2 or 3 times, spoke, and had 2 or 3 teaspoonfuls of Beeftea. Forenoon. Quite conscious though still drowsy, and speaks with difficulty owing to the swollen and lacerated state of her tongue. Temperature 98° 7., pulse 80. Had milk and beef tea during day. Shows no

tendency to return of Convulsions. Catheter had to be used, urine found less albuminous (⅓ now). Slept a great deal during day. 1st December. Quite bright and sensible, though memory still defective. Says she does not remember anything about yesterday, although she does remember having seen her husband in the evening. 2/12/84. Urine not albuminous. Patient says she never before had any fits. The only thing she remembers in connection with this illness is sitting down and crying after finishing the painting of her house, but how long this was before the commencement of the Convulsions she has no idea. No history of any neurotic tendency in her family can be obtained. 11th Dec. 1884. Patient dismissed well.

Case XXX. Annie B. Single, Primipara, at 8½ month. Convulsions beginning in 1st stage. I saw this patient delivered in Maternity 25/12/84. The following notes are condensed from House Surgeon's Report. Had been a domestic servant and was dismissed when known to be pregnant. Tried to conceal her condition by tight lacing. Never was of a cheerful disposition

but had been very despondent since the death of a sister 3 months ago. First Convulsion occurred at 5 A.M. on 25th December 1884 and was preceded by severe headache and vomiting. Had 10 fits before admission. Admitted to hospital at 2.30 p.m. on 25th Dec. when she was unconscious: tongue much bitten: pupils contracted. ℥i Urine drawn off, albuminous ($\frac{1}{5}$th). No subcutaneous oedema. Os size of half-crown, dilatable, head presenting above brim in 2d position, membranes unruptured. 6.30 p.m. Has had 12 Convulsions since admission. Chloroform was administered during the convulsions and at intervals between them. Tongue protected by spoon handle with cloth wrapped round it. At 7.5 p.m. Dr. Reid examined. He found os 3in diam. head presenting above brim in 2d position but slightly but slightly inclined to 3d. Cord prolapsed and Dr. Reid fancied it was pulsating slightly. Tried to push it up and while doing so patient had a slight convulsion (13th in hospital) Patient being now put deeply under chloroform Dr. Reid applied his forceps taking care not to include cord

in their grasp and made traction but head would not enter brim. So to give child the best chance he deemed it advisable to turn, which was done by introducing hand into uterus. Some difficulty was experienced in bringing down arms and when delivered the child was quite dead. Cord tied and divided. After birth of child uterus contracted well. An injection of ergotine was about to be given, when it was observed that the patient's breathing was very feeble and that she was livid. Artificial respiration was resorted to and ether injected subcutaneously. Patient drew a few breaths naturally, but quickly died. The administration of chloroform was stopped when the breech was born, at least 10 minutes before the patient's death. Placenta was left in utero, cord cut short. Child weighed 6 lbs 11 oz length 20 in: finger nails scarcely reached tips of fingers. Dr. Newman made a p-m. inspection of which the following is the Report: Some inflammatory thickening of that part of the Cerebral membranes adjacent to the superior longitudinal sinus, extending

for about one inch on each side of it was found; this must have been of at least 2 weeks standing. There was some recent oedema of the pia mater. The ventricles of the brain were filled with serous fluid. The brain was firm and very anaemic. Both kidneys were healthy. The heart was firmly contracted; no marked hypertrophy. Hypostatic congestion of posterior parts of the lungs existed; some of it ante-mortem.

Case XXXI. Mrs McGove. 6 McKechnie St Calton attended by Dr Richards Out-door House Surgeon on 15th Sept. 1886. Married. Primipara. Age 22. 6 months pregnant. Convulsions in first stage. Under chloroform Dr Richards slowly dilated os with Barnes' bags and extracted by feet a dead foetus (feet presented). No convulsion occurred during operation. Mother died on 3d day after delivery.

