patient shockingly bad; expected to pass away at any moment. Hypodermic injections of ether and strychnine relied upon.

November 1st. 10 c.cm. antistreptococcus serum injected. Morning temperature, 103.4°; evening temperature, 105.6°; pulse, 160; respirations, 46. Profuse sweating; one involuntary motion; abdomen and vagina the same.

November 2nd. Indications of abdominal distension going down; the boggy feeling to the right of the cervix more suspicious of suppuration higher up, but no bulging whatever. Emaciation and exhaustion very extreme. Great care was needed to protect against bedsores, of which there was evidence everywhere. Morning temperature, 102.8°; evening temperature, 103.8°; pulse, 140 and 160; respirations, 54. Two voluntary motions.

November 3rd. Morning and evening temperature, 103.4°; pulse, 140; respirations, 56; 10 c.cm. antistreptococcus serum injected. No motions.

November 4th. Morning temperature, 101.4°; pulse, 130; respirations, 46; evening temperature, 103.2°. Abdominal distension falling; tongue improving; one motion, improved; 10 c.cm. antistreptococcus serum injected. Fair sleep, moist skin, and general calming down, which followed each previous injection.

November 5th. Morning temperature, 102.4°; pulse, 117; evening temperature, 104.4°; pulse, 126; respirations, 56. Abdominal distension falling well; swelling in joints going down; general state improved. No further trouble with motions. Injections of starch and opium, etc., withheld; 10 c.cm. antistreptococcus serum injected.

November 6th. Morning temperature, 101.2°; pulse, 130; respirations, 50; evening temperature, 104.4°; pulse, 150; respirations, 48. Abdominal distension falling well, especially on left side, showing up dullness on the right side, evidently leading from the uterus to the kidney. Vaginal examination revealed no more than before. Patient holding her own. One motion under control.

November 7th. Temperature and pulse all day 103.2° and 160. Certain signs of improvement.

November 8th. 10 c.cm. of antistreptococcus serum injected. Profuse sweating. Morning temperature, 102°; pulse, 130; evening temperature, 103°; pulse, 150.

November 9th. Morning temperature, 98.6°; pulse, 140; respirations, 60. Abdominal distension gone down well, showing up a large abscess of extent previously suspected. Bimanual examination gave distinct fluctuation through abdomen, but not through vagina.

November 10th. Morning temperature, 99.4°; pulse, 150; evening temperature, 101.2°; pulse, 126.

November 11th. Morning temperature, 102.8°; pulse 130; respirations, 46; evening temperature, 102.2°; pulse, 130. The last injection of 10 c.cm. antistreptococcus serum given.

November 12th. Morning temperature, 103.2°; evening temperature, 103.6°. From this gradual improvement was made, temperature not getting above 102°, pulse from 130 to 115; hair falling out.

November 25th. Patient had by this time gained sufficient strength to be removed upon her air bed by train to a private hospital. There was a large bed sore over the sacrum and another on the neck, whilst other parts were saved with difficulty.

November 28th. Under ether I opened the abdomen and removed an enormous quantity of pus from a cavity exposing the uterus and kidney. The patient all but died on the operating table. The temperature ran an irregular course until January 18th, 1902, on which date the pulse, temperature, and respirations became normal after three months.

Throughout the mixture and hypodermic injections were continued every four hours alternately, with a liberal supply of champagne, and she took large quantities of the best nourishment. In all she had nine injections of serum—90 c.cm. (Pasteur Institute). I have seen the patient twice towards the end of the year, and again quite recently, and she expressed herself as never having been so well in her life.

There were no cultivations made, but there can be little doubt that the case was due to streptococcus pyogenes, producing streptomycosis, hence the good results produced by the antistreptococcus serum. It must, of course, be admitted that puerperal infection may be independent of streptococci, but the conjunction of certain symptoms—rigors, high temperature, very rapid pulse and breathing, sweats, and very rapid bodily waste—points beyond all doubt to streptococcus infection.

PUERPERAL ECLAMPSIA BEFORE DELIVERY.

By JOHN LITHGOW, M.D.,
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THE two cases of puerperal eclampsia here reported occurred recently in my practice. In both the fits came on before the birth of the child.

