

Clinical Cases.

CASE OF GLIOMA OF THE RIGHT HEMISPHERE.

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S. H., æt. 19, domestic servant, was admitted to the Bristol Royal Infirmary, November 17, 1881, complaining of loss of power in the left arm.

History.—Two months ago she observed a twitching or jerking of the index and middle fingers of the left hand, which came on for a few minutes at a time, several times a day. This twitching was not attended by any pain or other abnormal sensation, and did not interfere with the voluntary control over the fingers when the twitching was not present. About a week afterwards the same phenomenon was observed in the thumb, and two or three days later in the ring and little fingers. The jerking then affected the wrist-joint in a day or two, and a day or two later again the elbow-joint became involved; but the muscles moving the shoulder-joint remained exempt. In about three weeks from the commencement the jerking ceased, and she began steadily to lose power in the limb, being able to move the arm, but not to grasp anything in her hand. She placed herself under medical treatment until her admission to the Bristol Infirmary, but did not observe any particular alteration in her symptoms beyond the increasing weakness in the arm, and some headache.

On admission she presented the appearance of a well-nourished, healthy young woman. The left arm is weak; the fingers cannot be quite extended, especially the inner ones; they can be flexed so as just to touch the palm; the movements of the thumb are almost abolished; wrist can be flexed and extended slightly; elbow and shoulder-joints can be moved more freely, but the movements can easily be restrained; the hand can just be raised to the top of the head; the intrinsic muscles of the thumb and little finger are a little smaller than those of right hand; no grooving on back of hand, and left forearm measures

fully as much at various points as the healthy one. No evidence of joint disease. Says there is a *feeling* of numbness in the left hand; but on experiment, there does not seem to be any actual difference in sensibility between the two sides. Face symmetrical, and movements of leg unimpaired. No abnormality in heart or other organs; sight good.

Previous History.—Has always had good health, and has had no illnesses; has never had any kind of fit, nor blow on head that she can remember. During the last three weeks she has had a good deal of headache, unattended with vomiting. Temperature normal. No history or marks of syphilis.

Family History.—Father died of consumption. Mother alive and healthy. Only one brother and one sister, both alive and healthy.

Subsequent History.—Was kept in bed for four days after admission, and then allowed to get up. On attempting to walk she noticed a stiffness of the left leg, and a day or two afterwards she could not walk without dragging the toes along the floor; there was marked weakness of the limb also, even when lying in bed. Plantar skin reflex retarded on left side, and less marked than on right; knee reflexes are well, and about equally marked on the two sides. On one occasion a slight amount of ankle clonus was obtained in the left foot. She had not experienced any kind of numbness, pain, or other sensation in the leg previous to this partial paralysis, and was not aware of anything being the matter with it until she attempted to walk on it. At this time, six days after admission, the arm had become weaker than on admission, so that the hand could not be raised to the top of the head. On examining the face it was still symmetrical in appearance, but on her attempting to draw back the angles of the mouth, it was found that the left angle of the mouth was only very slightly retractable; this paralysis, however, applied to voluntary motion only for the automatic action of the left zygomatic muscle, as seen brought into use in smiling, for example, remained unimpaired. How long this condition may have been in existence it is impossible to say. Neither the buccinator, nor the orbicularis, nor any other facial muscle was affected. On ophthalmoscopic examination, the margin of the left disc was observed to be shaded off; but there was no swelling of the disc, and there was possibly some hyperæmia of the right disc.

Dec. 1st.—Complained a good deal now of headache, which from the first onset of it has generally been on the right parietal region, though sometimes it was situated equally across the two sides of the forehead; the pain is of a dull, aching character, like a bad headache.

The tendon reflexes of the left knee and forearm now excessive. The disc of right eye decidedly hyperæmic, and it is somewhat swollen also. The shading off of the margin of the left disc is more marked.

Dec. 4th.—Complained very much of headache, which is now like "rheumatic," rather sharp and darting, located generally in the right parietal region, but sometimes in the right frontal region. The scalp is tender on combing the hair. For the last three or four days she has vomited in the morning on rising from bed, the vomiting being unattended with nausea or retching.

The headache is less severe by night than by day, being worst in the morning, but never quite absent.

Sensation and power of localisation in left hand are now quite normal, nor is there now any subjective anæsthesia.

Dec. 7th.—Remains about the same, but says she "sees double" at times. There is no squint nor paralysis of the muscles of the eye-ball perceptible on testing her power of moving her eye-balls. Sickness and headache continue.

Dec. 15th.—To-day, on approaching her, I noticed that her eye-balls were moving independently of one another, their motions not being co-ordinated until her attention being given to fix her gaze upon a definite spot, she was able to regain control over the motions of the eyes. The double vision comes on frequently, and lasts several minutes.

Can. now only move fingers very feebly; no power of grasping; slight elbow movements; cannot raise her arm, but habitually carries her left hand supported by her right. Paralytic symptoms of face and leg remain unaltered. Headache often, but no impairment of mental faculties, nor of speech. Vomiting occasionally.

Some slight improvement during the next fortnight.

Jan. 4th, 1882.—Is now very drowsy and dull by day, but does not keep her bed. Is perfectly clear in her mind. Very restless at night, and cries out in her sleep. The pain in the head is very severe; vomits every morning.

Jan. 14th.—Headache still worse, almost entirely referred to right parietal region; no vomiting. The absence of co-ordination in the movements of the two eyes is now very marked; but the movements are still quite under her deliberate control. Optic neuritis is now well marked and equally present in the two eyes. Being much worse in herself she now remains in bed altogether.

