CERTAIN PATHOLOGICAL CONDITIONS OF THE NERVOUS SYSTEM.*

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THESE few cases are brought before the Association, partly because some of them are instances of somewhat unusual lesions, partly because others of them illustrate a pathological condition, by which many of the diseases to which the spinal cord is liable may be grouped together. The cases include two of grave lesion of the pons Varolii; one of congenital chorea (and to this I can find no similar case on record), and two of myelitis.

CASE I.—William Westlake, aged 44, an ostler, was said to have been in good health until the day of admission, and to have spoken on that day. When seen the day after admission to the ward, his condition was as follows. He had right hemiplegia, and was unable to hear or to receive impressions, or to speak. The right pupil was larger than the left, and the pupils did not act. The pulse was thready; the face dusky. His breathing was laboured, almost stertorous. He scarcely swallowed. The urine partly dribbled away, partly was retained; it contained no albumen. He seemed moribund and died in two days.

POST MORTEM EXAMINATION.—There was old pleuropneumonia of the right lung; recent pleuropneumonia of the left lung. The brain was healthy, except the pons. About the middle of the pons, but slightly to the left side, was a depression rather larger than a pea. The walls of this were very soft, and made up of broken down nerve-tubes, and of tubes swollen in some parts and very contracted in others. In one spot, there was pigmental staining, which, under the microscope, seemed formed by very minute and very multiple hæmorrhages.

CASE II.—William Gibbons, aged 30, was admitted into the Bristol Infirmary under Dr. Fairbrother. He had a tuberculated syphilitic rash all over the body, and ulcers on the legs. There was partial right hemiplegia, but no impairment of speech. Soon after admission, his intellect began to become impaired and his speech thick. Later, he became temporarily hemiplegic on the left side, this lasting only a few days. Three months after he was first seen, he suddenly became blind, which condition lasted for several days. No lesion of the eye was visible externally. No examination was made by the aid of the ophthalmoscope. Sight was restored before death. The right hemiplegia persisted. He had some paralysis of the bladder. Stupor gradually supervened, and ended in death after he had been five months under observation.

POST MORTEM EXAMINATION.—Broca's spot and every part of both hemispheres were quite healthy. The pons was softened over a space of the size of a large filbert. The lesion occupied rather more of the left half than of the right, but passed a good deal over the middle line on the right side. The nervous tissue was quite deliquescent. The vessels of the circle of Willis were a little fatty. All other organs were healthy, except that in part of the left lobe of the liver there were regions of yellowish discolouration. After preparation, sections of the diseased part shewed the blood-vessels to be almost the only structure left. A few nerve-cells and fibres existed, atrophied and isolated by the disease; strange round bodies, conglomerate cells one-thousandth of an inch in diameter, could be obtained from the injured parts.

CASE III.—Henry Stott, aged 13, was admitted with congenital chorea. His mother was frightened at the end of the second month of pregnancy, by having squeezed a kitten under a barrel and witnessing its death-agonies. He was born about six weeks before his time. He had had chorea from his birth, and had always been as bad as he was now, if not worse. Lately he had learned to say a few words. Until lately, he could not speak at all, but could hum tunes in an indistinct way, and make various noises. He could not stand, or hold anything firmly. His education had been entirely neglected, but he was very sharp and very merry. Most of his movements showed great deficiency of co-ordinating power, but he could combine movements for the purpose of scuttling along the floor in a wonderful manner, one leg being stretched out in front and the other behind, whilst he paddled along with one hand at great speed. He was almost always in motion, except during sleep, and then was quite still. He had fits at three years old, and not since. There was no rheumatism or heart-disease, or any morbid family history. He was put upon arsenic. After a few weeks, he began to say more words and was much less restless. He walked with the help of one hand, and could stand without assist-

ance, although on admission he could not lift himself up without being held. The nurse took great pains with him, and he learned to say a good many words, and was exceedingly intelligent. Playing at nine-pins brought him on considerably, and so did the association with and imitation of two non-choreic boys in the ward.

