OPHTHALMIC ARTERY ANEURYSM*† CAUSING OPTIC ATROPHY AND ENLARGEMENT OF THE OPTIC FORAMEN

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ANEURYSMS of the ophthalmic artery are very rare (Lange-Cosack, 1966). The subject has recently been reviewed by Tönnis and Walter (1966). Mortada (1961) reported a fusiform aneurysm of the ophthalmic artery as the cause of exophthalmos which may be added to their list. At the Neurosurgical Clinic, Helsinki, this rare lesion was diagnosed only twice among 1,343 patients with 1,601 intracranial aneurysms (af Björkesten, 1967).

Ocular involvement is usual and exophthalmos, optic atrophy, and diplopia are common signs (Walsh, 1957). No previous report has been found of ophthalmic artery aneurysm causing optic atrophy and enlargement of the optic foramen.

Case Report

A young man aged 20 years gradually developed reduced vision and occasionally had headaches after physical strain. He was referred to an ophthalmological department and retrobulbar neuritis was diagnosed, but no systemic disease was found. Treatment with vitamin B and steroids proved useless. The visual acuity decreased and the visual defect increased, and he was taken to the Helsinki University Eye Clinic for further investigation.

Examination.—The visual acuity was counting fingers and there was a central scotoma of the right visual field (Fig. 1). Exophthalmos was not present. The optic disc was pale. The direct light reaction of the pupil was decreased but no other ocular, neurological, or general signs were found. The left eye was normal.

FIG. 1.—Visual field defect in a man aged 20 years with an aneurysm of the ophthalmic artery.

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X ray examination of the orbits showed enlargement of the right optic foramen (Fig. 2). Carotid angiography revealed an aneurysm of the right ophthalmic artery (Fig. 3) in the optic foramen.

FIG. 2.—X rays of the orbits, showing enlargement of the right optic foramen.

(a) antero-posterior projection

(b) lateral projection

FIG. 3.—Carotid angiography, showing an aneurysm of the right ophthalmic artery.

Treatment.—The patient was referred to the Neurosurgical Clinic. The location immediately beneath the optic nerve (Figs 3 and 4) made ligation of the aneurysm impossible, and decompression of the optic nerve, by unroofing the optic foramen, would most likely have caused additional damage to the nerve. Therefore a new technique was tried by applying a *Poppen* clamp for 4 hours to the internal carotid artery in order to achieve thrombosis of the aneurysm. Control angio-

FIG. 4.—Remaining contrast in an aneurysm of the right ophthalmic artery situated in the optic foramen.

graphy with a catheter through the femoral artery into the common carotid artery showed the aneurysm still filling with contrast, though somewhat smaller in size. The carotid artery was therefore clamped again leaving a passage of only 1 mm. for 24 hours. Total thrombosis of the aneurysm was not achieved and permanent ligation of the internal carotid artery had to be performed.

Result.—After 2 days, postoperative transient hemiplegia developed, but the patient recovered quickly and 9 months later was in good health. A visual acuity of counting fingers, optic atrophy, and the defect in the visual field remained.

Comment

Optic atrophy was the dominating ocular sign in an otherwise healthy young man. Retrobulbar neuritis had been diagnosed, but long-term steroid and vitamin B treatment proved ineffective.

Skull *x* rays showed an enlarged optic foramen and carotid angiography showed a saccular aneurysm of the ophthalmic artery. A new surgical technique failed to produce thrombosis of the aneurysm and ligation of the internal carotid artery had to be performed.

This case is a rare one and shows the diagnostic difficulties connected with optic atrophy. *X* ray examination of the optic foramen, even in cases without exophthalmos, is recommended.

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