CASE I.—Mrs. A., a farmer's wife, a strong, healthy woman, who had always enjoyed the best of health, pregnant for the eleventh time, sent for me about 5 a.m. on June 17th, 1903. She was suffering from severe abdominal pain, persistent vomiting, and headache. She did not expect her confinement for some time, and assured me that her pains were not uterine, but due to something she had eaten the previous evening. I gave opium (gr. ½ in pill), ordered hot local applications, and tablespoonful doses of milk and soda water. On call-

ing again about four hours after her husband informed me she had had a "turn" shortly before my arrival, but could give me no description of it. I ascertained that the urine had been very scanty for a few days; with difficulty she passed about 1 oz. of high-coloured urine, which on testing roughly in a metal tablespoon over a lighted candle I found to become almost solid. I gave her a dose of calomel, and left instructions that if she took another "turn" I was to be sent for immediately. In about two hours' time, when returning to see her, I met a messenger who informed me she had another seizure. I found her dazed but conscious, and a neighbour woman who was present described the attack, which was undoubtedly puerperal eclampsia. She soon had a third, and very severe fit. Immediately on the commencement of the convulsion I gave a hypodermic injection of morphine (gr. ¼), and administered chloroform, which soon controlled the spasms. As the patient did not recover consciousness, I sent for assistance, and injected underneath the skin of the abdomen about two pints of a saline solution (common salt 3j, potassium carbonate 3j, as recommended by Jardine).¹ A fourth and still more severe fit soon seized her, during which chloroform was again administered, when this convulsion ceased her pulse was so feeble and irregular, and her condition altogether so desperate, that I was of opinion that another fit would prove fatal, and decided to empty the uterus. I introduced my hand with some little difficulty into the uterus, was fortunate in immediately seizing the feet—the presentation was cranial—and I had no difficulty in turning and delivering the child, a full-term female, which apparently had been recently alive, though I was unable to resuscitate it. A little pressure expelled the placenta, and altogether the time occupied in delivery was less than fifteen minutes. Dr. Robertson now arrived, and we considered the woman's condition to be almost hopeless. She had another eclamptic fit, less severe than the former. Chloroform was administered, and hypodermic injections of strychnine, morphine, and pilocarpin. In about an hour her pulse again became perceptible, and her condition a little more hopeful. When we left her she was still unconscious. A mixture of potassium bromide and chloral was sent her to be taken every two hours after she was able to swallow. No more convulsions occurred, but she remained in a semi-conscious condition during the night and part of the following day. The following evening she discussed with me when she expected her confinement, and, on my putting the question to her, said she had felt no movements that day. She was very much surprised when told that her baby was born. She made a complete recovery.

CASE II.—Mrs. L., a gamekeeper's wife, sent for me about 11 p.m. on June 25th. She was a strong young woman, pregnant for the first time and at her full time. Pains had commenced, and on examination I found the os but little dilated. On the following morning she had made little progress. I called again about 7.15 p.m., and on opening the door found her sitting in bed; before I had entered the room she had fallen down in a most typical and severe eclamptic fit. I had my forceps rapidly prepared, put her in the midwifery position, found the head of the child well down on the perineum, immediately applied the blades, and she was delivered almost by the time the convulsion had ceased. The child was a well-formed male and alive. There was some delay with the placenta, and before it was expelled the patient had regained consciousness. There were no more fits. On inquiry, I found that the urine had been scanty for some days previously. Next day, on asking this patient what she remembered of the occurrence, she said she saw me arrive, but knew nothing more till the confinement was over and the binder was being applied.

These two cases of puerperal eclampsia occurring in private practice, and within eight days of each other, in women before delivery lend themselves to comparison. Save the scanty and albuminous urine, there were no symptoms common to both. The one is a woman presumably at the end of her child-bearing period, aged 45, and carrying her eleventh child, labour had not commenced, and for from six to seven hours before the onset of the first seizure she had had prodromal symptoms in the shape of severe epigastric pain accompanied by vomiting and headache. The other a young woman, aged 27, pregnant for the first time, nearing the end of a protracted labour, without the least warning to either herself or her attendant, is suddenly struck down with a seizure.