CASE IV.—Fanny Offer, aged 37, married, had been ill for fourteen days. She was first taken with numbness in the left leg, and then with motor paralysis there: the right leg became gradually affected in the same way a few days later. She lost her sight suddenly fourteen days before admission. She was then constipated, and had difficulty in passing urine. On admission, she was almost wholly blind; she could just distinguish the form of a person near her, but not the features. The retinal vessels were very small, and the white spot cloudy. She was quite paraplegic, being unable to move the legs in the least degree; and had lost sensation almost entirely over the whole region of the motor paralysis. She had no power over the sphincters; the urine dribbled away, and much was retained, and had to be drawn off by the catheter. There was no paralysis of the upper limbs, or of the face, or of the muscles of the eyeball. Her mind was clear. She was very hungry and thirsty. She had a large deep bed-sore on each buttock; and her feet were blistered in many places, from having been burned by hot bottles. She complained of pains in the arms. She had the sensation of cold in the legs, though anæsthetic as to touch. Had been subject to pains in the head ever since her marriage. Four days after admission, she was able to see much better. In three weeks, she was beginning to move the right leg. She died in about a month, from exhaustion consequent on the bed-sores.

POST MORTEM EXAMINATION.—The brain was healthy. At a point corresponding to the last dorsal and first lumbar vertebrae, the spinal cord was much disorganised, shewing a dark brown colour over much of its thickness. A similar condition, though of less degree, existed about the middle of the dorsal region. After preparation, there is seen a thickening of the connective tissue of the cord, and a somewhat gelatinous appearance of what had been the columns of the cord.

This case illustrates the usual course of myelitis, shewing a tendency to spread upwards, with complete anæsthesia and motor paralysis below the seat of lesion. From the first, there seem to have been no meningeal symptoms, such as acute pain on movement, with an instinctive objection to all motion, lest the pain should be renewed. Spinal meningitis indeed seldom occurs without more or less myelitis, but myelitis may certainly run its whole course without any spinal meningitis.

Compare with this case that of a man now in the Bristol Infirmary.

CASE V.—Robert Sheppard, aged 41, a ship's carpenter, had been accustomed to work at heavy hammering, to perspire freely, and to be exposed to blasts of cold air whilst at work. Nine days before admission, he felt slight weakness in the lower limbs, and on the next day, on attempting to walk upstairs, he found himself deprived of sensation, and the power of motion in the lower limbs. On admission, he was found paraplegic, as to motion and sensation, from a line drawn horizontally round the body, half an inch below the umbilicus. There was complete paralysis of the sphincters. The urine, at first full of blood, was now slightly purulent. The respirations were scarcely increased, a proof that the expiratory muscles were not deprived of their nervous power. In this case, during the past four weeks since the commencement of the attack, the disease has certainly made no progress upwards. Motion and sensation are perfect in the upper extremities, and the respiratory process goes on unchanged. The temperature chart shews, however, that the inflammation has been going on, the thermometer on one occasion having marked 106 deg. Fahr., and the evening temperature now being above 100 deg.

I have placed under the microscope specimens of a diseased cord, showing one form of spinal sclerosis. There is seen great diminution of the multipolar cells of the grey matter. The white matter, especially of the posterior columns, is almost wholly gone; its place being taken by many amyloid bodies, granular matter, and a considerable growth of the very finest connective tissue. The patient had symptoms of locomotor ataxy for some years, and eventually a certain amount of paralysis.

There are also specimens of chronic disease of the cord from a patient of Dr. Marshall, the history of which I hope he will give us here some day. Having, however, seen the patient on several occasions, I have Dr. Marshall's permission to say that the main symptoms for years consisted of agonising neuralgia, both of the back and limbs, whilst only very partial paralysis supervened towards the close of his life. A longitudinal section of the cord shews in the grey matter some multipolar cells remaining, with the debris of tubes and broken up tissue, and many holes. The white matter is still more degenerated.

* Read before the Bath and Bristol Branch.

