connective tissue, in the meshes of which are large numbers of cells of considerable size. The spaces in this layer are caused by tearing during the preparation of the sections. Next is seen a wedge-shaped area in which the meshes of the connective tissue framework of the pia-arachnoid are occupied by a network of fibrin presenting a finely reticulate structure, in which are recognisable a few cells. The rest of the section is occupied by a dense collection of small cells, among which no strands of collagen are to be found.

v. Giesen's stain, × 80.

Fig. V.—Case 2.—To the left and above is a collection of multinuclear leucocytes embedded in a homogeneous material, apparently derived from the disintegration of the other small cells, staining unevenly in different parts, and containing micro-organisms, varying slightly in size, and generally, but not invariably, arranged in pairs. This sketch is made from a portion of the dense cell infiltration shown in the preceding figure.

Below and to the right is represented, for the sake of comparison, one of the large cells found in the deeper part of the pia-arachnoid, at the junction with the molecular layer (see Fig. IV). It possesses a large nucleus and its cytoplasm is very abundant.

Loeffler's method. × 1200.

An Angeioma of Broca's Convolution.

By A. F. SHOYER, M.B., Assistant Medical Officer and Pathologist, County Asylum, Lancaster.

ANGEIOMATA of the internal organs are not common and have usually been found in the liver. Including the present case I can find record of but seven instances of this tumour occurring in the brain. For the purposes of comparison I have examined the records of four previous cases, all that I could get access to, and shall preface the account of my own case with a short notice of each of these four cases.

The first case was one of a calcified angeioma in the centrum ovale of a female suffering from melancholia. The notice of the case is in the *British Medical Journal* for 1884, and is very short, containing no details.

In the *American Journal of Medical Sciences* for November, 1894, there is a record by Allen Starr and McCosh of an operation in which a plexiform mass of veins in the pia mater was removed from the parietal region. The patient suffered from epilepsy subsequent to two falls on the head, and the result of the operation was a cure. The brain substance beneath this tumour was normal.

In the archives for neurology of the London County Council Dr. Cecil F. Beadles describes a case of an angeioma in the left frontal lobe, in which there was a peculiar varicose con-

https://doi.org/10.1192/bjp.46.195.775 Published online by Cambridge University Press

dition of the vessels of the pia mater, similar to what I shall describe below in my own case. The patient was an epileptic and became insane.

Dr. Ohlmacher describes a case in the *Journal of Nervous and Mental Diseases* for July, 1899, in which there were multiple cavernous angeiomata, one in the callosal gyrus, another in the optic thalamus, and another in the cervical cord. In the same case there were also a fibro-endothelioma of the cerebral dura mater, an osteoma of the spinal arachnoid, and a hæmatomyelia. The patient was aged forty-eight, and subject to epileptic seizures, but was quite sane. He attributed his disorder to a blow on the head which he received at the age of twenty-five.

Dr. Ohlmacher considers that the angeiomata had started in the pia mater, and invaded the brain substance.

The clinical history of my own case is incomplete, and her previous history impossible to ascertain, as she was a friendless pauper.

E. H—, a female aged 61, was admitted to the County Asylum, Lancaster, on the 5th of May, 1896. She was stated to have been insane two months, and the predisposing cause given was paralysis.

On admission she was described as "demented, restless, and fretful; said her life is poisoned. She is feeble and aphasic; right side is shrivelled and contracted from infantile paralysis."

During the four years of her life in the asylum she was sometimes maniacal, and twice had epileptiform seizures, once in August, 1896, when the left limbs were convulsed, and again in July, 1897.

She died on February 4th, 1900, of colitis.

Autopsy.—External appearances.—Well-nourished; varicose veins on both legs, and pigmented scars on lower two thirds of each leg. Limbs on right side are contracted and their muscles atrophied, but the bones appear of equal length with those of the opposite side. *Skull* is thick and dense. Dura mater thickened and adherent to vault of skull all over.

Pia-Arachnoid.—Thickened, and at site of Broca's convolution adherent to tumour described below. The vessels in the pia mater over both hemispheres were dilated in an irregular varicose manner, some being as thick as a crowquill, and all being distended with clotted blood. These dilated vessels lay in the sulci, which gaped to receive them, as if from atrophy of the gyri. The dilated condition of the vessels was most marked over the left hemisphere, but still the largest vessel was in the right occipito-parietal sulcus. There was distinct flattening of the left frontal and parietal lobes. At the site of Broca's convolution was a somewhat bulging black tumour presenting a surface about an inch in diameter. The membranes over it were thick and adherent, and showed indistinctly the outlines of the gyri. To inspection and touch it appeared like a cyst full of coagulated blood. On horizontal section through the centre of the tumour it was seen to be a fairly well demar-

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FIG. 1.

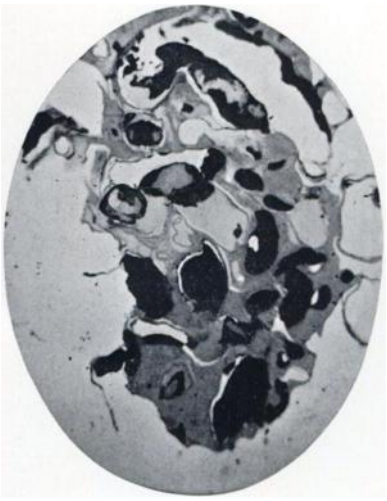


FIG. 2.

