"Puerperal Eclampsia"

being a record of six cases with critical remarks upon the symptoms Pathology and treatment:

by

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M.B: C.M. (with commendation) 1883

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Thesis 13 1890

Introduction

It is both a pleasant and a profitable task for a practitioner "to take stock," as it were, of his knowledge and opinions, concerning any particular disease, and to find out as far as possible how he stands in regard to it.

This is especially true concerning the practice of midwifery. In obstetrical practice emergencies are liable to arise suddenly and often when least expected, and the practitioner should be ready to formulate and determine at once his plan of meeting such emergencies. Of course it is impossible to lay down hard and fast lines of treatment for any case which may arise; but it is only right that the general plan of coping with the well known

accidents and emergencies of midwifery practice should be clearly fixed in the accoucheur's mind.

The difficulty a medical student has in gaining a clinical knowledge of this branch of his profession is to a great extent compensated for by the fact that the science and practice of Midwifery lends itself to this formulation of ideas in a greater degree than does either Medicine or Surgery. The eventualities that are likely to occur are all well known and the methods of procedure recommended by the various authorities are based on well recognised principles and differ only in detail.

After the practitioner has brought this formulated knowledge into practice he then learns how much importance to attach to any sign, symptom, or method of treatment; he acquires the faculty of appreciating details; in other words he gains "experience." Every case that occurs adds

somewhat to this, it may be in a trifling and hardly perceptible degree, but it does increase his knowledge and leaves him better fortified against the next emergency of the kind than he was before.

In this Thesis I propose to relate the particulars of nine cases of Puerperal Eclampsia and give expression to some of the ideas, regarding the pathology and treatment of that disease, which have occurred to me when studying the cases and comparing them with the articles to be found in the various text Books of Midwifery.
In three of these cases I have practically had the sole management, while the treatment of the other three cases was conducted by my principal Dr Irving.

Cases

Case I Multipara – rapid but normal birth in ninth month – Convulsions – death on fifth day

Mrs B. aged 26 years was in her second pregnancy, which was timed to terminate about May 15th 1885. At her first confinement, which took place in August 1881, she suffered from eclampsia; she was treated with hot packs et cetera, and recovered. In the middle of April 1885, at the commencement of the ninth month of pregnancy she consulted Dr Irving about swelling in legs and hands. The urine was tested and found to contain albumen. She was advised to keep from exposure to cold, to live on an almost entirely milk diet, and moderate doses of Tinct: Ferri Perchlor, and Liq. Ammoniae Acetatis were prescribed.

I was summoned at midday on April 30th. Patient was walking about the house and said she had had a few strong pains, but did not complain of anything unusual

I at once ordered her to bed and no sooner had she laid down than a very strong pain came on and the baby was born. The third stage of labour was soon over; I at once put on the binder and got her comfortably into bed and after waiting a short time I left the house.

Two hours later I received a hasty message to visit her, as she had had a convulsion. I found her in a semiconscious state, complaining of acute pain in the epigastrium. Chloral Hydrate in half drachm doses was immediately given by the mouth, but she soon became again convulsed and the medicine had to be administered by the bowel. The urine was expelled during the fits; a little was saved and on boiling was found to contain albumen in abundance. Calomel was given by the mouth and soon acted. In the evening Pilocarpin gr. ¼

was injected subcutaneously. It produced copious diaphoresis and also a considerable amount of salivation and increase in the bronchial mucus. This last caused loud ronchus but did not appear to interfere with respiration

Administration of chloral by the bowel was persevered with and seemed to cause a diminution of the attacks during the night.

May 1st and 2nd were passed without the occurrence of any convulsion; and she partially regained consciousness. The urine was very scanty so hot flannels were applied to the loins and dry cupping was resorted to. Internally Pulv. Jalapae Co. in gr xl dose was given. Notwithstanding all these means the eclampsia returned on May 3rd and continued in spite of the exhibition of Chloral and Bromide of

Potassium. Patient died on May 5th

Case II Primipara in sixth month – symptoms of acute Bright's disease – premature labour dead child – ultimate recovery but with greatly impaired eyesight.

December 26th 1886. Mrs A. calculates that she is in the sixth month of pregnancy with her first child, and has enjoyed good health until ten days ago. On the 17th instant she attended a concert, the hall was very hot and she had to wait a considerable time outside after the performance and so "took cold." Two days later her face was noticed to be puffy and she complained of headache. These symptoms improved during the day time but returned each evening, and for the last few days have constantly troubled her. There has been

slight swelling in the legs and arms.
On December 23rd she noticed an unsteadiness in her eyesight, her headached, and in addition she experienced peculiar shooting pains in her brain.
The following day, 24th I Irving saw her. She could not see at all and the eyes presented the lateral oscillations of nystagmus. There was considerable oedema of the face. The urine was thick with lithates, Sp: Gr: 1030, and it contained a large amount of albumen. Microscopic examination showed urates uric acid crystals, a few blood corpuscles and tube casts chiefly hyaline.
The same evening she was seized with convulsions. The first commenced at 8p.m and a second followed half an hour later. The head was turned towards the left shoulder, the facial

muscles twitched and the eyes were directed upward and to the left. The hands were slightly affected. When seen at 9 p.m. she had regained consciousness and could answer questions. Chloral Hydrate 3ss. was given by the mouth and pilocarpin gr ¼ was injected hypodermically; a large sinapism was applied to the loins. By these means a very copious perspiration was produced and the patient fell into a comfortable sleep.

Dec: 25th She has passed a good night, there have been no convulsions, the eyesight has so far improved that she can distinguish light from dark. Urine. Sp: gr: 1040, abundant lithates, it becomes solid when boiled.

Strictly milk diet. Pulv. Jalap: Co. gr XX.

Dec: 26th Bowels have acted freely but with considerable pain, She has passed

more water and it contains fewer urates Sp. gr. 1030 albumen about a half. Sediment contains tube casts hyaline being most abundant, there are also granular and a few blood casts, along with red blood corpuscles. She could distinguish objects, thus when fingers were held up in front of her she could see one or two and could recognise people standing at the bedside.

Dec. 27th Slight improvement: She can see all the fingers held up in front of her. Urine more abundant - Sp gr 1024, the albumen much less.

January 7th 1887 During the last ten days the patient has improved slightly. She has passed one pint of urine each twenty four hours. The Sp. gr. of the different specimens has ranged between 1022 and 1024. The colour has continued

to be more or less smoky and the albumen has been about a quarter. Dropsy has been general but not excessive, there has been slight ascites. There have been no convulsions but this evening her friends noticed slight threatenings of one. The treatment has consisted of diuretic mixture containing digitalis, occasional doses of pulv Jalapae C to keep the bowels loose and a draught each night containing Chloral gr XV

January 11th ℞ Ferri Perchlor and liq Ammon acetat prescribed, still to continue the Chloral Hydrate draughts

January 24th Dropsy seems to be increasing the iron mixture stopped and a diuretic consisting of Pot: Citrat: Digitalis & Squills substituted.

