tion of cases, anæsthesia be availed of, and the bimanual method of examination, by the vagina and rectum, in the dorsal position, be adopted, the rectum and bladder having been previously emptied, most risks of blundering will be avoided. Such an examination includes the judicious use of the sound,—though resort to it is less necessary when the finger becomes more educated and those precautions I have referred to have been taken. But no matter how exhaustive be our inquiry into the antecedents and history of a case, or how searching be the investigation of the abdominal and pelvic viscera, there still remains a balance of conditions, the nature of which can only be ascertained by abdominal exploration or colpotomy.

CLINICAL RECORDS.

CASE OF CEREBRO-SPINAL FEVER—PURPURIC VARIETY.

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ON several previous occasions I have drawn the attention of the profession to the occurrence of this disease in Scotland, and have no doubt but that, were its members made more familiar with the signs and symptoms of it, many more cases would be recognised. Lately in this district I have seen several well-marked cases. Of these, three were seen in consultation with professional brethren, who had recognised their true nature before I was called in, and the others have occurred in my own practice. The latest of these having exhibited the features of the disease in its most malignant form, I have thought it desirable to place it on record.

The victim was a healthy girl of 8 years and 4 months, who had not suffered from any of the usual diseases of childhood, and never had any ear trouble. On the morning of Thursday, 8th March, she was found in bed extremely ill. I saw her at once, and was much struck with her appearance. She was tossing about uneasily, and moaning loudly as if in great distress. She had a dazed and stupid look, and although she evidently heard and comprehended to a slight extent what was said to her, she was quite unable to give any verbal answer. Her face exhibited a deathly pallor, but somewhat livid; the eyes were sunk and vacant-looking when opened, the extremities cold, the pulse thin, very rapid and weak, and her breath had a peculiar fœtor. But what above all added ghastliness to her appearance, was a copious purpuric eruption over the face, legs, and arms,—a very few spots only occurring on the trunk. The spots were chiefly pinhead in size, but here and there a few had coalesced and formed distinct patches. Spots were noticed on the conjunctivæ and gums. She had been vomiting into a basin which had been set on a chair at the bedside; and although there was nothing that could be termed a hæmatemesis, some of the contents looked dark, like coffee grounds. It was observed that she had passed her urine in bed.

In the serious condition which she was evidently in, I judged that the first thing to be done was to endeavour to relieve her suffering, and at the same time arrest the vomiting, and for this purpose I gave her immediately a suitable dose of morphine and atropine hypodermically, which had a rapid and good effect. Hot bottles were placed around her, and a large mustard and linseed meal poultice applied over the chest and abdomen. As soon as possible also an enema of peptonised milk, with a small dose of brandy, was administered by the rectum and retained. After the lapse of two hours or so I had the satisfaction of seeing the child resting quietly, with the pulse greatly improved, and no recurrence of the vomiting. The temperature, which had meantime been taken in the rectum, was 104°.

Having had time to inquire into the previous history of the case, I found that she had been confined to the house since Monday the 5th inst., when I saw her with slight sore throat and a temperature of 101°, and concluded that she was suffering from a mild attack of influenza, which was prevailing at the time. Next day she was much better, and was out of bed in the afternoon. On the morning of the 7th she seemed quite well, but her mother judged it advisable not to send her to school, the day being very cold. Towards the afternoon, her mother, noticing that she was not looking so well, and had refused to eat her dinner because she felt sick, advised her to go to bed, which she did. Some little time after, she vomited, and put up the remains of an orange which she had eaten in the earlier part of the day, and to which her sickness was attributed. Later in the evening she was again sick, but at 11 P.M. was apparently sleeping quietly with an elder sister beside her. Nothing further was known of her until 7.30 of the following morning, when she was found in the condition I have described.

Here, then, we had a child of 8, found practically in a collapsed and dying condition, with a temperature in the rectum of 104°, with persistent vomiting, a very clouded condition of the brain, and covered with a copious purpuric rash. The question of diagnosis was not an easy one to answer, for the condition of collapse into which she had so quickly passed obscured, or in fact arrested all the other symptoms. Once before only in my experience had I seen a girl of about the same age die in a night's illness with a purpuric rash of a similar kind, accompanied by vomiting and diarrhœa, and where a post-mortem examination, ordered by the authorities at my solicitation, revealed it to be a case of cerebro-spinal fever;[1] but although this case flashed into my mind, I dismissed the suggestion as being too unlikely, and waited in the hope that time would throw further light upon it.

