

however, to its size and situation, one might fairly suppose that either by pressure or interference with blood supply, or, perhaps, by slight hæmorrhage, it may have had some share in the production of these symptoms.

CASE IV.

Syphilitic Disease of the Cerebral Arteries, with Aneurisms and Aneurismal Dilatations.

J. S., said to be 51 years of age, married, and a sailor by trade, was admitted on the 11th July, 1877. He was a tall and large-framed man, in fair condition, but looking at least ten years older than the age stated. He showed distinct symptoms of general paralysis in his walk, which was uncertain and shuffling, and much more in his speech, from tremor and immobility of the lips, which he seemed unable either to close firmly or to open freely. His memory was much impaired; he gave many different statements of his age, and could not supply any connected account of his life. He was quiet and cheerful, and, though he did not exhibit any well-marked delusions, he had rather an exalted notion of his own condition, especially of his ability as a seaman, and maintained that he was quite well, and able to go to sea at any time.

There was no change in his condition till a few days before Dec. 13, when he began to complain of a pain in his head, which he referred to a spot above the left eyebrow. On the morning of that day his right arm and leg, and the right side of his face were observed to be paralysed; he could move both the limbs, but he could not stand, nor could he grasp with the hand. There was no aphasia, but his speech was indistinct, from paralysis of the lips and tongue. The distortion of his face was well marked. On the evening of the 14th the arm was totally powerless, the leg remaining as before. The sensibility of the paralysed limbs was not affected; reflex action was exalted in both legs, and about equal in both. The right pupil afterwards became somewhat dilated. On the 28th the power of the paralysed muscles of the limbs and face was gradually returning, but still far from being completely restored.

He continued to improve till the 21st Jan., when he had a convulsive fit of short duration, after which the left arm was powerless for a short time only. Next day the face, which had previously been drawn to the left, was less distorted than it was before the fit, owing to paralysis of the muscles of the left side, the lips in particular being so paralysed that he could scarcely articulate, or retain liquid food in his mouth till he swallowed it. There was also, probably, aphasia, as he seemed to search for words that he wanted, and accepted them gratefully when supplied, indeed, he made great efforts to explain that he could not find words to express himself. His intellect appeared to be as clear as before. None of the limbs were quite paralysed, but all

partially so, and about equal on the two sides, his grasp being very feeble, and the strength of his legs quite insufficient to support him. He continued, without alleviation of the paralysis, till 22nd March, when he died with symptoms of pulmonary œdema. At the autopsy exaggerated changes were found in the larger vessels of the brain, of which the following are the details. The vertebral and basilar arteries, from the entrance of the former into the spinal canal, to the termination of the latter, were greatly increased in size throughout, and very tortuous, but at several points the dilatation was exaggerated so as to become aneurismal. Near the entrance of the left vertebral was a dilatation measuring 1·1 inch in circumference, then the artery bent sharply to the left with a circumference of 0·75 in. It next returned, with an equally sharp bend, to a point short of the middle line, to join its fellow, having at that bend a flattened dilatation, 1·4 in. in circumference, 0·7 in breadth, and 0·5 in. depth. The right vertebral, having a nearly uniform circumference of 0·75 in., curved to the left, crossing the middle line to join the other.

The basilar, at its origin, had a circumference of 1·4 in., it then narrowed to 0·85 in., again dilated, with a projecting pouch on its right side, to 1·25 in. circumference, and, finally, narrowed somewhat before its division. It lay, for the most of its course, to the right of the middle line, curving across from the left at its origin, and towards the middle line at its termination. The left carotid, and the left anterior and middle cerebral, near their origin, each measured 1 inch in circumference. The branches of the left middle cerebral, and both the anterior cerebral, beyond the communicating branch, were also dilated. There was a globular aneurism, nearly as large as a pea, on the right anterior cerebral, about half-way back over the corpus callosum, and another small globular aneurism on a branch of the left middle cerebral in the Sylvian fissure. All the arteries and aneurisms mentioned had a white opaque aspect; they were full and round, as if distended with injection, and felt hard and solid to the touch. When cut open they were found to be filled, apparently completely, with hard, white, fibrinous deposit, but in some parts, especially the smaller branches, either wholly or in part with red clots.

The walls of the arteries were greatly, but irregularly thickened. Sections were made from the middle cerebral. The thickness of the wall varied from one-tenth to one-twentieth of an inch, and the lumen of the vessel was about seven hundredths of an inch. Under the microscope the sections showed an appearance exactly corresponding to the syphilitic changes described by Heubner, the vascular coats being infiltrated with the small, nucleated, round and fusiform cells of that condition. Besides those lesions there was, at the posterior end of the left superior temporal convolution a spot about an inch in diameter, round the margins of which the dura mater was adherent to the brain substance, while in the central part a thin layer of pus-like lymph was interposed.

The aorta was atheromatous, and the heart enlarged, weighing $11\frac{1}{2}$ oz.

This case appears to be a good example of syphilitic change in the cerebral vessels, accompanied, as it is said generally to be, with symptoms similar to those of certain forms of general paralysis.

CASE V.

Similar to the Preceding.

W. J., a man aged 30 years, married, and a carter by trade, was admitted 2nd Feb., 1877. He was of small spare frame, and bilious temperament. He had ptosis of the left eyelid, and the pupil of the same eye was contracted and immobile; no other paralysis was observable. Mentally, he was in an extremely excited state, restless and noisy, shouting, weeping, fighting, tearing clothes, and breaking windows, and his conversation was disconnected and meaningless. He went on, with little change, till the 3rd of April, on the evening of which day he was observed to be paralysed, and unable to stand. On examination the right arm and leg were found to be quite powerless, distortion of the face was not marked, but he was scarcely able to swallow. He soon fell into a lethargic, but not comatose condition, in which he remained with but little change, till he died on the 6th of April.

At the autopsy the dura mater, arachnoid, and pia mater, were found adherent to each other, and to the brain substance in the left parietal region, so that when the membranes were removed some of the gray matter was torn away. There was a dilatation of the basilar artery for nearly an inch of its length, having in its course three rounded projections to the right side, at the most prominent of which the artery measured eight-tenths of an inch in circumference. On section the artery appeared to be nearly occluded by thickening of the walls and deposit of fibre, and the projections were principally caused by an excessive thickening of the wall. Microscopic sections taken through one of these places, where the wall was nearly one-fifth in. in thickness, showed syphilitic changes even more marked than in the previous case, the small nucleated cells appearing to constitute nearly the whole wall. There was an aneurism about the size of a pea, and having thick tough walls just at the division of the left carotid artery, and also three or four small aneurisms on the left middle cerebral and its branches. These had probably the same structure as the first-mentioned, but were not examined microscopically. In the substance of the left optic thalamus there was a spot the size of a pea extremely softened, so that when sections of the thalamus were made, the softened matter came out on the knife, and left a clean round hole.

This case is similar to the preceding, as regards the nature of the arterial lesion, and the occurrence of sudden hemi-