Case of large cerebral tumour without optic neuritis and with left hemiplegia and imperception / by J. Hughlings Jackson.

E. Wettenkof

13.

Jackson

Tumour v Hemiplegia

13.

CASE OF LARGE CEREBRAL TUMOUR

WITHOUT

OPTIC NEURITIS,

AND WITH LEFT

HEMIPLEGIA AND IMPERCEPTION.

CASE OF LARGE CEREBRAL TUMOUR WITHOUT OPTIC NEURITIS, AND WITH LEFT HEMIPLEGIA AND IMPERCEPTION.

By J. Hughlings Jackson, M.D.

Physican to the London Hospital and to the Hospital for the Epileptic and Paralysed.

It would, I think, be better to say in this case (of Eliza T., see page 7), that the patient died before optic neuritis had supervened. I shall, I think, give good reasons for this statement by references to cases I have published. During the life of this patient I made the diagnosis of tumour, and therefore kept looking at her optic discs. I diagnosed tumour, and tumour of the right posterior lobe, I may here remark, from the following facts—the kind of mental defect, and from its preceeding the hemiplegia, from the hemiplegia being left sided, and because the arm suffered less than the leg.

In some cases of cerebral tumour, optic neuritis comes on late (I refer of course to cases completed by autopsy in saying this).

In a case of glioma of the hinder part of the first (uppermost) frontal lobe I discovered no optic neuritis, although, having diagnosed tumour, I carefully looked for it.* But then this patient had only been ill about ten weeks when I last saw her. She lived close upon twelve weeks more, and thus it is not at all unlikely that optic neuritis should have come on. She had no defect of sight it is true, but that goes for nothing as evidence against the existence of optic neuritis·

* This case is recorded in "Medical Times and Gazette," 5th June, 1875—"*Convulsions nearly always limited to the right arm; tumour of hindermost part of the uppermost frontal convolution on the left side.*"

It would be absurd to draw such a conclusion as that a tumour in the uppermost frontal convolution did not produce optic neuritis. I might be supposed to be as likely as anyone to draw that conclusion, because I had seen another case in which when I saw the patient there was no neuritis.* However, I think it probable that the patient in this second case (see last foot note) had had optic neuritis, for I noted, "The optic discs are probably whiter than they should be, and their margins are not sufficiently clear. The arteries (*sic*) are slightly tortuous, the veins are not." This is a poor description of changes which were trifling. But I have, since I saw that patient, seen many cases of disappearance of severe double optic neuritis—disappearance so far, I mean, that even very good ophthalmoscopists could not say there had been optic neuritis.

Now let me mention a third case of tumour in the same region, with other tumours in other positions,† all of the same cerebral hemisphere, which case also shows very late onset of neuritis, and also nearly complete disappearance of these morbid changes. This man was under my care first in December, 1873. It was only on September 19, 1874, that changes in his optic nerves were seen. His discs had been examined scores of times before, the diagnosis of tumour having been made months previously. Now I saw this man in August, a month before the ontset of the neuritis, in a condition which I thought would probably soon end fatally; had it done so, the record would have been of a case of tumour of the brain

* Recorded, "Medical Mirror," 1st Sept., 1869, and also "Medical Times and Gazette," 24th Oct., 1874—"*Convulsion, limited to the right arm, followed by paralysis of that arm; tumour of the hinder part of the uppermost frontal convolution; tumour of both lobes of the cerebellum; no symptom referable to the cerebellum.*"

† Case recorded in "Medical Times and Gazette," 19th June, 1875—"*Right-sided fits, most of them limited to the right arm; subsequently hemiplegia; double optic neuritis; tumours of the left cerebral hemisphere.* The examination of the brain was made by Dr. Gowers." In the "Medical Times and Gazette," 21st July, is a wood-cut from a drawing of the brain by Dr. Gowers, showing the tumours appearing on the surface; there was one below the surface in the hindermost part of the uppermost frontal convolution.

which had not produced neuritis. As the actual progress of the case showed, the statement, "which had not *yet* produced neuritis," would have been better, for, as I have said, it did come on late. In about six weeks after the onset of the neuritis the discs were again normal. Had I examined for the first time the discs only shortly before death, which occurred in December, 1874, I might have supposed too that the tumour had not produced optic neuritis. It is a very common thing for the changes of severe optic neuritis to pass off, so far at least as to leave only slight changes recognisable by careful direct examination, and such slight changes which we should not (without of course *knowing* that there *had been* optic neuritis) dare to call relics of neuritis.

Let me now mention a still more striking case of late onset of neuritis. The man had had symptoms of brain* disease (convulsions) for about nine years before his death.

