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Publication/Creation

[London] : [publisher not identified], [1864]

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[Reprinted from the "JOURNAL OF MENTAL SCIENCE,"
No. XLIX, April, 1864.]

A CASE OF
PRIMARY CANCEROUS TUMOUR OF THE
BRAIN.

WITH REMARKS.

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THE following case derives interest from its comparative rarity, and from the fact that its history may be detailed with tolerable completeness, both as regards the mental phenomena and the structural lesion. It possesses, also, another attraction, in the interest it may awaken as to the exact nature of the morbid growth, for the pathology of such cases is by no means an undisputed point.

CASE.—Congenital imbecility—Attacks of recurrent mania—Imperfect hemiplegia—Subsequent paraplegia and death—Post-mortem appearances—Tumour of brain (probably cancerous)—Microscopical examination.

Stephen Kemp, æt. 34, a labourer, was admitted into the Norfolk Asylum for the second time in July, 1861, and remained till his death, May 3, 1863. He was from birth of deficient intellect, but pursued the even tenor of his ways pretty harmlessly till about the age of puberty, when he became violent, and liable to wander away. Hitherto he had lived with his mother, and been at times employed in the fields, but he was now sent to the County Asylum, where, however, he was not detained very long. For seventeen years he remained at large, under the care of his mother, and was returned to the Asylum in July, 1861. At that time he appeared to be a stout, hearty countryman, robust and rubicund. His mental capacity was very small, and he was described as "a good-tempered fool, unfit for any steady employment, and quite satisfied with passing his time in shouting at the train, and in running wildly about the courts." For the next year he had recurring attacks of mania, more or less active, being during them noisy and demonstrative, but not violent.

In May, 1862, he first showed signs of bodily ailment, the muscular power of the left leg and arm being much impaired. These symptoms came on very gradually, and he could all the time drag himself about, though unable latterly to dress without assistance, but after a month he improved a good deal.

In September he was weaker, and both his lower limbs were then most affected, the left arm having almost recovered its motile power. During the previous six months he had been occasionally noisy and excited, but much less so than formerly.

In December he was quite paraplegic, had but little sensation in the legs, and complained a great deal of lumbar pain. He was quiet, had to be fed regularly, and required great attention, and seemed indifferent as well as of diminished intelligence. For the last four months of his life he remained a helpless lump, and died very gradually, not particularly wasted, without bed-sores, or any obvious indications of disease, beyond the paraplegia.

Post-mortem.—Body somewhat emaciated; viscera in chest and abdomen healthy; membranes of brain healthy. On slicing the right hemisphere, the white centre had a bright pinkish hue, and seemed softened, but on continuing the section deeper the cerebral substance was denser, and the right ventricle when exposed was found almost obliterated by a hard mass, of gelatiniform appearance, with spots of effused blood, like old apoplectic clots. This mass extended upwards through the roof of the ventricle, causing an induration of some portion of the hemisphere, and was of the size of a small orange. A similar growth, of less size, was seen commencing in the left hemisphere, but external to the ventricle.

Microscopical Examination.—Dr. Eade, of Norwich, well known for his skill and experience in the use of the microscope, kindly examined the tumour, and furnished the following particulars of the microscopical appearances:—"The tumour presented an irregular nodulated appearance. Sections of various portions of it showed a more or less brain-like appearance, and a varying degree of consistency.

"Under the microscope the following elements were found:—

"1. Large irregular cells, mostly with one large eccentric nucleus.

"2. More or less rounded or oval cells, with one nucleus, which was variously centric or eccentric.

"3. Cells in every stage of elongation and fibrillation, from the mere oat-shaped or pyriform cell to the long delicate fibrillæ or fibre cells. These elongated cells were all granular on the surface, and many of them had a long, bulging, central nucleus, some appearing more or less perfectly joined at their extremities in a rudimentary attempt to form fibres. These elements varied greatly in relative amount in the different portions of the tumour; the firmer portions containing the largest proportion of fibres, and the soft and diffuent portions being chiefly composed of the rounded or oval cells."

The writer regrets that no examination was made of the spinal cord, but illness prevented his completing the autopsy.

The results of cerebral pathology are so unsatisfactory, as explanatory of morbid mental phenomena, that one looks with eagerness to cases where an obvious lesion exists, in the hope of gaining some fresh light, but the present instance hardly favours such hopes, for the man's mental condition seemed hardly altered till the loss of physical power extinguished the vivacity of his emotions. There is also a curious want of coincidence between the extent of the disease and the paralysis.

In reviewing this case, one is chiefly struck by the rarity of a large tumour in the brain, still more so of a malignant one; and also by the comparatively slight symptoms produced.