With regard to the remaining ten cases (Cases XXXII – XLI) I was not present at the labour in any of them, but I had occasion to see each of them, at some time, either during labour or the puerperium.

Case XXXII. Mary M. Single, Primipara, aged 24, at full time. Admitted to Glasgow Maternity Hospital on 2d July 1881 at 10 AM. just recovering from a fit. (Following notes condensed from House Surgeon's Report). Fits said to have begun at 5 A.M. same morning, recurring at intervals of 15 minutes. On admission patient greatly excited but unconscious and expression vacant. Os size of a shilling, dilatable. Feet slightly swollen. Urine muddy, dirty brown, loaded with albumen. Rectum cleared out by enema. Convulsions occurred in hospital (1st) at 11.35 AM., (2d) at 12.45 PM., (3d) at 3.15 pm. Treatment: Chloroform inhalation occasionally; nutrient enemata; chloral ʒi by enema after second fit, & another ʒß by enema in 2 hours after. Membranes ruptured at 3.30 pm. when Dr. Hugh Miller

completed labour by expression. After labour treatment continued; chloral ʒss & Pot. Bromid ʒss by enema administered every 2 hours, and nutrient enemata occasionally. Convulsions continued: occurring (4th & 5th at 5 p.m. 2 fits almost continuous, (6th) at 6.30 p.m. very severe, (urine drawn off found as before), (7th) at 9 p.m., (8th) at 10.45 p.m. & (9th) at 12.45 A.M. on 3rd July. As the Chloral & Bromid did not seem to be improving matters, House Surgeon now gave Morphia ½ gr. by suppository, after which the patient slept quietly. At 6 A.M. & 7.30 A.M. patient swallowed some beef-tea. 10 A.M. Had milk. Becoming restless, had another Morphia Suppository (gr ½). Had ~~no~~ no more fits. Dismissed on 10th July, Mother and Child well.

Case. XXXIII. Anne C. Single, Primipara, age 21. Shuttle Street. Convulsions after labour. I saw this patient in labour with the students at her home and advised her removal to the hospital, fearing the occurrence of Convulsions. She was admitted to the Maternity at 10 p.m. on the 2nd January 1881 (and the following notes are from the House Surgeon's report)

On admission gr. XL. Chloral given. At 3 A.m. on 3rd January Child born naturally & patient seemingly well; no Convulsions had occurred. There was great œdema of limbs and urine extremely albuminous, almost solidified on boiling. 7 A.m. (on 3rd Jany.) 1st convulsion, not severe. Chloral gr. 30 gave her rest till afternoon. Bowels relieved. Urine drawn off every 4 hours. At 1.30 p.m. had 2nd fit, somewhat more severe. Chloral gr. XL by rectum. Chloral & Pot. Bromid āā. gr. 15. thereafter given every 2 hours. Fits Continued, becoming more severe. 7.30 p.m. Chloroform inhalations given & Chloral gr. XL. by rectum. No fits occurred after this. Patient's general Condition got worse and she died on 10th January. P-M. examination "showed evidence of chronic interstitial nephritis". Child was born alive and dismissed well.

Case XXXIV. Agnes H. Single, Primipara, age 20. Confined in Maternity, 27th June 1882, living female child. Labour natural. Patient had one Convulsion after labour when I was called over to see

ker. History of Epilepsy.

Case. XXXV. Mrs S. aged 18, Primipara, married. admitted to Glasgow Maternity Hospital on 2d June 1884, at 11·50 p.m. General health average or good. Has been light-headed for last 2 months. Her mother died of Convulsions aged 42. Husband in prison. Labour Completed on 3d June at 12·55 P.m. by forceps. During puerperium had Hyper-pyrexia (Temperature rising to 108°) and Convulsions, when I was called in to see her in the temporary absence of the House-Surgeon. Recovered. 16th June 1884 Dismissed: mother and child well.

Case XXXVI. Mrs Parliamentary Road Confined August 1884. Married. Primipara. At full time. Labour Completed naturally. Child born alive. Convulsions in 2nd stage. The medical attendant sent me message to Come to his assistance. On my arrival found child just born. Patient had no Convulsions after delivery. Fair recovery.

