MENINGIOMA OF THE OPTIC FORAMEN AS A CAUSE OF SLOWLY PROGRESSIVE BLINDNESS

REPORT OF 3 CASES

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MENINGIOMAS arising from within the orbital cavity make up only a very small segment of intracranial meningiomas. Primary intraorbital meningiomas have been removed surgically and verified pathologically in 17 cases at the Mayo Clinic. Included in this group of intra-orbital meningiomas are those tumors that arise from the meninges within the confines of the optic foramen and that subsequently tend to extend both intra-orbitally and intracranially. These latter form an interesting subgroup in that, aside from their extreme rarity, they grow at an unusually slow rate and demonstrate a remarkable tendency toward bilateralism. The only symptom associated with the foraminal meningiomas is a slowly progressive blindness not accompanied by headache or pain.

The first reported instance of the "synchronous occurrence" of meningeal tumors involving both optic nerves was that described by Schott in 1877 as an incidental finding on postmortem examination in the case of a 55-year-old blind charwoman who died of hepatic cirrhosis. The tumors were the size of a bean and were intimately attached to the arachnoid sheath of each optic nerve.

To our knowledge, the only other case of such bilateral tumors is that reported by Dandy in 1923. The neoplasms were diagnosed clinically, and an intracranial operative procedure was used for the first time in the treatment of such lesions. Dandy particularly stressed the need for distinguishing these tumors from optic neuritis because he felt that unnecessary blindness could be prevented if the true situation were recognized sufficiently early. His case was that of a 13-year-old girl who had had progressive bilateral loss of vision for a period of 7 years. At operation he discovered collar-like growths that encircled the optic nerves and extended 0.75 cm. intracranially and 1.5 cm. intra-orbitally from their attachment at the point where the dura is "reflected" as it passes through the optic foramen. Dandy also reported the case of an 8-year-old boy who had noted bilateral loss of vision but in whom he found only a single neoplasm.

These foraminal meningiomas should not be confused with the small tumors arising along the mesial part of the sphenoid ridge and producing visual symptoms secondarily as a result of their encroachment upon the optic nerve.

Meningiomas arising from within the optic foramen have been removed...
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surgically in 3 cases at the Mayo Clinic. In 2 instances the tumors were bilateral and in the third it was unilateral.

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Case 1.—A 46-year-old white man noted the onset of progressive loss of vision in the left eye 10 years prior to examination. Within 3 years he was completely blind in that eye. Four years later vision in the right eye began failing, slowly and progressively.

Ophthalmologic examination disclosed that vision was reduced to 6/15 and was limited to the nasal field of the right eye. The right optic disc was pale and was elevated about 2 D. The left disc appeared even paler and the disc margins were blurred. Roentgen examination of the skull and the optic foramina gave normal results.

The visual loss was attributed to a chiasmal lesion, one that originally had been prechiasmal on the left. A left transfrontal craniotomy was carried out and 3 distinct tumors were encountered (Fig. 1). The first was situated along the outer third of the sphenoid ridge and measured 2.5 by 2.5 by 2.0 cm. It was removed without difficulty. When the optic chiasm was exposed, a small, cufflike, pinkish-purple mass was seen encircling the left optic nerve at the margin of the optic foramen. The entire tumor was removed. A similar, but slightly larger tumor measuring 1 cm. in diameter was found encircling the right optic nerve. One small lobule of this mass extended down into the sella and another to the right of the optic nerve. Only partial removal was possible because of its firm attachment to the optic nerve at the foramen.

The patient’s impaired vision subsequently progressed gradually to complete blindness.

Case 2.—A 30-year-old housewife first became aware of failing vision in the left eye at the age of 12 years, and over a period of several years gradually became completely blind in that eye. The cause was never determined and the patient felt well otherwise. Eighteen months prior to examination, she noted the onset of progressive diminution of vision in the right eye. There were no other symptoms.

Physical findings were normal with the exception of those relating to the eyes. There was no proptosis and the eyes rotated normally. Vision was reduced to perception of moving objects in the temporal field of the right eye. Ophthalmoscopic examination disclosed marked pallor of the right disc with residual edema of 2 D. and similar extreme pallor of the left disc but with moderate loss of disc substance.