January 28th For the past week or ten days patient has been worse. The dropsy,

especially the ascites has increased, notwithstanding that the bowels have been continually loose, there being two or three watery evacuations everyday.
The eyesight has also become less acute, being now little better than a mere perception of light.
At 6. p. m labour pains began and four hours later a dead child was born. The skin was loose and macerated indicating that the child had been dead for a week or more. Patient got over the confinement well but she complained of her head and was restless. Chloral gr xx had little effect in relieving her.
January 29th She has had a restless night. Very little urine has been passed and that with difficulty. A specimen gives Sp Gr 1025. is smoky in colour and contains ⅓ albumen. During the evening her bowels acted several

times. This exhausted her very much and
induced an attack of palpitation. Her husband
thought he perceived a slight convulsion, the
eyes being turned up and to the left and fixed
so for a few seconds. Chloral was given.
January 31st Patient looks much worn
today. Tongue dry & brown along the centre,
moist at the edges. She is very restless
and complains of headache and loss of sight.
Has passed a pint of urine in the last
twenty four hours, no improvement in its
characters. Breathing rapid and panting-
Dropsy considerable ascites unaltered
Temperature 102°. Pulse 120. The lochiae are
normal in quantity and kind.
A diffusible stimulant containing
Sp: Ammon: Arom: ℥ Cinchon Co and
Chloric Ether was prescribed.
In the evening she was much better.
Temperature normal & breathing quiet.

February 1st She has passed a fairly good night and in twelve hours has voided a pint of clear straw coloured urine. Sp gr 1008 albumen ⅓. Temperature normal Pulse 90. Tongue moist all over.

February 14th Since the last note patient has gradually improved in every respect except her vision. This is very bad, she can distinguish light from dark and says that occasionally she can see an object. Ophthalmoscopic examination revealed similar appearances in both eyes. There were several haemorrhages in the retina, small in area, & streaked, a great amount of stippling about the yellow spot, and one or two somewhat larger white patches.

She has been passing a normal quantity of urine, having sp gr. 1015-1020 & containing a fair quantity of albumen.

The subsequent history of the case was one of slow but gradual improvement. Ferri Perchlor: was prescribed and she took it regularly for months. The albumen could be detected in the urine for several months,

The eyes were examined from time to time, The haemorrhages disappeared soon, but the white patches & stippling could be distinguished for six months, they then gradually disappeared and the only abnormal character was that the discs seemed too white.

January 20th 1888 Patient has improved considerably in general health & has put on flesh. Her sight has so far recovered that she can walk about unattended but cannot see well enough to read or sew. She can read the largest of Snellen's Test Types at 6 metres ($V = \frac{6}{60}$). Urine is

quite free from albumen and sp gr is 1020.
In January 1890 she aborted after having missed two monthly periods.
In April 1890 she came to see me, she was pregnant again and had missed one menstruation. Urine was normal in character and free from albumen.
June 4th 1890 She looks very well. No albuminuria.

Case III Primipara — Convulsions in the seventh month — Venesection — Induction of labour — Recovery.

February 9th 1888 Mrs P. W. Age 29. pregnant for the first time and has reached the end of the seventh month. She has always enjoyed good health except that for the last four years she has been subject to "fits." Altogether she has had five such seizures. On each occasion the fit has

occurred just after a menstrual period and always about midnight, shortly after she had fallen asleep. During these attacks she has frequently bitten her tongue.

She is stout and full blooded and during the pregnancy she has put on flesh and felt exceptionally well.

A few weeks ago her ankles began to swell and ten days ago there was general dropsy. There was no feeling of ill health coincident with this; she suffered no headache and no disturbance of vision.

On February 6th her husband found her at 8.30 a.m. on the floor and in a convulsion, with blood stained froth coming from the mouth and staining the bed upon which she had slept. A doctor was called in and he administered chloroform which soon caused the convulsion to cease.

He then administered a draught containing Chloral Hydrate gr xv Potas: Brom: gr x.
I saw her an hour later and injected ¼ gr of Pilocarpine and also prescribed a powder of Calomel and Pulv: Jalap: Co:. These had the effect of causing her to perspire freely and later on in the day her bowels were well moved. She fully regained consciousness and could converse; she did not complain of feeling ill. The tongue and lips were sore and swollen. Pulse was 100 + of high tension.
February 7th Although patient expresses herself as feeling well she breathes rapidly and has a troublesome cough. Coarse crepitation is heard over the back of both lungs. Temperature raised a degree, pulse hard and rapid.
She has only passed 3v of urine in the last twenty four hours. On boiling a specimen it became hard from albumen.

During the day the symptoms became gradually worse, notwithstanding the exhibition of stimulating diuretics and expectorants. At midnight I found her in a semiconscious state, her lips were blue, respirations frequent and accompanied with ronchus. All over the back and front of the chest fine and coarse crepitant râles could be heard; she was in great distress and to all appearance dying. A vein was immediately opened in her arm and ten ounces of blood were removed. The relief immediately given was marvellous, the breathing became slower and deeper and in the course of a few minutes the ronchus disappeared. Turpentine stupes were then ordered to the back and front

February 8th The improvement has been maintained, the coughs occasionally

and expectorates frothy phlegm which is sometimes blood stained. Crepitation is heard at the base of the right lung posteriorly, elsewhere it is absent. No dulness to percussion. Pulse 100. Temp: 98.4

February 9th Patient feels better. The urine is very scanty and turns solid on boiling Sp. Gr. of a specimen was 1040, (the urinometer was tested and found correct). The urinary sediment contains abundant epithelial cells and also hyaline and granular tube casts, with blood corpuscles and cell debris.
Bowels are acting moderately well with Potus Imperialis. No headache.
At 5 p.m a soft catheter was introduced through the ostia for about 8 inches in order to induce labour.

February 10th Labour pains commenced at 11 p.m. last night and have continued. I was sent for at 7.30 a.m. and on arrival

found the pains coming on slowly and not very strong. Os moderately dilated and soft. At 9 a. m. the membranes were ruptured but this had no effect upon the feebleness and infrequency of the pains. The presentation was normal, the head being in the first position. During the morning the patient's face became blue, the hands twitched and the eyes were turned up in a manner that seemed to indicate the approach of a convulsion, but the exhibition of chloroform caused the symptoms to subside.