As from first to last his motor symptoms were all local, the probability is that the patient had had cerebral tumour nine years; he was under my care three years. He died March 29, 1875, and yet it was only about the middle of February of that year that the neuritis was discovered. His discs had been previously examined scores of times. It may, however, be well to give direct evidence as to the state of his eyes so late in his case as December, 1874. At this time he had some difficulty in reading. I could not determine whether this was part of his aphasia (for his articulation was at that time ataxic), or owing to defect of sight; his optic discs were normal. Mr. Couper was so good as to examine the patient for me. He too considered the discs normal, but he discovered (by the ophthalmoscope) a high degree of hypermetropia. When, on Mr. Couper's suggestion, we used a $\frac{1}{7}$ convex, the patient read very much better, but there was a residuum of aphasic difficulty. When the optic neuritis came on, no difference

* Case recorded in "Medical Times and Gazette," 4th Sept., 1875—"*Convulsions mostly beginning in the right leg; several years later right hemiplegia and aphasia; late onset of double optic neuritis; autopsy; tumour of the left cerebral hemisphere.*" (The examination of the brain in this case also was made for me by Dr. Gowers.)

was noticed in the patient's manner as regards sight, but we could not, at that stage of his illness, test it properly.

Here again we see the importance of knowing that there may be no defect of sight with optic neuritis. In the cases of the two men last noted above, there was no particle of evidence to indicate neuritis, except that supplied by the ophthalmoscope. Without the ophthalmoscope the defect of sight in one case, really the result of hypermetropia, might have been erroneously attributed to something wrong with the optic nerves. Again in this case it was simply impracticable to determine the hypermetropia without using the ophthalmoscope.

The mode of onset in the following case is noteworthy. The first symptoms were those of what I call Imperception. She often did not know objects, persons, and places. To the statement that there was only "confusion of mind," I do not object, for I should say that her mental confusion showed itself in inability to recognise objects, persons, and places. Nor do I object to its being called "only loss or defect of memory;" it was a loss or defect of memory for persons, objects, and places. Nor do I mind it being said that there was "only imbecility;" imbecility, like confusion of thought and defect of memory, is nearly always a matter of defect in perceiving things (persons, objects, and places).

There was what I would call "Imperception," a defect as special as Aphasia. The case did not correspond however to *loss* of speech, but to defect of speech. Total imbecility would correspond to loss of speech. There was partial Imperception.

I may add to the above that I am well aware that the character of the mental defect this woman had is that of delirium in acute disease, and also therefore that it is a defect of a common kind. These admissions leave the statement that she had Imperception untouched.

I think, as Bastian does, that the posterior lobes are the seat of the most intellectual processes. This is in effect saying that they are the seat of visual ideation, for most of

our mental operations are carried on in visual ideas. I think too that the right posterior lobe is the "leading" side, the left the more automatic. This is analogous to the difference I make as regards use of words, the right is the automatic side for words, and the left the side for that use of words which is speech. I confess, however, that I have little direct evidence as to the localisation of the morbid changes causing Imperception.

SUMMARY OF CASE.—*Imperception followed by left Hemiplegia, in which the upper arm suffered more than the lower arm, and the leg more than the arm—No Optic Neuritis; only trifling changes in the Optic Discs—Autopsy: large Glioma of the right posterior lobe.*

(For the Notes of the Case I am indebted to Mr. Charles Mercier.)

Eliza T., æt. 59, was admitted under Dr. Down's care, March 2, 1875. The following account was derived from the patient's daughter, an intelligent woman.

Patient has been a healthy woman up to the time of her present illness. Has never had rheumatic fever. For two months before this illness set in she had pain in the head and "neuralgia," but never did anything odd until about Christmas time. She was going from her own house to Victoria Park, a short distance and over roads that she knows quite well, as she has lived in the same house for 30 years, and has had frequent occasion to go to the park; on this occasion, however, she could not find her way there, and after making several mistakes she had to ask her way, although the park gates were just in front of her. When she wished to return she was utterly unable to find her way, and had to be taken home by a country relation to whom she was showing the Park for the first time. When she got home she seemed as usual, but from this time she began to alter, and during the next three or four weeks she seemed to age rapidly, got weaker and more feeble. Now and then too she would do odd things, she would put sugar in the tea two or three times over, she made mistakes in dressing herself; put her things on wrong side before, and did little things of that kind.

