CASE REPORTS AND TECHNICAL NOTES

MENINGIOMA AND OLIGODENDROGLIOMA ADJACENT IN THE BRAIN

CASE REPORT

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We wish to chronicle the present record of two tumors in the same patient, a meningoia and an oligodendroglioma, not only on account of their co-existence but because of the striking feature of their juxtaposition in the same hemisphere.

The literature on multiple primary brain tumors has been brought up to date in three recent reports.\(^1,3,4\) Ours is the seventh recorded case of glioma and meningoia in co-existence. In none of the previously reported cases was there a combination of oligodendroglioma and meningoia. Although in Feiring and Davidoff's case\(^4\) both tumors were recognized in life, the second one that appeared was a glioblastoma multiforme and the patient expired 2 months after the second craniotomy. In our case gross total removal of both tumors was accomplished at a single operation with a good prognosis for many years of normal life without serious deficit.

CASE REPORT

S.M.H. #293004. E.D., a 56-year-old right-handed woman, was admitted to Strong Memorial Hospital on Mar. 3, 1949, without known antecedent injury. In 1935 grand mal seizures developed, which occurred once or twice weekly until 1942. These began by her head jerking to the left and the left arm flinging outward. Following spinal anesthesia in 1942 for pelvic plastic repair, she was free of seizures until a similar one occurred in August, 1948 and again on 3 successive days 2 weeks prior to admission.

During the seizure of August, 1948, she suffered a laceration of the left side of her forehead and a fractured left shoulder. One month later when her arm was taken out of the cast she first became aware of weakness and swelling of the entire left upper extremity. She then also began to notice that her left leg was heavy so that she had difficulty in walking, keeping up with other people.

She denied paresthesias or visual symptoms at any time. Headaches, vertigo and vomiting were absent. She felt that of late she had been prone to forget things easily. There was no history of other change in the mental sphere.

Examination. A complete left hemiparesis was present, being least in the face, with slight spasticity of the left thigh muscles and hyperactive tendon reflexes in the left upper extremity. No abnormal reflexes were obtained in either lower extremity. Abdominal reflexes were not elicited. Stereognosis, touch, localization and two-point discrimination were intact, but several errors were made in recognition of number writing on the left hand. The optic fundi and visual fields by gross confrontation were normal. She was unable to subtract 7 from 100 serially correctly, and there were errors in simple calculations. Throughout the interview her attention was apt to wander.

Laboratory Studies. Blood studies, urinalysis, and stool examinations were all within normal limits.

Roentgenograms of the chest were normal. Roentgenograms of the skull (Fig. 1) revealed a fairly extensive area of calcification lying in the right frontoparietal lobes. It measured 4 × 5
Fig. 1. Calcification of oligodendroglioma, lateral and anteroposterior views. Thickening of inner table of calvarium overlying calcification is evident in AP view.

cm. in the lateral view. This extended upwards quite close to the surface of the brain and there was a questionable bony change of the inner table superficially.

Operation. On Mar. 7, 1949, under local novocain anesthesia supplemented with intravenous sodium pentothal and with the patient in the sitting position, a right frontoparieto-temporal flap was turned down. The brain was not under any particular increase in tension. The bone flap was attached to the dura in the region of the posterior frontal lobe and approximately 1 1/2" from the midline and showed evidence of having been invaded by tumor.

The dura was reflected, the portion that was attached to bone and which was also attached to the underlying brain being encircled and left fixed to the subjacent tissue. This tis-

Fig. 2. Gross appearance of meningioma (left) and oligodendroglioma after removal.
sue appeared grossly to be a surface meningioma, measuring $1 \times 1\frac{1}{2}$" in diameter and was readily removed.

Beneath it, by needle puncture, could be felt a calcified lesion with extension to the surface of the brain. This mass, the size of a tennis ball, was totally excised. At the end of the dissection the longitudinal sinus, the falk cerebri and the anterior cerebral artery were fully exposed in the wound and the ventricle had not been opened. After covering the exposed cortex with a sheet of Gelfoam film and excising involved bone, the wound was closed. During the middle of the procedure she had one convulsion.

![Fig. 3 (left). Meningioma showing psammoma bodies and whorl formation. Hematoxylin-eosin, X360.](image)

![Fig. 4 (right). Oligodendroglioma. Perinuclear halos and calcifications are evident. Hematoxylin-eosin, X360.](image)

**Postoperative Course.** On the 1st day her vital signs were well maintained. She was alert, rational and eating. There was feeble movement of the left lower extremity, none in the left upper, and there was a slight left facial weakness. On the morning of the 2nd day, she became semi-comatose, responding only to deep pain; the right pupil was larger than the left. The scalp flap was reopened at the anterior portion of the wound which allowed a gush of bloody CSF, air, and a small clot to escape. After thorough irrigation the wound was closed, leaving a drain in place. Shortly after this the patient awoke.

Her course was uneventful although at first a left hemiplegia was present. On the 5th postoperative day movement returned in her left lower extremity, and on the 9th she was able to move her left hand.

She was discharged on the 12th postoperative day. At that time she was able to walk a few steps alone. The strength and use of the left upper extremity was increasing day by day and
there was no sensory deficit. Fields were normal by gross confrontation and the discs were flat. The decompression was soft and the wound well healed. Dilantin, 0.1 gm. 3/day, was prescribed. She had had no postoperative seizures.

Pathological Report. The gross diagnosis of meningioma for the superficial tumor (Figs. 2 and 3) was confirmed, but the diagnosis on the deeper calcified mass was oligodendroglioma (Fig. 4).

DISCUSSION

The adjacency of the two tumors in this case invites speculation regarding the incitement of growth of one by the other. For two reasons, it would appear that the meningioma was the younger of the tumors. First, it was smaller and second, the presence of the calcification in the oligodendroglioma would suggest its existence for a considerable length of time, presumably as far back as 1935 when seizures first began. The size of the meningioma was hardly compatible with a duration of 14 years. The oligodendroglioma reached a point near the surface of the brain and it would appear likely that it could have acted as a source of irritation to arachnoidal or dural cells overlying it, leading to local proliferation of these elements and final independent tumor formation at the site of the proliferation. The high incidence of head trauma in Cushing’s series of meningiomas suggests a similar irritative etiological role in many of these tumors. The appearance of the second tumor in our patient may possibly also have depended to a certain extent upon a greater inherent susceptibility to neoplastic growth.

It is of some interest in her clinical course that following a pelvic operation which was done under spinal anesthesia she was entirely free of her previous frequent seizures for 6 years.

SUMMARY

A case report is presented of two tumors, a meningioma and an oligodendroglioma, lying in the same hemisphere in juxtaposition in a 56-year-old woman who had had epilepsy for 14 years. Gross total removal of both was accomplished at one operation and the prognosis for prolonged recovery appears good. Because of the probability that the oligodendroglioma was the older of the two tumors, the suggestion is made that it served etiologically as an irritant leading to the development of the meningioma over it.

REFERENCES