At 1.5 p.m. the child was born. The mother at this time was very blue, breathing was frequent and accompanied by rouchus. The placenta was expressed and very little blood was lost; after this the cyanotic condition of the patient improved. The child gasped several times and the heart continued to beat, but although

artificial respiration was persevered with for more than an hour it was not successful. Froth and blood stained mucus came from the child's mouth.

At 4 p.m. The breathing again became difficult and a very persistent cough harassed the patient. An hour later she became livid and to the onlookers seemed in extremis. A turpentine stupe was applied to the back and a large poultice to the front of the chest, at the same time a jug of boiling water was held under her mouth & nose so that she might inhale the steam. These means seemed to have the desired effect for when seen at 6 p.m. Respirations were very rapid 62 per minute Pulse 120 and Temperature 99:8. the lividity had in a great measure passed away. There was abundant expectoration of frothy blood stained mucus.

February 11th Bowels had acted twice during the night and she had passed more water, but it was not measured. She feels very exhausted Resp. 24 Pulse 116 Temp. 98.4 Crepitations on both sides of the chest, especially on the left posteriorly. She is taking milk and gruel - champagne and Potus Imperialis with astimulating expectorant mixture.

February 12th Urine has increased to over 2 pints in 24 hours, it contains urates in abundance Sp: gr: 1020 and on boiling deposits 1/8 albumen. Patient improving generally Lungs clearing but still crepitant râles are heard on left side. She has no recollection of what took place on the 10th inst:

February 17th Each day since last note the urine has been plentiful Sp gr 1015 albumen almost absent. The chest is nearly free from râles.

She made a good and perfect recovery.
October 26th 1888 Patient has continued in good health since last February. She is now again pregnant and is in the fifth month. At 12 midnight she disturbed her husband; she could not speak properly but moaned and sobbed. After a while she said she thought she had had one of her old attacks. Her husband had not noticed any convulsive movement and she had not bitten her tongue.
Nothing further happened. The urine was repeatedly examined after this attack and until her confinement, but it was always found normal and free from albumen.
February 7th Patient was this day delivered of a healthy female child. She was slightly hysterical after the birth but otherwise everything passed off satisfactorily. She made a good recovery; and throughout there was no albuminuria.

Case IV Primipara - convulsions in seventh month - Induction of labour - recovery with a living child.

January 15th 1889 Mrs B. B. expects her first pregnancy to terminate on March 20th. She has been very well up to last Christmas when she 'took cold' and was very slow in getting better of it.

On Jan'y 13th She legs, feet and thighs were noticed to be swollen, she felt sick and inclined to vomit. The breathing was quick and she had a slight cough; the bowels were acting freely. The urine was found on examination to be highly albuminous, becoming almost solid on boiling. The sediment contained hyaline tube casts and epithelial cells. A diaphoretic mixture and cream of tartar drink was ordered, as well as a purely milk diet and confinement to bed in a warm room.

The next day (Jan: 14th) the nausea was better, but headache continued and she complained of 'mists before her eyes'. These symptoms became gradually worse during the day.

January 15th At 3 a.m she was suddenly seized with a convulsion which lasted half an hour, there being a short interval of semi-consciousness. The tongue was bitten on the left-side. She regained consciousness in about two hours time. Her face and hands were oedematous and she suffered still from the headache and loss of clear vision.

On examining the chest the right lung was less resonant on percussion than the left; the first cardiac sound was prolonged, the second being very much accentuated The pulse was of high tension and 84 per. min Respiration 26. Skin was moist Temp 98.4

At midday she took Calomel gr viii and four hours later a Seidlitz powder. These produced several watery motions.
At 10 p. m. the pulse was 76 per min. and of much less tension than in the morning. Respirations were 24. The Anasarca had in a great measure disappeared, and the nausea & headache had left her. A chloral draught containing gr xv was prescribed.
January 16th Condition of chest is better, the right lung is more resonant and the breath sounds are more distinct. Urine is very scanty she has only passed oz 11 in 24 hours This contains abundant urates, Sp. gr: 1032 albumen about 3/4. Foetal heart can be heard 144 beats per minute.
January 17th Bowels continue to act often but the stool is black & contains a quantity of bloody mucus. Urine passed in 24 hours measures 10 oz: Sp gr 1029

albumen ½. Foetal heart heard distinctly.
At 12 noon she was put under the influence
of chloroform and a soft catheter was
introduced for 6 inches into the uterus.
There was a little difficulty experienced
in doing this on account of the os uteri
being retracted into the hollow of the sacrum.
During the afternoon pains came on every
five or ten minutes. There was a good deal
of sickness from the anaesthetic; and
a muco sanguineous discharge came
from the bowels
At 11 p.m. six ounces of urine were drawn
off by means of the catheter. It was
smoky in colour, Sp gr 1027 and turned
almost solid when boiled. The os had
dilated so as to admit the tip of the finger.
January 18th During last night and to-day
the pains have been weak & infrequent.
There has been a slight increase in the

general oedema, and during twelve hours ending at 9.30 p.m. she has passed only 13½ oz of urine Sp gr 1028, becoming nearly solid when boiled. The bowels were emptied by an enema. She has taken sleep freely, and expresses herself as feeling much better. At 11.30 p.m. No: I Barnes' Bag was introduced into the os, the catheter being removed. This was done under chloroform and without any difficulty. Afterwards a draught of Chloral gr xv was given. Labour pains came on regularly every five or ten minutes

January 19th. At 2 a.m Bag No II was substituted for No I. This was expelled at 2.45 a.m. The membranes were then ruptured and after the amniotic fluid had escaped, bag No III was introduced and dilated with warm water; more water being added as the os dilated. When

the bags were out the pains entirely ceased and only returned when they were replaced. At 12. noon a convulsion came on but it ceased as soon as the patient was put under Chloroform. Half an hour later, while still under the anaesthetic the bag was removed and the labour was completed with the forceps. The child was a small male and weighed 2 lbs 6 oz. The after birth came away without difficulty, and patient seemed fairly well on coming out of the chloroform. At 10. 15 p m. she had passed 10 oz of urine in the 24 hours Sp gr 1026 albumen as before. She complained of a throbbing pain in the head and throbbing in the abdomen. Chlord draught was administered

January 20th Patient had a good sleep during the night. Temperature 98.5, skin acting freely. She passed 34 oz of urine in 24 hrs.

In the early part of the day the specimen had Sp. gr. 1028 contained lithates & very abundant albumen. Later at night-time the amount of albumen was much less.

The subsequent notes of the case are merely a record of increasing quantities of urine with rapid diminution in the albumen it contained.