During the day the child continued to improve slowly, and by the evening had rallied considerably. There was not a corresponding improvement, however, in the brain symptoms, the condition being still one of stupor. In the evening, Dr. Finlayson from Glasgow saw her with me, and, after a careful consideration of the whole case, we inclined to the view that it was a case of purpura

[1] See paper in *Glasgow Med. Journ.*, July 1884.

hæmorrhagica, with probably extravasations on the brain. The temperature taken in the rectum was now 101°, and generally her symptoms were better. Still any attempt to give nourishment by the mouth brought on the vomiting. We therefore continued to feed entirely by the rectum, and to give the medicines hypodermically. These latter consisted chiefly of morphine and atropine, with twice a small dose of strychnine.

During the night improvement continued slowly, and on the morning of the 9th the temperature was normal and the pulse fairly good. The brain, however, was still clouded, and she had some delirium of a rambling, childish kind. This improvement was maintained during the day, and she became decidedly more conscious. At one time she complained of pains in her legs, and moving her in any way seemed to cause her more suffering. She lay with the face turned upwards, and the eyes mostly open, and any attempt to bend the head forwards was manifestly very painful. Nothing, however, was retained on the stomach. The bowels moved freely of their own accord, and urine was passed in bed. In the evening the temperature began to rise again, and coincidently the moaning and restless symptoms returned. During the night small doses of morphine had to be given frequently to procure rest. The head became more firmly retracted, and curving of the spine was very marked. At times the body formed quite a crescent, the feet and the head being approximated. The hands and arms were in perpetual movement over the head, face, and neck, sometimes leaving the marks of her nails in the flesh. At 8 A.M. on the morning of the 10th the temperature had risen to 103°. The pulse varied much, at one time rapid, at another slow. The face and neck flushed remarkably at intervals, and at these times the breathing was accelerated and loud. She was now completely unconscious, but in her delirium still rambled on with her childish prattle. I had now become perfectly convinced as to the nature of her illness, and saw that it was running a rapidly fatal course. Dr. Finlayson saw her again with me about midday, and inclined to confirm my own opinion. The temperature in the rectum was now 106°. There was much twitching of the muscles of the arms and legs, and coma vigil was very marked. The end was rapidly approaching, and she died at 2.15 same day. No post-mortem was made.

No one who has read descriptions of this disease as it occurs in other countries, and notably in the United States, can have any doubt about its nature. Had the child died, as she might have done, in the state of collapse in which she was when discovered on the morning of the 8th, there might have been much doubt as to the cause. The course of the disease had been arrested by the collapse, but as soon as the child recovered strength in some measure, the disease resumed its course and revealed its true nature. The similar case which I saw in 1884 and have related

in the paper which I then read before the Clinical and Pathological Society in Glasgow, died in a state of collapse, after an illness of only one night's duration. Unfortunately she had died before I reached the house, and it was only because I was seeing other cases of the disease in the district at the time that I suspected it might be such, and succeeded in getting a post-mortem examination, which confirmed my suspicions.

There may, however, be equally rapid and fatal cases without rash of any kind appearing. Three or four months ago I was called at 2 A.M. to see a boy of 10 who had been seized with convulsions. He had been sent home from school the previous afternoon on account of headache and vomiting; some medicine was administered by his mother, and he was put to bed. Nothing of note occurred until he was found in convulsions, and although I did what I could to try and arrest the disease, nothing proved of any avail, and he died at 11 A.M. of the same day. No post-mortem was made, but in view of the cases I have seen since, I think it was quite likely a case of malignant cerebro-spinal fever, although no purpuric rash appeared.

Sometimes in less acute cases the diagnosis may get confirmation from the sequelæ which remain after recovery. Some time ago I was asked to see a case in consultation, where I had no hesitation, from the symptoms then apparent, of confirming the attendant's diagnosis. Additional confirmation was unfortunately obtained after the child's recovery, by the discovery that it had completely lost hearing, and, being only 6 years of age, it became dumb, and is now an inmate of a deaf and dumb institution. I related a similar case in the paper published in 1884.

For some years considerable scepticism existed in the minds of the profession in Scotland regarding the correctness of the diagnosis in some of the cases published, both by myself and Dr. Maclagan of Dundee.[1] I am glad to find that this is disappearing. Quite lately Dr. R. Bruce Low, Medical Inspector, Local Government Board, London, sent me a copy of a paper which he had read before the Epidemiological Society, drawing the attention of the Society to the incidence of the disease in this country, and to the diseases with which it is liable to be confounded.

Some members of the profession have written lately about a "simple posterior basic meningitis of infants," which may be mistaken for cerebro-spinal fever, but Professor Osler, who ought to have some experience of the disease, takes the opposite view, namely, that the mistake is on the other side, and quotes the fact that Dr. Still, an American pathologist, has in nine out of twelve cases of so-called posterior basic meningitis found a diplococcus corresponding closely to the *Diplococcus intracellularis* of Weichselbaum, which is now looked upon as the cause of the disease.

[1] See *Edin. Med. Journ.*, 1886.