Dr. Sutherland states, in his 'Croonian Lectures,' "It is rare to find tumours in the substance of the brain, in cases of insanity; in 200 cases, tumours were found in only four;" while the French statistics ascribe twenty-two out of 8289 deaths to *cancer* of the brain. The case is, however, singular, as an instance of *primary* cerebral cancer, unassociated with other disease, for in the ordinary way cancerous deposits within the cranium are *secondary* to disease elsewhere. The only local sign, too, supposed to indicate the existence of tumour in the brain, viz., headache, was entirely absent throughout. In treating of this subject, Dr. Walshe remarks: "The presence of a tumour in the brain must, we should expect, be productive of some form of paralysis. The fact is, however, otherwise, for Calmeil found three eighths of those with organic disease of the en-

cephalon free from paralysis. Of the five eighths paralysed he found four eighths hemiplegic. Or, as is much more curious, *paraplegia* may be the form observed. Esquirol relates a case in which the anterior extremity of each hemisphere contained a cancerous mass, while the lower limbs only were paralysed. Durand-Fardel refers to four such cases. Hemiplegia, again, may be followed by paraplegia."

The above quotations would tend to show, that (though the cord was not examined) the symptoms might be referable to the brain alone. Dr. Walshe further states: "It is impossible to calculate the real duration of the disease itself, but the affection rarely proves fatal in less than a year; and unless when the cerebral cancer is associated with similar disease in other parts, the individual is not cut off by the progress of the special cachexia."

Rokitansky is of opinion, "that cancer of the brain very often occurs quite alone in the organism." In the latest English work on pathology, that by Dr. Wilks, the author says: "As a rule, tumours in the brain are found there as primary deposits, and nowhere else in the body, and this has led us, sometimes, to suppose that they are not malignant; but it must be remembered that the brain, being so important an organ, the disease is fatal before it can be elsewhere propagated, as would be the case in many other instances were the organs equally vital in which the growth occurs. We must not, therefore, as I constantly hear it said, call a tumour in the brain necessarily innocent, because all the rest of the body is unaffected."

Regarding the case, then, psychologically, we fail to connect, in any way, the mental and bodily symptoms; while, pathologically considered, we find an uncommon instance of disease, baffling diagnosis, and hardly offering any grounds for better success on a future occasion; and, further, though it is the rule that primary cerebral tumours are fibrous or fibro-plastic in their nature, in the present instance the growth was, judging by its general appearance and microscopical characters, evidently cancerous.

NOTE.—While staying in Florence lately, I found in the Pathological Museum of the large hospital known as *S. Maria Nuova*, a specimen of primary cancer of the brain, so interesting in itself, and so well illustrating the subject, that I append the following history of the case derived from the records of the museum:—

PRIMARY CANCER OF BRAIN.—*History of Case.*—A man, æt. 28, had suffered from epilepsy from infancy. During the last few months of his life he became almost blind, and for this reason came to the hospital for treatment. He got no benefit from the means employed, the epileptic attacks became worse, and he died one day after a fit of unusual severity.

At the *post-mortem* a cancerous tumour was found in the brain. It was of great size; when fresh had the colour of bright peach blossom; was of gelatinous and semi-transparent aspect, and situated in the right cerebral hemisphere. The cancerous mass extended upwards to the under surface of the cortical structure, forwards nearly to the anterior extremity of the hemisphere, backwards as far as and invading the thalamus opticus, and downwards as far as the level of the base of the brain. An horizontal section made immediately below the corpus callosum on the right side, showed the extent of the surface of the tumour, the colour of which was lighter than that of the cerebral substance surrounding it, while it was seen to stretch across the greater part of the breadth of the left ventricle. The middle cerebral lobe was quite pushed back by the morbid growth which rested on and compressed the olfactory nerves. The meningeal veins were gorged, the cerebral convolutions flattened, and the ventricles contained half a pint of limpid serum. *No cancer existed in any other part of the organism*, though a most careful examination was made, assisted by the microscope. A microscopical examination of the tumour showed cancer cells, many of which were incomplete, because reduced to a single nucleus, with a diameter of 18 to 24-1000th of a millimetre, whilst those cells that were entire had a diameter of 24 to 36-1000th of a millimetre.

The pathological Professor remarks "that this case deserves attention from the great size the tumour had attained without inducing grave disturbance of the nervo-cerebral functions, excepting the amaurosis and epilepsy;" but he does not consider "that the epilepsy could be due to the presence of the tumour, as the latter must have been developed very rapidly, while the fits had existed for more than twenty years."