January 29th She passed 52 oz of urine Sp. gr. 1017. with a trace of albumen. Liq: Ferri Dialysat: was prescribed. A week later there was no albumen to be detected. Coincident with this improvement in the urinary secretion there was a steady convalescence in every other respect. Her sight soon returned to its normal condition. The infant was very delicate and required careful nursing (it is a fine healthy boy to-day May 1890)

Case V Multipara - Convulsions in seventh month of pregnancy - Induction of labour - living child - death of mother.

October 1889

Wm H^n Age 28 has given birth to three children at full time without any abnormal occurence; she has also had two miscarriages.

Five years ago she suffered from dysidrosis and two years later had severe symptoms of lead poisoning, due to impregnation of the drinking water with lead.

October 15^th She was seen by the doctor at 9.30 a.m. and found complaining of severe colicy pains in the right hypochondrium over the situation of the gall bladder. She had vomited once or twice and the bowels had acted freely. She reckoned that she was well on in the

seventh month of pregnancy. For the last two or three weeks she had noticed slight swelling of the ankles & feet. A diffusible stimulant, with aromatics and ℥i: Belladonnæ was ordered.
At 4 p.m. The abdominal pain had almost left her but she had severe pain in her head. She had passed a fair amount of urine but a specimen was boiled and found to be highly albuminous.
At 8.45 p.m. she had a convulsion and when it had passed off she complained of seeing "sparks before the eyes."
At 10 p.m. a severe convulsion came on and lasted thirty minutes. Calomel gr vi and Chloral Hydrate gr xv was administered.
October 16th At 12.15 a.m. there was a slight convulsion but it was rapidly controlled by inhalation of Chloroform.
At 7 a.m. a soft catheter was introduced

into the uterus in order to bring on labour pains; and at the same time Chloral gr XV was given. Later on in the morning the bowels were well moved by Seidlitz powders.

Labour pains soon came on after the introduction of the catheter. At 12 noon Barnes' Bag No I was substituted and the pains grew stronger and more frequent. At 4 p.m. Bag No II was used causing an increase in strength of pains.

At 6 p.m. the os was well dilated, the bag was removed and the membranes were ruptured. It was a footling presentation and the second stage was very quick. There was no difficulty with the placenta. After the labour patient felt very well, her mind was clear and had been so all day. She remained comfortable until 9 p.m. when she was seized with

with very severe pain in the epigastrium amounting to agony. Chloroform was at once administered and continued for two hours; as soon as its effect had passed off she again cried out of the pain.

October 17th at 12.15 a.m. Morphia gr ¼ was injected hypodermically and this was repeated an hour later, but the pain was not relieved.

At 2 a.m. she was again convulsed and these attacks returned at intervals until 4 a.m. They commenced in the right arm, extended down the body to the right leg; the face was only slightly affected, and the left side was quite free.

Potas. Bromid gr XL and m xx ℥ Belladon were given by the bowel.

At 4 a.m. she was deeply unconscious, the pupils were insensitive to light, pulse was

very weak and patient seemed to be sinking. She rallied and the pulse improved until 6.15 a.m. when there was a short but severe convulsion affecting the right side as before. After it had passed off there was great prostration and a very feeble pulse. These symptoms again improved and at 8.30 a.m. colour had returned to her lips; an attack of the epigastric pain coming on, the pulse again failed. These attacks of pain grew less frequent.
At 9.15 a.m. she took by the mouth four ounces of milk with three teaspoonfuls of brandy and a little warm water.
At 10.30 a.m. she was seen by Dr Braithwaite of Leeds. He prescribed two teaspoonfuls of gin in a little milk every hour and a half. Calomel gr v to be followed by Seidlitz powder and steamed flannels to be applied to the legs.
Five ounces of urine were drawn off by the

catheter; it was very smoky in colour & became solid with albumen on boiling. Her pupils were contracted and insensitive. She replied to questions and swallowed her milk and medicine but took no notice of anything.

At 6 p.m. pulse was very weak, 140 per min. Ammon Carb gr v and Inf Digitalis 3ij was given and in an hour the pulse was stronger and numbered 114 per minute. She swallowed some barley water & cream. At 8.45 the breathing seemed to become difficult and gasping in character, the pulse rapidly failed and she died at 9.20. Early in the evening ℞ ¼ grain pilocarpin had been injected hypodermically but without any effect.

Immediately after death a catheter was passed, the bladder was found empty, so that no urine had been secreted for eleven hours.

The peculiar feeling was as if her hands were swollen

Case VI Multipara - seventh pregnancy - normal labour - Convulsions - recovery

March 1890

Mrs W. T. age 40 years was in her seventh pregnancy. Her first child was born sixteen years ago and her sixth five years since. Up to six years ago she had always enjoyed good health, but about that time she began to have severe facial neuralgia and to be troubled with urticaria, ever since, this latter affection has continued to trouble her at short intervals.

Two years ago she suffered from lead poisoning due to impregnation of the drinking water.

During this last pregnancy she has had fair health. In the beginning of January she complained of peculiar feelings in her hands along with slight dyspeptic symptoms. These were removed by an

alkaline mixture containing Sodae Bicarb. and Sp: Ammon: Arom:
On January 11th the urine was tested and found to contain sugar but no albumen Sp Gr 1030.
January 14th Sp Gr. 1026 No sugar & no albumen
January 20th Sp Gr 1030 No sugar, no albumen
February 1st Sp Gr 1031 No sugar, no albumen
She was not seen for a month
The pregnancy was timed to end in the first week in March.
Labour commenced in the early morning of March 3rd. The first stage was very slow but after the os was dilated the pains came on quick & strong and the child was born naturally at 10.30 a.m.
The placenta was expelled naturally and the patient seemed very well. She remained so until 7.30 p. m. when she complained of severe pain in her head and within a few minutes after

was thrown into a severe convulsion.
During the next three quarters of an
hour she had four very severe convulsions.
The seizures commenced in the eyes, then
spread to the face and neck, these being
drawn to the left side, and then affected
the arms and legs.
An enema containing Pot. Brom. ℥ij was
at once administered and a few minutes
afterwards Chloral Hydrate gr XL was
given in the same way. Chloroform
was administered during the night
when any symptoms that might
indicate a convulsion presented
themselves. She had no more convulsions
Calomel gr v-iij were given about midnight
and in the early morning a seidlitz
powder caused a very free action
of the bowels
The urine was drawn off with the

catheter and on testing was found to have Sp gr 1010 and to contain a moderate amount of albumen

During the next day May 4th she complained of pain in her head and neck and of 'sparks' before her eyes. Chloral m̄ xv gr xv doses was repeatedly administered sometimes an equal quantity of Pot. Brom. being added. She regained consciousness but had no recollection of what had happened during the previous evening and night.

She was kept on a strictly milk diet and the improvement was continuous but very slow, the pain in her neck and head remaining for a long time.