Case XXXVII. Mary Ann McG. 17 Mait-
confined 7th January 1885.
land St. Single. Primipara. At full time. Convul-
sions began in 1st stage. Child still born.
Attended for Maternity by Drs Ritchie & Brewis.
I saw patient with Dr. Brewis shortly after
delivery. Convulsions were continuing, and I assisted
in anaesthetising her for a while. Patient died.

Case XXXVIII. Agnes R. Single, Primipara,
from 15 Farbett St. At 6th month. Child still born.
Convulsions beginning in 1st stage.
Confined in Maternity. I saw this patient with
Outdoor Nurse Inglow at her home (a very wretched one). She was then
in Convulsions and I advised her removal to the
hospital. She was admitted to Maternity at
3.45 p.m. on 16th January 1886. On admission she was
unconscious. Pupils contracted. Had 11 fits before
admission and after admission had 1 in bath.
Os dilated to a shilling. Pains strong. After being
put in bed had another fit and was immediately
put under chloroform. Urine markedly albuminous.

Child born at 5.45 p.m. naturally. Ergotine (Tanner's Solution) ℥.10. hypodermically. Child of 6 months development, still-born, recently dead. Had 3 fits after delivery. Chloral & Bromide given. At the beginning of a fit was put under Chloroform 17th January. Patient Conscious; albumen disappearing. 23rd January. Dismissed well. Vaginal examination reveals a deep laceration extending through nearly the whole of the vaginal portion of Cervix on left side.

[This is a rare example of ~~...~~ rapid natural delivery in an eclamptic case]

Case XXXIX. Mrs Helen McK. from John Knox St. Married. Primipara. Convulsions before labour. I saw this patient with nurses at her home on evening of 10th December 1885. She was not in labour but was about full ~~period~~ term of pregnancy. She was quite sensible when I saw her but it was said she had several "fits"

that day and the previous day. Although there is some doubt about the nature of these "fits" I was inclined to think from the nurses' description that they were really epileptiform and advised her removal to the hospital where she could be watched. Admitted to hospital at 9 pm. that night. For 3 months her feet and legs had been slightly swollen. Urine contained a trace of albumen. Tongue had not been bitten. Put on Bromide of Potash ʒß every 2 hours. No more fits were observed. Delivered naturally on 13th Dec. Child living. On 19th Dec. Patient insisted upon considering herself well and leaving the hospital. Allowed to go (Child well: mother hardly well.)

Case. XL. Mrs C. 24 Dobbie's Loan. Married. Primipara. At full time. Confined 25th March 1886. Convulsions began in 1st stage. Dilatation forcible of os. Twins. Recovery.

I saw this case during puerperium with Dr Watson Out-door House Surgeon, who was then in charge of it. Patient had 3 fits before delivery and 2 after. Dr Ritchie (District Accoucheur) dilated os forcibly and delivered twins, first by forceps & second by feet (both presenting head). Children living. Post-partum haemorrhage occurred. Patient had scarlatina 15 months before confinement and had since suffered from general dropsy. Both children died within a fortnight. Mother recovered. [This case being in my Maternity district & not in Dr. Ritchie's I escaped attending it by mistake.]

Case ~~XL~~. XLI. Mrs Mary G. 63 Middleton Place, Confined 28th Dec. 1886. Married. Primipara. Aged 18. At full time. Convulsions in 2d stage. Delivered by Maternity by Dr. McQuarrie, Out-door House Surgeon, of living twins, both male. First presented breech. Second presented head and was delivered with forceps. Patient had 2 convulsions before delivery, none after.

to oedema. Urine, drawn off day after labour, found without a trace of albumen. Dr. Mc. Quarrie saw the second convulsion and says it was unmistakeably epileptiform. I saw patient with Dr. Mc. Quarrie during the puerperium. Recovery uninterrupted, and children did well.

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