Treatment in both cases, except that of emptying the uterus, was entirely different. In the first case purgatives—morphine, saline injections, chloroform, pilocarpin, and strychnine—were administered. Venesection was discussed but, owing to the patient being pulseless, was abandoned. Still she had five severe fits, which brought her very near to death. In this case the child was lost.

In Case II no treatment was directed to the relief of the fits, but the uterus was immediately emptied with the best possible result to both mother and child, in that there were no more fits and the child alive.

Dr. McDowell² remarks "that the patient had no return of the convulsions after delivery," this after thirteen fits, during which time all the recognized forms of treatment had been tried. My first case had four most severe fits, during which time similar treatment had also been exhibited without benefit; indeed, the fits were becoming more severe in character, of longer duration, with less time between. No

relief was obtained till the uterus was emptied, after which she had only one slight convulsion.

Puerperal eclampsia is one of the most alarming and fatal diseases that attack pregnant or puerperal women; the mortality to mother and child is very great, and is more so when the fits come on before the birth of the child. On the uterus being emptied, the mortality is very much reduced. According to Dührssen, "Emptying the uterus is said to be a certain method of checking the fits."³ The longer this treatment is delayed the more serious becomes the condition of the patient, and often no attempt is made to do so till it is too late. Dr. Jellett puts it that, if the patient survives the emptying of the uterus, whether by artificial or natural means, she will certainly recover.⁴

In Case I the uterus could have as easily been emptied after the first fit as it was after the fourth; had that been done, instead of putting off valuable time disinfecting and boiling instruments for hypodermic injections, I have no doubt that the child would have been saved, and the woman's life not put in jeopardy; being a multipara with the soft parts easily dilatable, the case certainly was one for rapid and easy delivery.

If ever it be my lot to attend a case of puerperal eclampsia again, I shall immediately attempt to empty the uterus, and in doing so will feel confident I am doing the best for my patient.

REFERENCES.

- ¹ Jardine, *Glasgow Medical Journal*, March, 1899. ² BRITISH MEDICAL JOURNAL, July 25th, 1903. ³ Dührssen, *A Manual of Obstetric Practice*, 1897. ⁴ *Encyclopædia Medica*, vol. iii.

THE TREATMENT OF ECLAMPSIA BY HYPODERMIC INJECTIONS OF MORPHINE.

By W. BOXER MAYNE, M.R.C.S., L.R.C.P.,
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ECLAMPSIA being so important and serious a subject, I venture to give particulars of two further cases in which the hypodermic administration of morphine has promptly checked the convulsions.

CASE I.

A woman, aged 32, scarcely five months advanced in her third pregnancy, who had apparently been in usual health till one day she developed an eclamptic fit. She was alone at the time, but a neighbour, hearing her groaning, rushed in to find her in a fit. By the time I arrived the woman had emerged from the consequent comatose condition, was vomiting freely, and was quite unable to recognize those around her or comprehend what was said. Vaginal examination was out of the question, as any attempt produced great mental excitement. I gave a hypodermic injection of morphine gr. $\frac{3}{4}$, croton oil $\frac{1}{12}$, and had her wrapped in blankets. There was no recurrence of the fits; she miscarried during the night, was quite rational the next day, remembering nothing of her illness; progress was uneventful. The urine passed the morning following the fit was small in amount, bright red with blood, and contained much albumen.

CASE II.

A primipara, aged 23. When called to her confinement, I found that she had been about twenty-four hours in labour, that the os was fully dilated and the head engaged in the brim. Birth was effected after very difficult forceps extraction. At the conclusion of a straightforward third stage I left the patient, though naturally fatigued, bright and comfortable. I had not, however, got very far before I was overtaken by the husband, who begged me to return as his wife was dying. Rushing back fearing *post-partum* hæmorrhage, I was relieved to find that the patient was by no means dying, but was in the stertorous comatose condition with face congested following a fit; the fit had developed suddenly without warning: the limbs had been convulsed and froth had appeared at the lips. I gave a hypodermic injection of morphine (sulphate), gr. $\frac{3}{4}$, and, as the pulse was very feeble, strychnine gr. $\frac{1}{12}$, and had the woman wrapped in a hot wet pack. Revisiting her in the course of a couple of hours, I found her sensible. I administered calomel gr. x, and left a mixture of bromide and diuretics. Progress was straightforward, there being no recurrence of fits. The urine contained for a few days a decided deposit of albumen.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

CASE OF CORROSIVE SUBLIMATE POISONING.

