There is perfect control over the bowel, so that I believe the muscular fibres of the rectum have undertaken the functions of a sphincter. I publish this case as I have never seen reported or heard of one in which the condition of the parts was precisely similar.

A NOTE ON A SERIES OF CASES OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

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It may be of interest to give a very short account of 5 cases of the above disease seen during the past year. In addition, during the last few months, I have heard of, but not seen, 5 others, 3 of them with suppurative of the choroid. The cases, though occurring sporadically, are indistinguishable clinically from the epidemic disease, but there can be no very extensive and fatal epidemic as no unusual number of deaths from meningitis are being registered. The cases form a striking group with many and characteristic points of resemblance, and differ essentially from anything I have been accustomed to see. Three were hospital patients and 2 were seen in consultation. The ages were 3, 4, 5, 14, and 22 years. One proved fatal after fourteen weeks' illness, and a necropsy was obtained; the others recovered or are still under treatment; one was complicated by suppurative choroiditis. The most prominent symptoms common to all were:

1. Rapid, if not actually sudden, onset, without injury or previous failure of health.
2. Fever—the temperature rose at once to 102° – 104° and very slowly subsided, sometimes showing distinct and regular intermissions. In 3 cases (1 fatal) the temperature remained normal for weeks without any other sign of improvement.
3. The intensity of the pain in the head and neck, aggravated by the slightest movement.
4. Marked retraction of the head.
5. Muscular hypertonicity, twitching or rigidity. (The man, aged 22, was sent into the hospital as a case of tetanus).
6. Extreme and rapid emaciation.
7. Tendency to relapse and to intermissions.

Lumbar puncture was not practised during life. In the fatal case some turbid fluid was removed by lumbar puncture two hours after death and sent away for examination, but owing chiefly no doubt to unavoidable delays, the results by cultivation and otherwise were negative.

There was distinct exudation over the under-surface of the cerebellum, pons, and medulla. It differed from that most commonly found in tuberculous meningitis in position, not extending so far forwards and not spreading to the Sylvian fissures. No tubercles were detected in the exudation or in the viscera. The hemispheres appeared normal. The ventricles were greatly distended, and contained about 10 ounces of slightly turbid fluid. The choroid plexuses were adherent to the ependyma of the ventricles. On removing the spinal cord, a blood clot was found between the dura and the bone as far as the eighth dorsal vertebra. At the ninth dorsal, there was a small hæmorrhage beneath the dura. The membranes were intimately adherent to the cord in the cervical and lower dorsal regions.

The cases differ in their clinical course very markedly from tuberculous meningitis. The onset is more acute, the retraction of the head much more marked, the duration of the disease much longer, and percentage of recoveries far greater. None of the 5 cases had herpes, and only 1 showed some patchy erythema.

Clinically, the distinction between individual cases of posterior basic meningitis, sporadic cerebro-spinal meningitis, and epidemic cerebro-spinal meningitis seems impossible. Bacteriologically, the distinctions between the diplococcus meningitidis intracellularis found in cerebro-spinal meningitis and that found in posterior basic meningitis seems chiefly one of degree, shown by slight cultural variations and less or greater virulence in inoculation experiments.

As regards treatment, morphine was given in full doses to relieve the intense pain. In 3 cases potassium iodide appeared to do good; in 1 it was evidently prejudicial, and in

1 without distinct effect. Morphine appeared to do good beyond the mere relief of pain.

CASE I.—H. G., aged 22, a coal miner, admitted August 12th, 1899, in a state of active delirium, with temperature 103° . He was at work thirty-six hours before admission. He was seized with pain at the back of the head about noon on August 11th, and rapidly became worse. His previous health had been good, and the only illness measles in childhood. He had a blow on the head eight weeks ago, but it did not disable him. After admission he suffered the most intense pain in the head and neck, causing him to scream and roll about. The head was greatly retracted, the neck muscles rigid, and there was slight rigidity of the limbs. No rash or affection of joints, and no discharge from the ears. The knee-jerks were present, the pupils dilated, equal, and reacting to light; no ocular paralysis, fundi normal. He passed everything into the bed, but was never unconscious. The temperature was very variable. For the first three weeks the extremes were 104.2° and 98.6° , and the average about 101.8° . For the second period of three weeks about 1° less, from the sixth to the ninth week about 1.5° still less, and after nine and a half weeks the temperature remained normal. He reached an extreme degree of emaciation and mental apathy. After seventeen weeks illness he was discharged to the convalescent home practically completely recovered in every respect. He was treated by hypodermic injections of large doses of morphine for the first three weeks, and by potassium iodide with mercury, from all of which he appeared to derive much benefit, as he was not so well when they were omitted.