On March 8th The urine contained a trace of albumen Sp gr 1030
" " 11th " " " very slight trace " 1021
" " 18 " " " slight trace 1022
" " 22 " " " no albumen 1022

No sugar was detected in the urine after the confinement.
The Patient is now well and makes no complaint of any kind; her eyesight is as good as ever it was.

Remarks on Symptoms &c

These cases illustrate most, if not all of the Signs and Symptoms of Puerperal Eclampsia and the various complications which are apt to occur in that disease.
In three of the cases - ii, iii & iv - the patients were in the course of their first pregnancy. Of the other three, one, i, was in her second pregnancy and had suffered from the disease at her first confinement. The other two patients - v & vi had borne several children, three and six respectively without a mishap. But in each case since the

last birth the patient had suffered from lead poisoning an affection which is generally admitted to have a serious effect on the secreting powers of the kidneys. Each of them also had suffered from a skin disease, in one case, V, this took the form of dysidrosis, in the other, VI, urticaria associated with neuralgia. I do not wish to exaggerate this last fact, but it may have a certain amount of importance when we remember that the actions of the skin and kidneys are intimately allied to one another.

In cases II & IV the patient attributed her illness to having "taken cold." In the former the reasonableness of this is very manifest; there had been exposure to cold frosty air, after having been in a hot room for three hours; and the symptoms manifested themselves the day but one after.

In Case III the patient gave a history of

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nocturnal epilepsy, closely associated with the menstrual function, as evidenced by the times at which the fits had occurred. This is recognised by authorities as a predisposing cause of convulsions during labour and cases exemplifying the fact are recorded by Barnes in his Lumleian Lectures.

The first occurrence that caused the patients to think there was something wrong was oedema. In the first four cases of the series this was general, affecting face arms and legs when noticed or within a day or two after. In Case I it only affected the feet and legs whilst in case VI it seemed to have been more noticeable in the hands. Headache was the first symptom complained of in three of the cases, II, IV & V, while severe epigastric pain was a very distressing trouble in Cases I & VI. Case III is remarkable

for the small amount of actual pain the patient suffered. Notwithstanding her serious condition and her neurotic history she complained of no pain, the only distress she was conscious of was the difficulty in breathing at times.

Interference with vision is a symptom noted in four out of the six cases. It varied in intensity from being described as a "mist" or "Sparks before the eyes", as in IV, V & VI to absolute blindness as in Case II. In cases III & VI recovery of sight was perfect; the reverse of this satisfactory progress in II is due I think to the long continuation of the disease. Had the labour terminated as soon after the outbreak of symptoms as it did in the two other cases the result would doubtless have been better. Ophthalmoscopic examination revealed all the characteristics of bad albuminuric retinitis; but the rapid and almost simultaneous onset of the symptoms

Medical Times & Gazette 1860 Vol II P 127.

The white condition in which the disc remained after the disappearance of the white spots seems due to a partial atrophy. Such cases are described by Mr Power and are attributed to some organic mischief occurring in the central nervous arrangements of vision. Seeing that haemorrhages and transudation of leucocytes occur in the retina we may presume that they are also likely to happen in the neuroglia of the brain and so might be considered as the cause of some of the nervous symptoms in the disease we are treating of, e.g. headache, sickness.

Dr Goodfellow in his lectures on Disease of the kidney mentions an exactly similar case to the one we are at present referring. A young woman, pregnant in her first pregnancy was exposed to cold and soon afterward suffered from puerperal eclampsia and died. At the post mortem examination

there was found "considerable haemorrhagic effusion under the arachnoid and in the meshes of pia mater;" "the gray substance was very dark, the white substance sodden and soft."

The character of the urine in Cases I to V was what is usually expected in puerperal eclampsia; a highly concentrated fluid, depositing a heavy sediment of urates and frequently smoky from the admixture of blood. The specific gravity ranges very high, thus in II & III in some specimens it reached 1040. The albumen is very abundant not infrequently causing complete solidification of the urine in the test tube when boiled. The sediments in addition to urates and uric acid crystals all contained red corpuscles, epithelial cells and tube casts. Of these latter the hyaline were most abundant and

Obstetric Medicine & Surgery Vol: I P. 395.

were to be found from the commencement of the case; granular and blood casts occurred in less numbers and usually after the disease had lasted a while. Barnes lays considerable stress on the presence of granular epithelial casts, as it indicates an affection of the cortex of the kidney; while the hyaline casts and blood corpuscles can be attributed to increased blood pressure alone. This statement seems to be borne out by the slow recovery and long convalescence in Case II in whose urine granular casts were frequent.

The quantity of urine excreted in twenty four hours is a very sure and trustworthy guide as to the condition of the patient. The rapidity with which in Cases III & IV the quantity of urine increased, while the specific gravity lowered, and the albumen it contained

Obstetric Medicine & Surgery Vol I P 393

Spiegelberg Text Book of Obstetrics Vol II P 10

disappeared, after the birth of the child, was very marked and of itself shows, that however strongly the symptoms of Puerperal Eclampsia may resemble Acute Bright's Disease, still there is a great difference and this is directly dependant in some way or other on the pregnant state.

As regards the actual convulsions the only unusual occurrence recorded in these cases is the unilateral character in Case V. Whether this was due to some form of apoplexy in the brain cannot be stated as there was no autopsy. Barnes says that such an occurrence is to be dreaded in puerperal eclampsia as it is one of the most probable causes of death. My experience leads me to agree with Spiegelberg when he states that "it is not possible to distinguish a tonic and

off Cohnheim's Lectures on General Pathology
Volume I P. 526

then a clonic stage in the convulsive seizure.

A very important occurrence in these cases is congestion of the lungs, or perhaps to be more correct, acute oedema. We find it noted in three of the cases ii, iii & iv. In case iii the patient had no more regular convulsions after those which ushered in the ailment but she had several attacks of acute oedema of the lungs, which were characterised by greatly embarrassed breathing, cyanotic appearance, and abundant crepitations to be heard all over the lungs. I shall have occasion to refer to this fact later on in connection with the pathology. There seems to be a causal relationship between this acute oedema of the lungs and convulsions.

In concluding these references to the symptoms I would direct attention

Statistics collected by Barker vide Barnes Obstet Medi
Surgery Vol i P. 407.

Leishman Treatise on Midwifery P. 772 (3rd Edn)

to the marked and alarming alterations in the pulse as noted in Case V. It is recorded that with an attack of the epigastric pain or a threatened onset of a convulsion there was great failure in the strength of the pulse.

In four out of the six cases (II, III, IV & V) the convulsions broke out before labour; the other two, I & VI, were cases of post-partum convulsions. One of these case I was as severe as any of the cases and terminated fatally.