Five weeks ago she complained of feeling sick, and vomited; the next day she seemed dull, and less cheerful than usual; on the third day she astonished her friends by keeping her eyes shut the whole day; she sat by the fire with her eyes shut and never moved; yet she spoke and answered sensibly when questioned. She did make mistakes, but was never bad enough to make her friends think she was losing her wits. When she went to bed she was in the same condition. In the middle of the night her husband spoke to her, and found that she did not answer him, and the next morning when my informant saw her, she was lying quite senseless, making a kind of snoring noise. Her eyes were closed, she did not know anybody, and did not say anything, not even yes or no. She lay thus two days, and then became light-headed, talked a great deal of nonsense, and what she said she could not say distinctly except short in sentences. It was now noticed that her left arm and leg were paralysed; she could not move either of them in the least. From that time she has been gradually getting more herself. As she recovered she showed that her mind was still defective; she could not remember events from one hour to another. She mistook the people about her. When she came into the Hospital, she called all the nurses "Annie" (her daughter's name). She would say to one nurse "Are you the one that came just now?" when she had been previously visited by another nurse. She asked the under nurse how she was to know her from that one who had long tails, *i.e.*, strings to her cap.

March 9. She names a penny and a shilling, but slowly. A new penny she says is a sovereign, then that it is a two-shilling piece, only gold, then a new penny or a new half-penny, a florin and a shilling. "Are you sure?" "Well, I think so" (a long pause.) If it's not a shilling, it's a two-shilling piece."

After considering for some time, she names a watch. "What is the time?" (seven minutes past three) "A quarter past three, twenty minutes past three, ten minutes past three." When asked to read "Beef tea" in three-quarter inch letters, she spelt out "J O A D" for the Beef, and "E L I Z A" for the tea. (Her maiden name was Eliza Joad).

When told to read Snellen's test types, she did not know how to set about it, began at the right lower corner and tried to read backwards; when asked if it was because she could not see, she

said, "No, she didn't think it was, she didn't seem to know how."

When set to read 12 Snellen, she read, pointing to the letters, "'The name colony' and 'name' again." Having got to the end of the line, she did not know where to go, and after hovering about at last she pointed to *the* and said, "that's 'the,' and to me they look all 'the's, the's, the's.'" I asked her "Is this word (took) book?" She replied "B double O K, book."

She names the colours of letters correctly, though she mistakes the letters themselves. Names a cap and other familiar objects.

She states correctly various facts about her native town, which town the reporter knows well, the directions of the roads and the towns to which they lead. She is not always correct, and she thinks a long while before answering, and seems very much puzzled.

In describing the way from her own house to Victoria Park, she speaks of going at the back of the barracks. This is so.

March 13. She is elderly and degenerate; thin, wrinkled skin, ectasia of vessels on cheeks, grey hair, barrel-shaped chest, teeth few and worn, no or very little arcus senilis. She has physical signs of emphysema, and her heart sounds are feeble, diffused, and tic-tac, but there is no other evidence of thoracic disease. Pulse 100, fair volume, regular.

Temperature ranges between 99° and 100°. Urine s. g. 1030, neutral, yellow, clear, no albumen. Appetite fair. Bowels open. Sleeps fairly. She had two bedsores.

The upper part of the face is symmetrical as regards motion, but the left upper lip droops to a trifling extent. Tongue in middle line, symmetrical. Ocular movements good in all directions. The left arm has impaired power, which is worst above and diminishes downwards. She does not move the arm from the shoulder in the least. The elbow she moves to a trifling extent in flexion and extension. Pronation and supination are pretty good. Movement of the fingers, though uncertain, is pretty free, most so at the metacarpo-phalangeal joint, the other movements being somewhat stiff. Movement of the thumb considerable, but that member is kept close to the index. Thus the loss of power is very much less comparatively in the hand than the arm.

The left leg, too, suffers much more in comparison than the

arm. She can only just draw it up and push it down in the bed. Cannot raise it from the bed. Movements of the toes, however, are pretty free.

There is no discoverable anæsthesia on the left side. There are occasional tremblings of the left fingers and hand.

No head-ache or vomiting. Her discs are slightly ill-defined, streaked, not swollen; at the upper part of the right are several very minute hæmorrhages. The changes altogether were very slight. The eyes were often examined.

She does not pass motions or water under her, but always calls for the bed-pan.

On trying her very carefully on March 20 for hemiopia, no results were obtained, for it was impossible to make her keep her eye fixed on the central point. The only noticeable thing was that she sometimes kept her eye on the central point when asked if she could see an object on her right, but *invariably* looked at one placed on her left.

After being in the Hospital about a fortnight, her mental conditions improved very much. Indeed one day Dr. Hughlings Jackson took a medical friend to see her and could demonstrate no mental imperfection of consequence.

March 21. She looks as if asleep, but it is found impossible to rouse her. Her pulse is rather rapid and small, her face is unaltered, and she has just taken hold of her left hand with her right. From this she gradually faded out, passing from sleep into coma, and from coma into death. She died the same evening (21st). At 10 p.m. Mr. Smith made a note. "Patient lying on her back insensible, cannot be roused. Conjunctiva insensible. Respiration slow, tracheal rales. Pupils equal and contracted."