CASE II.—A girl, aged 5, was admitted December 19th, 1899. Her illness commenced somewhat suddenly eight weeks previously with headache, vomiting, and some fever. On admission she was very emaciated, had bedsores over each trochanter, and lay curled up in a torpid, but not unconscious, state, with very marked and persistent retraction of the head, which continued during the whole illness, and with some tonic flexor spasm of the limbs. She never complained of pain in the head (or elsewhere), but frequently used to scream in a purposeless way. She always understood what was said. There was some strabismus, but no optic neuritis. The temperature reached 101° on three occasions, and was 100° on eight other occasions, but was generally normal or subnormal. Her appetite was very variable. There was no sickness after her admission to the hospital. She gradually became more feeble and emaciated, and died six weeks after admission and fourteen weeks from the commencement of her illness. For post-mortem condition see the general report.

CASE III.—L. T., aged 4, admitted April 2nd, 1900. No previous illness; never any discharge from ears. Illness began during the night, seventeen days ago, with "pains all over," headache, and vomiting; he had appeared quite well when put to bed. Retraction of the head was noticed on the third day of the illness. During the second week pain in the head and neck continued, but vomiting ceased.

On admission he was well nourished, lay curled up in bed with his knees drawn up, head greatly retracted, and the muscles of the back and neck rigid. He complained of headache and pain in the neck, and put his hand to the back of the neck. The abdomen was somewhat retracted, pupils small but equal, knee-jerks absent, skin reflexes present. The mind seems clear; he asks for what he wants and understands what is said to him. Temperature varied between 99° and 103.6° , and pulse from 120 to 140.

On April 5th there was slight conjunctival injection; on the 6th that had improved; the fundi were examined with the ophthalmoscope, and found normal. April 13th, the left conjunctiva became rapidly swollen and inflamed; on the 14th there was chemosis, the pupil was contracted, iris bulged forward, margin irregular, and only a yellow reflex was obtained with the ophthalmoscope. The patient was very kindly seen by Dr. Laws, who diagnosed suppurative choroiditis.

June 19th. The febrile attacks have become less and less severe, and have occurred at longer intervals; the temperature has now been normal for a fortnight. The child is extremely emaciated and feeble, but conscious. The left eye is much shrunken. There have been four attacks of opisthotonos, and frequent tremors with muscular twitchings, especially of the arms, but these seem now to have ceased, and there is no longer rigidity of the limbs. Recovery is still very doubtful.

CASE IV.—A robust child, aged 3 years 4 months, good family history. Quite well till 4 P.M. on May 20th, when he complained of headache, and shortly afterwards vomited; temperature, 10 P.M., 103.5° . He screamed with pain in the head. May 21st: Temperature, 102° ; vomited; pain very severe at times; took scarcely any food. May 22nd: At times semicomatose; at others frantic with pain. At midday very marked retraction of the head began. I saw him, in consultation with Dr. Stafford, in the evening, when the temperature was 99° , pulse 80; the head was very retracted, and back slightly arched. He lay on the left side, and cried if disturbed. Cerebro-spinal meningitis was diagnosed, and morphine, with potassium iodide, advised. After a few days the symptoms abated, and he was doing well. A fortnight later he had a relapse again with sudden onset, and a return of all the symptoms. After improving so as to be ready to come downstairs he had a second relapse, still more severe, but gradually recovered, and now (June 26th) seems quite well.

CASE V.—A boy, aged 14, seen in consultation with Dr. Kenway Williams. June 15th, 1900. Illness commenced abruptly seventeen days with pains in the back and general illness. A few days later pain and swelling of the foot was noticed, and on May 24th Dr. W. opened a foul abscess in the cellular tissue beneath the os calcis; temperature 104° . May 26th. Muscular twitchings arching of back, and violent pain in the head causing patient to scream. When seen on June 5th the foot was soundly healed, and there was no fresh suppuration anywhere. The temperature had remained from 103.8° to 104.5° in the mornings and about 0.5° less in the evenings. Pains in the head very violent but only last a few hours at a time. Does not like the head to be moved in the slightest; pain in the back with some arching; occasional vomiting; eyes and ears normal; pulse 112; mind clear; much emaciation. To-day, June 26th, I hear from Dr. Williams that the patient is extremely emaciated, all the symptoms are gradually abating, temperature intermits and is much lower. During the intermissions he refuses food and is difficult to manage, but during the febrile attacks he takes milk well. There has been much trouble with retention of urine. The patient is not yet out of danger. There has been a very partial erythematous rash.