CEREBRAL VASCULAR INSUFFICIENCY AS A CAUSE OF REAPPEARANCE OF NEUROLOGICAL SYMPTOMS LONG AFTER REMOVAL OF A MENINGIOMA

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Recurrence of old manifestations or the appearance of new symptoms after extirpation of intracranial meningiomas unfortunately occur frequently. It is a bitter fact that only 50 to 60 per cent of patients harboring a meningioma—"one of the most benign and surgically accessible intracranial tumours"—could be restored to their previous occupations after operation. 17

Apart from the neurological manifestations that are revealed immediately upon the patient’s recovery from the anesthetic, the operative undertaking may give rise to symptoms that do not become apparent until or even after convalescence. These manifestations generally appear within 1 year of the operation and usually are attributed to the process of healing: gliosis and scar formation. Epilepsy is a prominent symptom. The many patients kept under control by anticonvulsive measures represent the first and major group of those presenting recurrent or new manifestations after extirpation of their meningiomas.

The second group includes patients with actual recurrence of their tumor. The incidence of recurrence after surgical extirpation of intracranial meningiomas varies according to many factors, the most prominent of which probably are the histological variety and the site of the growth. Cushing 8 had to reoperate 93 times on 43 patients in his series of 295 meningiomas for recurrence—a total case incidence of 15 per cent.

Dickel, 10 reviewing 486 cases of meningiomas from Tönis’ collection, found a recurrence rate of 3.6 per cent in hemispherical as compared with 9.9 per cent in basal meningiomas—an over-all incidence of 7.9 per cent. Though clinical manifestations of neoplastic recurrence may appear at any time from a few months to 17 years after operation, 9 in the majority of cases they were evident within the first 3 postoperative years.

The third group of patients, returning with symptoms long after their meningiomas were removed, represent the target for our concern in the present paper. These are patients who were readmitted, often 10 or more years after the healing processes of their operations had become quiescent, and in whom thorough neurological investigations, including angiography, air encephalography and electroencephalography, failed to reveal any evidence of neoplastic recurrence. It is true that the number of patients falling under this group is small, but they represent such a clinical entity as to warrant special consideration.

Following is a brief report of the 5 cases in this last group.

CASE REPORTS

Case 1. A 44-year-old physician had undergone craniotomy for removal of a right frontal parasagittal meningioma in 1933. There was immediate postoperative left complete hemiplegia, but this improved rapidly to residual spastic monoplegia of the left leg. Occasional twitches of muscles in the left lower limb were observed during the first 3 postoperative years, and then disappeared.

Seven years after operation, at the age of 51 years, the patient began to have Jacksonian fits localized to the left leg. At the same time he noted a sensation of deep-seated pain in the same limb,
"as if his bones were being sewn up," accompanied by numbness. A few months later, the Jacksonian fits became more typical with involvement of the whole left side of the body. Three months before readmission, he noticed gradual increase in the paresis of his left leg and weakness of his left arm.

On readmission, 8 years after operation, the patient had two to three fits daily in spite of anticonvulsive medication. Blood pressure was 140/90 mm. Hg. Positive neurological findings were paresis and hyperreflexia of the left leg and left complete hypoesthesia more pronounced in the leg and amounting to anesthesia in the back of the foot. Thorough investigation, including air encephalography, yielded no trace of recurrent tumor. Until contact with the patient was lost. 2 years later, his condition showed no alteration.

Case 2. A 26-year-old fireman was operated upon in 1936 for a left parietal parasagittal meningioma, the principal manifestations of which were a sense of numbness in the right hand together with the occurrence of sensory Jacksonian fits involving that hand. On his discharge, 17 days after operation, his only neurological ailment was hypoesthesia of the right hand. Two years later, he sustained a light trauma to the forehead. Three weeks after the accident, slight weakness of the left arm and leg were noticed. This condition remained stationary for 7 years.

Nine years after operation, the patient began to have difficulty of speech in the form of motor aphasia and to notice an increase in the severity of the paresis in his left extremities. He became ataxic, saliva started to drool out of his mouth and he could no longer control his urinary bladder.

On readmission, 11 years after operation, the patient was 37 years old. Positive findings on examination were: complete right spastic hemiplegia, more pronounced in the arm; sensory ataxia, with a tendency to fall to the left; motor aphasia; and incontinence of urine. Blood pressure was 105/65 mm. Hg. Neurological investigations, including air encephalography, pointed to the absence of any space-occupying lesion. The condition of the patient was unchanged 3 years later.

Case 3. A 30-year-old woman underwent successful removal of a left parietal parasagittal meningioma in 1919. She suffered preoperatively from right hemiplegia and hemianesthesia, with right-sided fits and diminution of visual acuity in both eyes. Both the paresis and sensory disturbances were improved markedly after operation. The epileptic fits, however, persisted during the first 10 postoperative years, and then vanished completely during the following 10 years.

The patient began her new complaints at the age of 50, that is, 20 years after operation. Reappearance of the old right-sided fits was the first symptom, followed 2 years later by headache, further diminution of vision, weakness of urinary control and lastly increased paresis in her left arm and leg: "that was every day worse." Blood pressure was 125/100 mm. Hg. She had right hemiparesis and impairment of deep sensations in both left extremities. Neurological investigations, including electroencephalography, air encephalography and carotid angiography, proved the absence of neoplastic recurrence.

Case 4. A 40-year-old man, complaining mainly of right-sided Jacksonian fits, was operated upon successfully in 1943 for the removal of a left parietal parasagittal meningioma. A mild right hemiparesis, that however did not prevent him from carrying on his previous job, was the only postoperative sequela.

Eight years after operation, at the age of 48 years, he began to complain of headaches, attacks of petit mal, twitches of the muscles in his right arm, and an increase in the rigidity of his right extremities. Blood pressure was 110/85 mm. Hg. Positive findings were spastic hemiparesis of the right side and hypoesthesia of the right arm (this last finding was not present on his discharge from hospital after operation). Neurological investigations, including electroencephalography, air encephalography and carotid angiography, provided no evidence for the presence of an intracranial tumor.

A control investigation carried out 6 years later, i.e., 14 years after operation, including electroencephalography and carotid angiography, gave negative evidence of intracranial neoplasm.

Case 5. A 40-year-old man underwent craniotomy in 1946 for removal of a frontal falx meningioma that grew mainly towards the right cerebral hemisphere. His preoperative neurological manifestations consisted mainly of headaches, diminution of vision in both eyes and a slight (only objective) left hemiparesis. The operation was not followed by any neurological deficit; on the contrary, there was marked diminution of the spasticity and hyperreflexia of the right side.

The patient started to suffer from attacks of angina pectoris 9 years after operation.

Twelve years after operation, at the age of 52 years, the new train of neurological symptoms started. It began with local fits of the left arm, which were soon followed by difficulty in walking and mild motor aphasic disturbances. Blood pressure was 130/80 mm. Hg. The only positive neurological finding was hyperreflexia of the right side of the body. Electroencephalography, air encephalography and carotid angiography gave no evidence of an intracranial tumor. Moreover, the encephalogram (Fig. 1) pointed to a process