The prognosis in such cases judging from published statistics is that post partum eclampsia is much less severe than when the explosion occurs before or during labour. Prof. Leishman expresses the opinion formed on theoretical grounds, that post partum eclampsia indicates

Spiegelberg Textbook of Midwifery Vol II P. 205-

cf. Barnes Obstet: Med: & Surg: Vol I P 394

"a more grave constitutional affection" Spiegelberg refers to these cases as being less severe and that when they prove fatal "probably other factors were at work". In case i the fact that she had suffered from Eclampsia at her first labour, and the occurrence of albuminuria during the last few months of her second pregnancy seem to indicate that her secretory organs were unable to cope with the extra work that pregnancy entails.

When eclampsia has occurred at one pregnancy there is a risk of the kidneys not quite recovering their normal functional activity. A small amount of albumen is passed with the urine and with each succeeding pregnancy the danger is increased. Case i illustrates this.

In case ii we have a history of abortion in

Barnes Obstet. Med. & Surg. Vol I P. 488

Obstetric Med & Surgery Barnes Vol I P. 406
Text-Book of Midwifery Spiegelberg Vol II P. 213
Science & Practice of Midwifery Playfair Vol II P. 306
Discussion on Albuminuria Glasgow Pathological & Clinical Society. Reprint from Glasgow Med Journal P. Finlayson P. 56 & Professor Leishman P. 62

the second month of the pregnancy succeeding her first at which she suffered so severely. In all probability we may consider this as an example of abortion as a conservative force of nature, as "a practical protest of the system against gestation"

That the danger of Eclamptic patients at subsequent pregnancies is not a certain one is shown by Mrs. P. W Case III who passed through her second pregnancy and confinement without the occurrence of albuminuria and with no ~~[illegible]~~ serious nervous explosion.

Pathology

All the authorities of the present day seem to be pretty well agreed that one of the pathological factors of Puerperal Eclampsia is some form of poison in the maternal blood.

The old theory of fever which attributed it

Lectures on Diseases of Women by Sir J Simpson
Vide Medical Times & Gazette Vol II/60 P. 446

to pressure on the renal vessels finds few supporters beyond the fact that puncturing the membranes is a recognised method of treatment. It is questionable if the beneficial result which often follows this procedure, is due to the reduction in the size of the uterus and consequent lessened pressure in the abdomen or to the fact that nervous energy is directed by it into the normal channel-

What the poison is is still unknown. There is sufficient evidence against the uraemic theory of Braun and its modification by Hercelis, who suggested Carbonate of Ammonia as being the toxic agent, - to make us unwilling to accept either.

Sir J. Simpson although not actually defining the poison seems to indicate it as plainly as our present knowledge of pathological chemistry will allow. He writes "In the blood of the puerperal female - greatly modified as it is

"in the normal states of pregnancy and delivery,"
"and containing as it does after parturition"
"the effete elements of the involving or disintegrating"
"uterus, and the materials for the new lacteal"
"secretion - ferments and agents may possibly"
"exist which are more apt to develope morbid"
"poisons out of the retained renal excretions"
"than happens in other states of the system."

Since commencing practice I have had several cases of lead poisoning, it being a common complaint in the neighbourhood of Huddersfield. In two cases the patients suffered from convulsions and in considering these cases I was struck by the close resemblance they bore to puerperal eclampsia.
Thus a girl of eighteen suffered from severe epigastric pain, quite different in character from the usual lead colic; on two occasions this terminated in convulsions, in every respect similar to eclampsia. At the same

Cf. Lectures on Experimental Pathology by M. C. Bernard
Medical Times & Gazette Vol II/60 p. 225.

time albumen was moderately abundant in the urine. For some time the nature of the affection remained obscure. There was no blue line on the gums; but, on having the drinking water analyzed, lead in considerable quantity was found. Means were then taken to obviate this and she rapidly recovered, the albumen entirely disappeared and she has remained well ever since.

Analogy of symptoms is perhaps not a good guide in forming pathological opinions as to the causes which give rise to those symptoms. In comparing this case of poisoning by a metal with some of the phenomena of puerperal eclampsia I am not so sure that we are not advancing on parallel lines.

A woman from the time she becomes pregnant has a new and rapidly developing organism which draws its supplies of nutriment from her blood and returns its waste products into the same,

and this in ever increasing quantities. Nor does this express the whole truth, for the same could be said of a rapidly growing tumour. In the case of the foetus we have after a certain time an organism which under favorable circumstances is capable of leading an independant existence. The heart-beats and the kidneys have commenced to perform their function, the liver can separate bile from the blood and there are frequent and often vigorous muscular contractions. In addition therefore to the excrementitious substances that arise from the growth of the foetus as a whole we have also the waste products formed by the functional activity of its organs.

I believe that in this gradually increasing quantity of waste products is to be found the cause of the occurrence of natural labour at full time. The foetus does produce its own exit from the womb but not in the way the ancients thought, by its own

Text Book of Midwifery Spiegelberg Vol. I P. 67

Text Book of Midwifery Prof Leishman P. 210
" " " " Spiegelberg Vol I P. 66.

physical efforts but by so contaminating the blood of the mother that the centre in the medulla is stimulated and so gives rise to uterine contraction.

The anatomical arrangement of blood vessels by which some of the arteries of the uterus open directly into the veins is to me suggestive that it is so, in order to prevent the venous blood of the uterus becoming too highly charged with effete material. When such is likely to happen arterial blood is poured in to dilute it ere it returns to the general circulation. Twin pregnancies and first pregnancies very frequently terminate before the nine calendar months are completed; probably in the former case this is due to the fact that the waste from two must be greater than from a single foetus; in the latter case it is reasonable to suppose that the excretory organs of the mother have not accomodated themselves to their new function.

Text Book of Midwifery Leishman P. 280

Text Book of Midwifery Spiegelberg Vol I P. 172

Lancet Vol I/70 P. 515.

This theory as to the occurrence of labour at full time is fully in accord with the theory of uterine contraction of B. Sequard; and it has far more evidence to commend it than the one advanced by Spiegelberg, in which he attributes the onset of labour to the gradual accumulation of a hypothetical substance in the maternal blood, which substance has at one time been required by the growing foetus but is less & less so, as development advances.

Holding these views as to the physiological causes of natural labour it is not difficult to understand how in certain cases we get an interference with the normal course of gestation by symptoms which go to make up the disease puerperal Eclampsia.

Barnes in his Lumleian Lectures shows very clearly what a similarity there is between an ordinary labour pain and a convulsion, and how easily one might pass into the other.