Medicinal treatment having quite failed to check the progress of the disease, a consultation of the surgeons was held to determine whether it was advisable to resort to operative interference—to remove the growth, if that should

be possible, from the cortex of the brain, or if that were not possible, to relieve the pressure upon the brain by trephining. Having held a consultation the surgeons decided that, though they would not urge upon the patient, or her mother, the desirability of performing any operative measures, at the same time they were quite willing to make the attempt if it was wished. The grounds of this decision were, that though the patient's present condition was practically hopeless, it was probable that the lesion had extended over too large an area of the brain for its successful removal to be possible.

Jan. 17th.—The patient decided not to have any operation performed. Headache about the same; no vomiting; no ptosis nor other paralysis of ophthalmic muscles. Remains in bed heavy and drowsy, but not at all insensible; no kind of convulsion.

Jan. 18th.—Passed a very restless night. Has been screaming out this morning from severe lancinating pains in the head, very much more acute in character than it has ever been before; is quite sensible, and able to talk perfectly. At 10 A.M. had a hypodermic injection of $\frac{1}{4}$ gr. of morphia and $\frac{1}{16}$ gr. of atropia; two hours afterwards she was sleeping, and snoring rather loudly. At 4 P.M. had a severe attack of hiccough, which did not, however, completely awake her. At 9 P.M. she was still sleeping; right pupil still remained dilated, but left was contracted. At 11 P.M. had another attack of hiccough; slept afterwards, and died quietly shortly before midnight, without any convulsion.

Post-mortem examination 12 hours after death.—Body well nourished. Only head examined. On removing skull-cap, which was not abnormally adherent to the dura mater beneath, a yellowish-coloured patch was seen lying beneath the dura mater, in the centre of the parietal region of the right cerebral hemisphere. On removing the dura mater, which was not adherent to the pia mater, some yellow-coloured fluid escaped from the interior of the growth, which was now fully brought into view. The tumour was soft, and had broken down in the centre; its superficial surface was nearly circular in shape, situated apparently on the site of the fissure of Rolando, but there was great difficulty in tracing the convolutions of the right hemisphere. On microscopical examination, the fresh tumour exhibited the structure of a glioma.

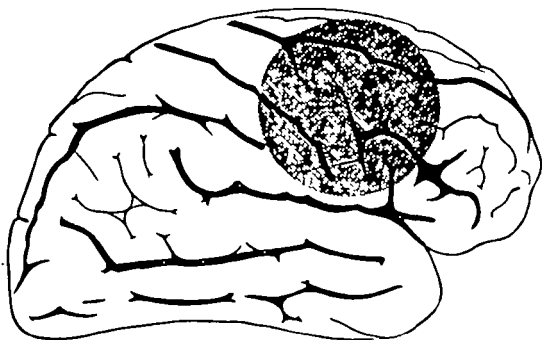
Measurements.—Cerebral hemisphere from before backwards, $6\frac{1}{2}$ in. Tumour from before backwards (maximum), 2 in. Tumour transversely (maximum), $2\frac{1}{4}$ in.

NOTE BY DR. FERRIER ON THE CONDITION OF THE BRAIN.

THE brain which was sent to me by Dr. Shaw, after hardening in spirit, presented no abnormal appearance, except on the right hemisphere, where the tumour was visible, and of the exact dimensions indicated by him. The surface of the tumour coincided almost exactly with the surface of the hemisphere.

On careful examination it was seen that the growth had essentially only displaced and compressed the convolutions, so that the arrangement of the gyri and sulci was considerably altered.

The centre of the tumour, which was soft and easily broken down, coincided almost exactly with the centre of the præ-central sulcus. The ascending frontal or præcentral convolution, instead of pursuing its usual direction from above, downwards and forwards, made a sweep round the posterior aspect of the tumour. This convolution was much flattened and hollowed out anteriorly, and pressed backwards against the



ascending parietal or posterior central convolution, which, with the intervening fissure of Rolando, made a sweep round the tumour posteriorly. The bases of the frontal convolutions were compressed forwards in irregular gyrations by the anterior margin of the tumour, and the lower extremities of the ascending convolutions similarly downwards towards the fissure of Sylvius.

The tumour could be shelled out of its position more or less easily, and when it was followed in this way it was found to have the shape of a pear or wedge, the apex penetrating through the centrum ovale almost horizontally inwards to the roof of the lateral ventricle, where the corpus callosum begins to radiate into the hemisphere. It did not extend to the

cerebral basal ganglia, which were of normal appearance and consistence. The position and relative size of the tumour are indicated on the accompanying figure, and the mode in which the convolutions were displaced can be ideally represented by supposing the tumour to have grown out on all sides from a centre in the præcentral sulcus.

This case illustrates very clearly the fact pointed out by Hughlings-Jackson, that the most volitional and independent movements are the first to suffer from any cause affecting the motor centres generally, the thumb and index finger before the rest of the hand, and the distal before the proximal movements of the upper extremity, the arm before the leg, &c.

It is doubtful how far operative interference might have succeeded, owing to the depth to which the tumour penetrated the centrum ovale. But it is not impossible that enucleation might have been effected, or at any rate, the compression relieved by the operation of trephining. There is reason for believing that much may yet be done towards the relief of these and similar cases by surgical interference under proper antiseptic precautions.