A. B., a dispenser, aged 29, dissolved 60 gr. (or more) of corrosive sublimate in hot water ($\frac{3}{4}$ v) intending to make a bath for an eruption which he believed to be scabies. He sponged his arms, abdomen, thighs, and scrotum, with the warm fluid, and then went to attend to people in the shop. A smart tingling came on at once, which, when he had attended to three customers, became severe pain, principally in the penis and scrotum.

When I saw him half an hour after the application the penis and scrotum were red and much swollen, and there was a papular rash on the groin and slightly on the abdomen. He was suffering very severe pain, was twitching very much, and was very jerky in his speech. I administered morphine $\frac{1}{4}$ gr. and cocaine $\frac{1}{4}$ gr. hypodermically, and sponged the body with flour and water and egg albumen, also administering the whites of two eggs in tea. There was difficulty in swallowing the second cup (one hour and a-half after the application). At the end of another hour he was worse in every way, could hardly speak, swallowed with the greatest difficulty; the left hand was clawlike and stiff, and there were severe tremors. I gave morphine gr. $\frac{1}{4}$. He complained of burning of his lips, throat, and stomach. Four hours later he retched violently, but with little result, and had a severe general clonic spasm lasting about twenty seconds. I sent for Dr. Bishop to assist me. The spasms recurred about every ten minutes, and did not seem to be induced by outside stimulation. Twice marked opisthotonos occurred. During the attack there was absolute general rigidity, inability to breathe at all (lasting once for ninety seconds); the pulse, which between the spasms was about 100, became running in character. There was an expression of terrible fear. A general tremor preceded each attack, with an elevation of the shoulders. Rigidity was partial during the intervals, and the breathing was very shallow and mostly abdominal. The symptoms were all at their height five hours after the application.

Two hypodermic injections of brandy $\frac{1}{2}$ oz., and morphine gr. $\frac{1}{2}$ were given. The patient was surrounded by bottles full of hot water wrapped up in bath towels wrung out of boiling water. Amyl nitrite and chloroform were administered with good results, though the shallowness of the breathing delayed it somewhat. The rigidity between the attacks diminished, but when after two hours' administration chloroform was stopped, another rather sharp, though not prolonged, spasm came on. Chloroform was then given for three more hours, and stopped nine hours after the application of the poison. The case then went on well. For two days there was a burning sensation, and one or two attacks of sickness, but there was no salivation, no suppression of urine, and no purgation. Large grey blisters covered the scrotum. There was marked weakness of the left hand, which improved every day for a week, and on the first day inability to protrude the tongue, which deviated towards the left.

The previous history probably accounts for the unusual symptoms, the patient having been wounded in the late war, and spending seven months in hospital with paralysis of the left side, from which he had completely recovered. While there he had had some extraordinary temperatures on several occasions.

Bedford Park, W. S. F. HOLLOWAY, M.R.C.S., L.R.C.P.

LANCASTER MEDICAL BOOK CLUB.—The first meeting of the fourth session of the clinical section of the Lancaster Medical Book Club was held at the Royal Lancaster Infirmary, on October 23rd. Mr. Charles Dean, F.R.C.S. Ed., being in the chair. The Honorary Secretary showed a case of tuberculous dactylitis, and a radiograph of the condition was thrown on the screen.—Dr. R. G. Rows, M.D., followed with a very interesting demonstration of cavities in the spinal cord, illustrated by the lantern; at its close questions arising out of the demonstration received reply from Dr. Rows, and he was accorded a hearty vote of thanks.—Card specimens were shown by the President, malignant disease of larynx; by Mr. W. C. Helme, malignant uterus removed by vaginal hysterectomy. New books were shown and specimens exhibited under the microscope.