For the production of a labour pain, he writes, two conditions are required (1) "an accumulated irritability of the nervous centres," which he considers a normal condition in pregnancy, especially in primiparae. (2) "An eccentric stimulus usually conveyed from the uterus". According to the theory advanced this stimulus is produced by the foetal excrementitious matter circulating in the maternal blood.

The occurrence of puerperal eclampsia is due to an exaggeration of one or both of these two conditions. If it affects the nervous irritability alone we get eclamptiform attacks without albuminuria.
The causes which lead to an exaggeration of the "eccentric stimulus" fall under the category of circumstances which interfere with the excretory functions of the mother. Among them we may reckon exposure to cold, as happened in Cases ii & iv,

Vide Discussion on Albuminuria. reprint from the Glasgow Medical Journal Pages 5-24-53

previous effects of a poison such as lead, (Cases V & VI) chronic Bright's disease; an excess of foetal excrementitious matter, as in a case of twin pregnancy, in which eclampsia is prone to occur; an inability of the excretory organs to adapt themselves to the requirements of pregnancy, hence the frequency of eclampsia in first pregnancies.

When any one of these causes comes into play we get a rapid accumulation of excrementitious material in the mother's blood and this is the first step towards the production of Bright's disease, as pointed out by Dr Mahomed.

If the deterioration in the blood is not great we get signs of defective excretion more especially by the kidney as shown by the occurrence of albuminuria. If the impoverished condition of the blood is very great the vitality of the endothelium of the capillaries is impaired and one result of this is to increase the permeability

Colnheims Lectures on General Pathology Vol I P. 516

The Science & Practice of Midwifery Playfair Vol II P. 207.

Vide Colnheim Op: Cit: Vol I P 526

of the capillary walls for the transudation of fluids and so we get general dropsy.
The impoverished blood also irritates the vasomotor centre in the medulla causing spasm in the small arteries and in two ways this may produce anaemia of the brain which is the pathological condition necessary for the manifestation of convulsions. Either, as Dr Macdonald supposes, by being so great in the arteries of the brain that it prevents the blood supply to that organ. Or by its increasing the general blood pressure to such a degree that the heart is unable to carry on the circulation with sufficient vigour and this acts more especially on the left ventricle, causing its partial failure thereby producing anaemia of the brain & consequently convulsions.
In this way I think we may explain the repeated failure of the pulse in Case VI which accompanied each manifestation of Eclampsia.
This latter theory may also explain the

Cohnheim's Lectures on General Pathology - Vol I. P 525

Vide Discussion on Albuminuria. Remarks of Prof. Leishman
Reprint from Glasgow Medical Journal P. 64

repeated attacks of acute oedema of the lungs which happened in case III after the eclamptic seizures had ceased. Cohnheim points out that convulsions by their effect on the peripheral circulation assist the heart and lessen the chances of acute oedema of the lungs.

"Somewhat a part do these convulsions play in"
"the entire process, at least in the rabbit, that"
"S Mayer found the pulmonary oedema absent"
"in curarised animals under conditions where"
"in the non-paralysed it invariably set in."

The Traube-Rosenstein theory which attributes the convulsions to pressure on the capillaries of the brain caused by the oedema seems open to the objection that it is contrary to the laws of filtration to suppose that the pressure inside the vessel should cause such an amount of oedema outside that it overcomes

itself and closes the vessel.

Treatment

The method of treatment adopted in these cases has followed the three well known indications (1) to lessen and subdue nervous irritability (2) to stimulate the kidneys and aid them through the other excretory organs (3) to remove the cause by emptying the uterus.

For allaying irritability and warding off convulsions chloroform proved itself to be by far the most reliable agent. The rapidity with which it acts and the ease with which its effects can be regulated, renders it very superior to chloral or bromide of potassium. It also enables the accoucheur to perform the necessary operations for the induction of labour without the risk of these proceedings bringing on Convulsions by reflex action.

Chloral hydrate owing to the similarity in its therapeutic action to chloroform was very serviceable as a means of prolonging the action of that drug.

Chloral and Pot: Bromid: are specially recommended in cases of post partum Convulsions. The first case of the series was of this kind and the drugs, Chloral & bromide of Potassium were used freely. They certainly prolonged the intervals between the convulsions but the patient ultimately died.

Morphia which was tried in the case of Mrs. N— Case V seemed to have no beneficial effect either in allaying the severe epigastric pain or in staying the convulsions. That it is very serviceable sometimes is very well shown in a series of Cases of Puerperal Eclampsia published by W. Thaberley Smith. In five cases

the drug was administered by hypodermic injection and in each case it caused the convulsions to cease & the patients made good recoveries.

Venesection was resorted to in one case only Case III. The reason it was not performed in some of the other cases was that other councils prevailed. The pulse of high tension and accentuated second cardiac sound ~~undoubtedly~~ in Case II undoubtedly indicated venesection as being suitable.

The wonderfully beneficial result of bleeding in Case III perhaps causes me to form too high an opinion of it but I certainly agree with those writers who place Venesection next to chloroform as a means of treating puerperal eclampsia.

In the days before the discovery of chloroform it was the routine treatment of eclampsia.

In order to form a true estimate of its

Cases of Convulsions tabulated from Smellie's Midwifery Volumes II & III (McLintock) New Sydenham Society.

No. of Case	Quantity of Blood Lost	Method of Delivery	Result
165	10 oz.	Natural	Recovery
166	10 oz	(Not allowed to deliver)	Death
167	Slight bleeding before & after delivery	OS dilated with fingers natural delivery	Recovery
233	Slight bleeding before delivery	Attempt to dilate OS Forceps	Recovery
234	12 oz	Forceps used but not as soon as might have been Placenta adherent - & was extracted (after fits Convulsions)	Death
264	8 oz	Forcible dilatation of OS uteri & forceps	Recovery
342	10 oz	Turning	Recovery
343	12 oz	Turning after several hours delay	Death
344	12 oz	Turning	Recovery
345	Bleeding (Quantity?)	Forcible dilatation of OS & Version	Recovery
346	No bleeding	Convulsions were post partum probably hysterical	Recovery

value we should attach especially weight to the experience of obstetricians practising in those days.

I have collected all the cases of convulsions which Smellie records in his "Midwifery". There are ten cases, which one could with certainty diagnose as being puerperal eclampsia in its restricted sense, i.e. accompanied by albuminuria. Case 346 seems to have belonged to the other category. Of these ten cases nine were bled to the extent of from 8–12 oz. In Case 233 no mention is made of bleeding but there occurred a slight flooding during the first stage of labour & this would have the same effect.