You will see also specimens of myelitis, following fracture of some of the bodies of the vertebrae and consequent hæmorrhage, from the case brought before you by Dr. Beddoe on a recent occasion. The section shews great increase of the connective tissue; no amyloid bodies; special diminution of the elements of the grey matter, the multipolar cells being few in number; and a great deal of granular matter in the place of the grey substance.

Lastly, there is a specimen for the middle of the cervical bulb of the cord, shewing a different form of sclerosis, in a case of general paralysis of the insane. The disease here shews itself in the white matter, and to a less degree in the grey, in the form of small masses of semitransparent material, with more or less irregular outline. The posterior columns are chiefly affected.

In a meeting composed of busy practical men, it would be scarcely seemly to leave untouched the question of treatment, and it is as bearing upon treatment that a knowledge of the pathological anatomy is so important. For what, after all, is usually the main lesion in myelitis, except in the most rapidly fatal cases? It is increase of the connective tissue, and disintegration of the nervous elements consequent on this increase. Now this increase of connective tissue is a proof that we have to deal with a slow inflammatory process. Softening may take place rapidly; induration is invariably gradual. This being granted, and it being now known that we have to deal with a similar lesion, affecting various portions of the cord in paraplegia from myelitis, in many cases of infantile paralysis, in locomotor ataxy, and in some cases, at least, of progressive muscular atrophy, we have before us two principles of treatment, one to support the patient by food, rest, and warmth, and the other to improve the tone of the altered vessels. In acute cases, the use of leeches, blisters, etc., is contra-indicated, partly by the fear of bed-sores, partly by the tendency to depression induced by lesion of so important an organ as the spinal cord. A better effect is obtained by the use of the spinal ice-bag. My own experience points to the advisability of using it alternate hours, watching the pulse carefully meanwhile. It relieves acute symptoms, depresses the temperature, and enhances the comfort of the patient. The drugs most useful in the treatment of these cases are strychnine and ergot; strychnine in the more chronic cases, ergot in the more acute. In infantile paralysis, strychnine will help towards a perfect cure; in progressive muscular atrophy, in locomotor ataxy, and in chronic myelitis, it puts off the evil day, and improves the condition of the patient amazingly; and although acute myelitis is a fatal condition, and may end in death, even in eighteen or twenty hours, yet, in many cases, the combined use of the icebag and of ergot will prolong life, and in some few instances may allow acute myelitis to become chronic. I am far from mentioning these remedies as alone useful, but one cannot help speaking well of what has been found advantageous in one's own practice.

BROMIDE OF POTASSIUM AS A FEBRIFUGE.

By CHARLES MACLEAN, M.B., Applecross.

THE following particulars of a case, taken from my notes, illustrate the value of bromide of potassium in fevers. It came under my care on January 10th; and, as it was a convenient one for observation, I resolved to give a fair trial to the medicine. I had a confidence in it, grounded on some former experience of its efficacy; but the result, I am bound to say, exceeded my expectation. The following are the details.

January 10th. B., a well-nourished woman, aged about 40, was taken ill four days ago, with a well-marked attack of enteric fever. Pulse, 140; temperature, 105.2 deg. Fahr. The respiration was hurried; some sibilant rales were heard over both lungs. The expression of countenance was anxious. The tongue was red at the edges, with a whitish fur down the middle. The bowels were relaxed; the evacuations somewhat bloody. There was tenderness on pressure in the right iliac region. I gave a dose of chalk mixture, with ten minims of tincture of opium, to be followed by twenty grains of bromide of potassium three times a day.

January 13th. There was remarkable improvement in all the symptoms. Pulse, 100; temperature, 101 deg. F. The characteristic pea-soup stools were present, without any blood. There was occasional cough, but hardly as troublesome as on this last day. The respiration was little, if anything, above the normal in frequency. Some pain was still occasionally felt in the right iliac region. The bromide was continued as before.

January 14th. She was much the same as the previous day, and was ordered to continue the medicine, with milk and farinaceous diet.

January 15th. She was improving. Pulse, 94; temperature, 99.5 deg. The evacuations were less frequent, and of the same character.

The tongue was clean and moist. The countenance was placid. She was ordered to continue as before.

