GLIOMA OF THE OPTIC NERVE*

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GLIOMA of the optic nerve continues to interest both ophthalmologists and neuro-surgeons because of the considerable variation of opinion regarding the choice of treatment and the uncertain prognosis whichever treatment is adopted.

Case Report

A girl aged 8 years was brought to the hospital on January 8, 1960. At about the age of 2 years the parents had noticed an asymmetry in the two eyes, whereafter the left eye continued to become more and more prominent, and it was later discovered that the left eye was blind.

Examination.—The left eye was markedly proptosed (Fig. 1, opposite) and displaced downwards and inwards. The ocular movements were restricted in all directions and elevation was completely absent. The lid movements were normal and the patient could close the eye voluntarily. The conjunctival vessels were engorged. The pupil was dilated and fixed, with no perception of light. The left optic disc was completely white, its surface was flat and the physiological cup was obliterated. The surrounding retina was pale and oedematous but no haemorrhages or exudates could be seen. Blood vessels were markedly tortuous and there was an abnormal loop of a vessel on the temporal half of the disc.

A mass was palpable in the upper temporal quadrant of the left orbit, and a skiagram showed a marked enlargement of the left optic foramen. A lateral view of the skull showed no abnormality of the anterior clinoid process or the sella turcica.

Operation.—After much persuasion, the parents, who had emphatically refused a cranial operation, reluctantly consented to an orbital operation on condition that the eyeball should be preserved.

On January 11, 1960, a Krönlein’s lateral orbitotomy was started. A deep crescentic incision was made along the lateral orbital margin, and a periosteal elevator was inserted between the periorbita and the lateral wall of the orbit. At once a convexity appeared at the site through which the neoplasm could be palpated, and when the periorbita was incised antero-posteriorly, the neoplasm was clearly visible and could be gently dissected from its surroundings. The anterior tapering end which was easily reached was discovered to be folded in the fashion shown in Fig. 2 (opposite). The nerve was cut just posterior to the eyeball and the huge fusiform mass became more mobile.

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Fig. 1.—Proptosis of left eye. Fig. 2.—Macroscopic appearance of neoplasm.

Exploration with the little finger showed a marked diminution of the orbital fatty content and indicated the possibility of excising the neoplasm close to the optic foramen without cutting the lateral bony wall of the orbit. The idea of Krönlein's operation was therefore abandoned, and the posterior end of the tumour was reached with a pair of strong blunt scissors and cut away as far back as possible.

Pathology.—Macroscopically the neoplasm was fusiform with intact sheaths. The mass measured 5 cm. in length and 3 cm. in diameter at its maximum girth. Glioma of the optic nerve was diagnosed after a microscopic examination.

Follow-up.—The post-operative recovery was normal and uneventful. At the end of 12 days the proptosis was much reduced, but ptosis appeared and all the ocular movements were completely absent. A post-operative course of deep x ray therapy was given, but this unfortunately led to several complications; the temporal skin developed burns and later underwent cicatrization, and the left cornea became ulcerated, and would not heal (Fig. 3).

Fig. 3.—Post-operative appearance of patient.

Ultimately this ulceration led to perforation of the globe and phthisis bulbi, but when last seen the child was alive and otherwise well.

Discussion

The patient's youth at the time of onset of the glioma and the extremely slow rate of growth of the tumour are noteworthy. The condition was first noticed when the child was 2 years old, and it is possible that the neoplastic process began much earlier. The tumour had been developing for no less
than 6 years before the parents consented to surgery. The optic foramen was remarkably large, but no bony distortion or erosion was present. No sellar deformity or undercutting of the anterior clinical process was seen.

Several radiological deformities, and the conclusions therefrom, are described in the literature, an enlarged optic foramen being universally accepted as a sure sign of intracranial extension, but Dyke and Davidoff (1942) thought that an enlargement of this kind favoured the idea that such neoplasms were congenital. Martin and Cushing (1923) suggested that the sellar deformity indicated intracranial extension, but this too Dyke and Davidoff (1942) regarded as a sign of congenital origin, since it was seen in children with glioma of the optic nerve and chiasma but not in adults.

REFERENCES


NOTES

NATIONAL COUNCIL TO COMBAT BLINDNESS

The National Council to Combat Blindness, Inc.—the Fight for Sight—41 West 57th Street, New York City, founded in 1946, is a voluntary health agency primarily engaged in supporting eye research. The work is carried out through grants and fellowships, which have to date encouraged and supported more than 400 separate scientific investigations.

During 1961 76 grants and fellowships, totalling $257,512, were awarded to support eye research for the 1961–62 period. Apart from grants given in the U.S.A., foreign awards included support for work at institutions in Indore, Jerusalem, Berne, Montreal, Kampala, Tokushima, Chonnam, Okayama-shi, and Oxford.

Applications for the 1962 awards are now being received by the office of the National Council to Combat Blindness. March 1, 1962, is the closing date for completed applications, which will be reviewed by the Scientific Advisory Committee in June.