Tremor in meningioma

A 59-year-old female patient who presented for several months of increasing tremor in her left hand, which was caused by a large meningioma located in the right frontal area, pressing on the right frontal lobe and nucleus lenticularis [1].

Secondary Parkinson's disease or subacute Parkinson's may occur after stroke, drug overdose carbon monoxide or manganese toxicity, and rarely owing to a brain tumor. Loss of dopaminergic neurons in the substansia negra pars compacta (SNc), or presence of the proteinaceous inclusions called Lewy bodies are thought to be the cause of Parkinson's disease. Notwithstanding, in the past few decades, many case reports have been published describing Parkinson's symptoms following either stroke, ischemia, toxicity, brain haemorrhage or rarely neoplasm [2].

Large intracranial meningioma masquerading as Parkinson's disease [3].

A case of recently-developed asymmetric parkinsonism without pyramidal signs. However, a meningioma located in the sphenoidal ridge was identified upon imaging studies. This case suggests that additional causes should be considered when approaching patients with parkinsonism and that imaging studies can provide useful information to make accurate diagnoses [4].

Sphenoid wing meningioma presenting as hemi-parkinsonism [5].

A 63-year-old woman presented with an 18-year history of tremor, rigidity and akinesia. There was no response to treatment with either levodopa or pergolide. Later a focal neurological deficit developed, which led to a diagnosis of fronto-parietal meningioma [6]

Various tumours and vascular lesions, including arteriovenous malformations, have been reported as causing kinetic tremors hence the calls for brain scanning in patients with parkinsonism. Evidente et aL described improvement, though not abolition, of tremor after removal of a frontal convexity meningioma [7].

Others, by contrast, have described development of tremor after meningioma surgery. The mechanism in a patient may have been rapid growth or enlargement of the malformation, with disruption of the pathways in the right motor cortex. With tumours, some workers suggest that the basal ganglia can be involved via oedema or vascular insufficiency; others hypothesize dysfunction of the premotor cortex or deafferentation of the primary motor cortexs. Wang et a1. suggest that the sensory cortex is normally under inhibitory influences from the ipsilateral frontal motor cortex; thus

damage from trauma or ischaemia might cause loss of such inhibition. In our patient we think the presentation and outcome suggestive of an ischaemic mechanism [8)]

Meningioma is the most common tumor associated with parkinsonism, and when this tumor is located in the sphenoidal ridge, frontal or parietal area, it is more likely to induce parkinsonism symptoms [9)] [10)].

2 cases of sphenoid ridge meningeomas with symptoms of a parkinsonian sydrome, one of them contralaterally, the second bilaterally. Both did not respond to specific antiparkinson treatment. The extrapyramidal symptoms disappeared in both cases promptly after removal of the tumor. In the first case they reappeared temporary in connection with a local wound-infection. The histological examination of the second case, which died on a pulmonary emboly, showed no alterations of the cerebrum in the sense of an idiopathic or postencephalitic M. Parkinson. The authors try to show possible corrlations by means of the relevant literature (total 75 cases). It is found, that extrapyramidal symptoms do not allow uniequivocal localising or specific conclusions referring the kind of tumor or lesion. Nevertheless the meningeomas preponderate, excluding the basal infiltrating tumors. Referring to the localisation, the frontal located meningeomas preponderate. The bilateral meningeomas all lead to bilateral extrapyramidal symptoms. Next it especially also the frontal meningeomas of convexity mostly cause bilateral extrapyramidal symptoms. In the majority of cases the diately after operation, the rest during weeks to months. Finally the authors discuss the possible pathophysiologic mechanism of origin according to the literature [11)].

PARKINSONISM PRODUCED BY PARASAGITTAL MENINGIOMA [12)].

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