January 17th. The medicine was omitted.

January 19th. Pulse, 116; temperature, 100 deg. The tongue had become, as at first, furred in the middle, and was protruded tremulously. The face was flushed and anxious. Respirations 45 in the minute. Sibilus was heard extensively over the chest, but no small crepitation was audible, on the most careful examination. Thirst was complained of. The bromide was recommenced at once; and diluents were given *ad libitum*.

January 22nd. Pulse, 90; temperature, 98 deg. The countenance had a cheerful expression. The tongue was uniformly clean. The bowels were well. The cough was sometimes troublesome, but the respirations were 22 in the minute.

January 23rd. The dose of bromide was reduced to twelve grains.

On the 29th, convalescence was quite established; and on the 31st she was up most of the day and fast gaining strength.

In the intervals between the 10th and 13th, and 19th and 21st, I was unavoidably absent; but, from what I could gather, an improvement took place on both occasions in thirty or thirty-six hours after the bromide was commenced. I reduced the dose on the 23rd, because the temperature remained at 98 deg. F., a little lower than I thought necessary, and I feared a reactionary movement might take place if she were kept too deeply under its influence.

If the facts of this case prove nothing as to the efficacy of the bromide, there must have been one or two remarkable coincidences in the case. I am, however, of opinion, from what I have before seen of it, that there was more than mere coincidence in the matter.

A word as to the physiological action. If, as I believe, bromide of potassium acts by constricting or giving tone to the minute vessels directly, it is calculated to strike at the very root of the disease in fever; for it will then take the place of the paralysed vaso-motor system of nerves, and thereby keep in abeyance that inevitable tendency to congestion that follows the premonitory stage of the disease—the stage characterised by excitement or rigor.

If this view be correct, it is, I think, obvious that the use of the bromide in the treatment of pyrexia is much more in accordance with physiological principles than the direct application of cold; for, however useful the treatment by cold water may be, one thing we must remember is, that we are not treating *heat*, for temperature is a mere symptom of disease; an useful index, no doubt, of the degree of mischief and oxidation of the elements going on in the system.

LEPROSY OF THE JEWS.

By BENJAMIN BLOWER, M.R.C.S. Eng., Liverpool.

I HAVE been much interested with the lectures and letters on leprosy, which have lately appeared in the JOURNAL, but I do not think the leprosy of the Jews is a subject by any means exhausted; and, therefore, beg permission to add a few lines. In studying the Scriptures, we should endeavour to divest our minds of everything apart from the object of revelation. However interesting in a sanitary point of view the laws given to Israel may be, we must remember that "*salus populi lex suprema*" is not the object of the book, but the affairs of the soul.

Turning to Leviticus, chapter xiii, we find the priest not endowed with power to heal, for this the law could not do; but with directions to distinguish two kinds of leprosy from other allied diseases which, apparently infectious, were not unclean. The leper white all over, was not unclean, or kept apart; Gehazi talks with the king in the gate of justice (Second Kings, chap. viii, verse 4). Even among the Syrians Naaman was a great man with his master (Second Kings, chap. v, verse 1). But the leper with raw flesh is unclean; his disease is of all others the most loathsome and disgusting, incurable by human efforts, and transmissible to his offspring. He must dwell outside the camp; we are not told it was on account of contagion. Other infectious diseases are not so separated; for example, "The Lord shall smite thee with the itch, whereof thou canst not be healed" (Deut. ch. xxviii, v. 27); "and the plague, spread not in the skin, the priest shall pronounce him clean, it is but a scab, he shall wash his clothes and be clean" (Lev. ch. xiii, v. 6); "a sore botch that cannot be healed" (Deut. ch. xxviii, v. 35). Unclean evidently means unlawful for use by a typical people. The altar and the priest had to be cleansed, and "almost all things were purged with blood" (Heb. ch. ix, v. 22). The spiritual significance of this separation is not for discussion in a journal devoted to medicine; but from what has been said I take it for granted it was not on the score of health, but "that they defile not the camps, in the midst of which I (the Lord) dwell" (Num. ch. v, v.