We must also note that in only one case was delivery quite natural. In each of the others, (except Case 166 where there were refused) some mechanical means of hastening labour was resorted to; either forcible dilatation of os,

the application of forceps or turning.
The results cannot but be considered satisfactory as there were only three deaths Cases 166, 234 & 343, and in each case mechanical means of hastening delivery while considered desirable by the accoucheur were delayed for several hours or refused by the patient.
This is a death rate of 30 per cent. As the result of an analysis of 747 cases, treated with the advantages of chloroform Dohrn placed the mortality at 29 per cent.
Hofmeier reports out of 104 cases a death rate of 32 per cent
Braun " " " 73 " " " " " 26 " "
Spiegelberg places the mortality at 1 in every 3 cases

M^c Lintock considers that bleeding "is one of our most powerful means for averting the lesion to the nervous centres" and quotes statistics based on his experience, while Master of the

Lying in Hospital, Dublin. These statistics show that of 15 cases treated by bleeding 3 died, while of 21 cases which were not bled 9 ended fatally. His negative testimony in favour of bleeding I consider of importance. While he regrets not having used the lancet in many cases, he never could trace any harm to its use.

The loss of 10oz of blood at a confinement is not an uncommon occurrence and is one that gives the accoucheur no concern whatever. My own experience is that the involution of the uterus and the convalescence of the mother proceed more satisfactorily in cases where there has been loss of blood than in those in which by the firm contraction of the uterus the placenta has been expelled quite free from blood. Of modern writers Spiegelberg is the one most favourably disposed towards

Text book of Midwifery Spiegelberg Vol II P 220

Obstetric Medicine & Surgery Barnes Vol I P. 410

Text Book of Midwifery Leishman P. 774
The Science & Practice of Midwifery Playfair Vol II P 308

Lectures on Experimental Pathology
Medical Times & Gazette 1860 Vol II P. 152.

bleeding. He advises it to use in every case of eclampsia as the first and best means of preventing recurrence. Barnes also recommends it strongly; Prof. Leishman and Playfair advise it in selected cases.

The beneficial result of bleeding in cases of Eclampsia is chiefly to be attributed to the lowering of blood pressure and the soothing influence exerted on the nervous centres. But I also think that a certain amount of benefit arises from the fact that we remove a quantity of poisonous blood which is replaced by watery serum.

We do not know for certain whether the poisonous influence exists in solution or is held in the corpuscular element of the blood. M. Claude Bernard divides poisons into two kinds, those which chemically combine with the histological elements of the disorganised tissue and others which

Obstetric Medicine & Surgery Barnes Vol I P 407

Barnes Op: Cit: Vol I · P 413

circulate freely in the blood and destroy for the time being its vital properties. From the knowledge we possess of the pathology of eclampsia, the poisonous agent which is generally recognised by the authorities, would come under the second heading.

The amount of blood which is taken away is small compared to what remains; but the poisonous state may be so far diminished by the removal of 10 or 12 oz of blood that it is brought within the bounds of what the system has accomodated itself to. This condition would only be temporary but it allows us time to proceed with the removal of the cause.

With regard to the advisability of inducing labour in cases of puerperal eclampsia the lesson that these cases teach is very clear and fully bears out the advice Barnes gives on the subject.

Out of the four cases, in which eclampsia preceded any signs of labour, induction of labour was resorted to in three. The advantage to be gained by it could not be more plainly demonstrated than in Case II in which Nature was not interfered with. The child was dead and had been for several days; the mother had a serious relapse both in her general and in her visual symptoms. The mischief in the kidneys excited so long that it threatened to become permanent. All these dangers would have been mitigated and probably avoided if labour had been induced after the first convulsion.

In case III the means of starting labour pains were resorted to, the subsequent course being left to nature, but in all probability the child's life would

have been saved, had means of hastening labour been adopted. The fact, that the patient passed through a subsequent pregnancy without a mishap and gave birth to a living child, also shows that it is better to terminate a pregnancy without delay, upon the occurrence of convulsions and trust that in a subsequent pregnancy she may escape the danger. In the interests of the child, supposing it to have reached the viable time, it is better to induce labour than trust to the uncertainty of nature bringing it on; for, as in Case II this may be delayed so long that the child is killed by the effects of the mother's disease.

That the dangers to the mother, which such a proceeding gives rise to, are small is shown by the ease with which

dilatation of the os uteri and subsequent delivery were effected in Cases IV & V.

The risk of causing convulsions by manipulation is quite overcome by always using chloroform during active proceedings, such as introducing a catheter, rupturing the membranes, placing Barnes' Bags in position or applying forceps. Between these operations we should continue the anaesthetic effect by administering chloral.

The elastic pressure exerted by the india rubber bags so resembles nature's method & can be so graduated in its effects that it cannot in any respect be described as "accouchement-force". It is even probable that by these means we direct nervous energy into the normal channel

and so prevent the convulsive explosions.

The other danger of inducing labour, which is mentioned by some authorities, viz- that we are apt to have mishaps arising from the inpouring of blood into the general system, when the uterus contracts after the birth, is one that cannot fairly be brought against the practice, since the same occurrence happens when nature is left alone to effect delivery.

In Case V this latter danger may have had a share in producing the fatal result. The induction of labour passed off very satisfactory so far as any risks from manipulation were concerned; but the return of the epigastric pain followed by a convulsion along with suppression

Text-book of Midwifery Leishman P 776
" " " " Spiegelberg Vol II P. 224

Op. Cit P. 223 Vol II

of urine seems to suggest that the inpouring of blood from the uterine sinuses when the uterus contracted threw too great a burden on the kidneys; how far this may have been caused by the chronic lead poisoning from which the patient had suffered it is impossible to say.

Some authorities e.g. Professor Leishman and Spiegelberg think it better to wait until natural labour pains occur before adopting means to hasten labour. Spiegelberg writes - "when an outbreak" "occurs during pregnancy there can" "be no question of the induction of" "labour" the arguments to support this being that the convulsions may again subside; that if severe they will bring on labour; and that the

Lancet 1873 Vol i p 515

mild procedures for inducing labour are too slow in their action -
Now it is uncommon for convulsions when associated with albuminuria to subside and labour to go on to full term. Barnes' mentions a case of convulsions at the 8th month and partus at term, but he refers to it as being exceptional. Even if the convulsions subside the lesions to the kidneys, brain & eyes are likely to become more severe and permanent, while the life of the child is in great danger
If there is any benefit in having the labour ended then it is better to induce it than wait until the severity of the eclampsia brings it about.
The method adopted in these cases

is mild and perhaps slow but these are just the means that we require; we want to imitate nature's processes as closely as possible.

Regarding the other methods of treatment such as the administration of purgatives diaphoretics and diuretics no notice beyond what is contained in the reports of cases is required.

Pilocarpine is undoubtedly a serviceable drug but its use in these cases was not frequent nor methodical enough to enable me to form a correct estimate of its value.