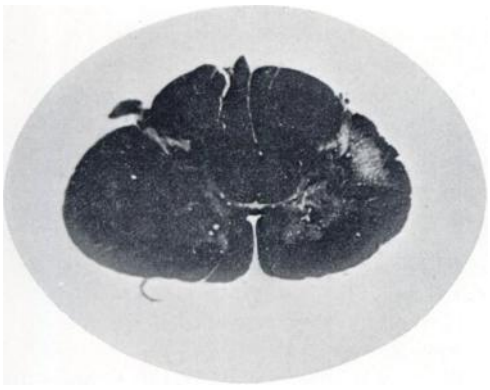


FIG. 3.

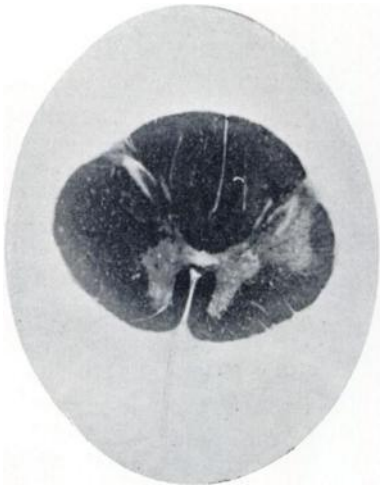


FIG. 4.

To illustrate Dr SHOYER's paper.

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cated cavernous body, extending for about an inch in all directions, but not encapsuled, consisting of a mass of sinuses full of clotted blood. The left middle cerebral artery was very much thicker than the right, and in the Sylvian fissure gave off a stout branch to the tumour, after which it was of normal size. The white matter in the neighbourhood of the tumour had a porous appearance, owing to the presence of numerous small spaces or lacunæ in its substance. The left crus cerebri was about half the size of the right; the left half of the pons was shrunken, and also of the medulla, and the left pyramid small and dark in colour. On section of the cord the right crossed pyramidal track stood out by reason of its darker colour. There was extensive ulceration of the whole of the large intestine, and of at least the last two feet of the small intestine. The aorta was slightly atheromatous, and the kidneys moderately cirrhotic. The state of the other organs called for no note.

Histology.—1. The tumour itself is made up of spaces of varying size full of blood-clot, whose walls are comparatively thin, and composed of fibrous tissue, mostly lined with endothelium resembling that of a vein.

The substance between the sinuses occupies much less space than they do, and is evidently altered nervous material proper to the situation. There is a basis of connective tissue developed from the neuroglia, a very few degenerated nerve-cells, and a fair number of beaded, degenerated medullated fibres seen in sections prepared by Pal's method. The arteries have much-thickened walls, in which a hyaline change is taking place, giving them a glazed appearance in contrast to the clearly stained surrounding tissue. Around the arteries are dilated lymph spaces containing a few nuclei of cells, whose branching processes make up a fine areolar network. The pia mater over the tumour is very thick and contains numerous nuclei. There are numbers of normal capillaries in the matrix of the tumour.

2. The porous-looking white matter described above is seen to owe its appearance to the existence of numerous lacunæ of varying size, each of which contains the section of one or more blood-vessels, supported in a very loose network of areolar tissure, being probably the dilated perivascular lymphatic spaces.

3. The cortex in the near neighbourhood of the tumour shows marked changes, the pyramidal cells being scanty, and the tangential fibres altogether absent.

4. Sections of the cortex of the ascending frontal convolution at some distance from the tumour presented a fairly healthy appearance, the pyramidal cells being numerous and their processes well formed, while the tangential fibres are plentiful.

5. In the pons the left pyramidal fibres are largely replaced by connective tissue.

6. In the medulla there is old degeneration of the left pyramid, and the right nucleus of the twelfth nerve is smaller than the left.

7. Sections at various levels of the cord show sclerosis of the right crossed pyramidal track. The right anterior horn is in all sections considerably smaller than the left, but the cells are fairly healthy and more free from pigmentary and other changes than is usual in the chronically insane.

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Remarks.—The curious condition of the vessels of the pia mater found in both this case and that of Dr. Beadles, and the case of Starr and McCosh, when the membranes only were affected, would seem to support Dr. Ohlmacher's conclusion that the condition originates in the soft membranes, but in the present case, as in that of Dr. Beadles, the main blood-supply was from the middle cerebral. Angeiomata of the liver have been said to often arise from an injury, and it is interesting to note that in several of these cases of angeiomata of the brain there is a history of previous injury to the head, just as in the present case there was previous hemiplegia, so that possibly the condition starts at the site of an old hæmorrhage, and is due to disturbance in the circulation of the brain.

DISCUSSION.

At the Annual Meeting of the Medico-Psychological Association, London, 1900.

Dr. MICKLE.—I have never come across any case of the kind, and I should think this one now described by Dr. Shoyer is almost unique. I did not hear anything as to whether the functions of the third frontal showed impairment during life, whether the case was right-handed or left-handed.

Dr. SHOYER.—The case is one of infantile hemiplegia. The patient was completely aphasic.

Occasional Notes.

The Annual Meeting of the Medico-Psychological Association.

THE old-time Annual Meetings when holden in London were always voted successful and delightful, and so forth. At least the country members always enjoyed them, and when our dear old friend Dr. Paul negotiated a dinner at the "Ship" every one carried away the most agreeable recollections of Greenwich and its neighbourhood.

Annual meetings nowadays are different, in accordance with the more strenuous spirit of the age. So when we record that a second consecutive annual meeting has been held in London, and has been most useful and successful, we do not mean merely from a social point of view.

The 1900 meeting has shown many noticeable features, and set out a fine record of work.

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