Autopsy—March 23. Permission was given to open the head only. On removing the calvaria the dura mater was found to be tightly stretched. When it was slit up, the convolutions were found to be tightly pressed against it, very much flattened, the sulci wholly obliterated, and a few of the larger veins only were visible on the surface. The brain substance looked strikingly anæmic, a dull greyish-white, with scarcely the slightest shade of pink. On lifting the brain from the base of the skull, a portion was found strongly adherent to the right petrous bone or dura mater, and when the encephalon was wholly removed, this proved to be the surface of a tumour which here emerged from the interior.

Examination of the Brain, by Dr. Gowers.

SUMMARY—*A large Gliomatous Tumour in hinder part of Right Temporo-Sphenoidal Lobe: other smaller growths near and in Right Hippocampus Major.*

The largest mass lay beneath the posterior cornu of the right lateral ventricle, in the floor of which it caused a prominence, almost filling up the cornu. The commencement of the descending cornu was one inch further from the posterior extremity of the hemisphere than on the opposite side. In the floor of the descending cornu was a rounded projection, the size of a walnut, in contact with the hippocampus major but not continuous with it. On the under and inner aspect of the hemisphere the tumour had broken through, forming a soft projection 2 in. by 1in., the anterior extremity of which was close to, but did not involve, the termination of the gyrus fornicatus (in the uncinate convolution) in front of the extremity of the parieto-occipital fissure. Thence it extended downwards and backwards. A transverse section through the hemisphere, just in front of the junction of the calcarine and parieto-occipital fissures, showed the tumour to involve the whole area beneath the posterior cornu and calcarine fissure, as far as the grey matter of the surface on both the outer and inner sides; while below, it came through the convolutions as already described. The section of the tumour measured 1½ inch from above down, 2 inches from side to side. Behind this spot it rapidly lessened in size, extending along the inner side, so that in a section across the hemisphere at the extremity of the posterior it was only half an inch in each diameter, and occupied the inner half of the section, beneath the calcarine fissure. It ceased immediately behind this spot.

The section of this tumour was greyish-red, soft, in places somewhat spongy in appearance, very vascular, mottled with

red lines and conspicuous vessels. In many places, and everywhere in the posterior portion, it passed insensibly into the brain tissue, but at some places was bounded by a narrow translucent line. The prominence in the descending cornu was covered on the surface by a thin layer of nervous substance, beneath which was new growth and much extravasated blood, as if hæmorrhage had taken place into the tumour.

On the inner surface of the temporo-sphenoidal lobe a second smaller outgrowth of tumour existed in front of the other, less prominent, involving the middle and inferior occipito-temporal convolutions in an area of about a square inch. It was separated from the other mass by about half an inch of healthy convolution. On section this was found to be part of a second growth, about the size of a walnut, lying beneath and in the lower extremity of the hippocampus major. Although very near the other, the two were not continuous. The lower extremity of the hippocampus was much larger than that of the opposite side, forming a swelling one inch long and three quarters of an inch across, while that of the opposite side was only half an inch across. The surface was normal in appearance. On section it was infiltrated with new growth, moderately firm, and uniformly reddish-grey in aspect. Neither with the naked eye or the microscope could any of the normal structure of the hippocampus be distinguished, except the layer of fibres on the outer surface and the curved layer of fibres which courses across it from its junction with the outer side of the ventrule (and are some of the prolonged fibres of the tapelum). These appeared to the naked eye to divide the otherwise uniform mass into two portions, but under the microscope the new growth was continuous from one part to the other.

Anterior to this second growth was another still smaller nodule in the white substance of the temporo-sphenoidal lobe, about a third of an inch in diameter, pink in tint, and passing gradually into the adjacent cerebral substance.

The structure of the tumours approached most nearly to

that of a glioma. They were composed of small round nuclei, apparently free, and of $\frac{1}{300}$ inch diameter average size; of larger rounded and angular cells, and of nucleated fusiform cells with delicate prolongations. In some parts the fusiform cells formed the chief part of the growth, but in others the nuclei and small round cells were scattered in the meshes of a delicate fibrillar tissue. At the edge at which the smallest growth was extending, on passing from the healthy tissue to the new growth, the minute nuclei of the grey matter of the convolution became more numerous, more densely aggregated, until they constituted a compact mass, in which a few larger cells were scattered. The vessels were everywhere numerous and distended with blood.

The corpus striatum and optic thalamus were unaffected; no abnormity could be found elsewhere in the brain.

LONDON:
HARRISON AND SONS, PRINTERS IN ORDINARY TO HER MAJESTY,
ST. MARTIN'S LANE.