

Astrocytoma of the optic nerve

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Though two-thirds of the primary optic nerve tumours that have been reported are astrocytomata (Davis, 1940), these tumours are of rare occurrence. In the course of 15 years, Collins and Marshall (1900) found only two cases of astrocytoma of the optic nerve among 388,000 patients. The astrocytoma present in the optic nerve belongs to the least malignant type of glioma, Grade I, which is usually found in young children (Hudson, 1912; Reese, 1963). It usually manifests itself as a very slowly progressive unilateral proptosis with no pain or ocular change except poor vision occasioned by optic atrophy (Reese, 1963). It advances by direct extension along the intraneural portion of the nerve and does not penetrate the sheath, so that a diffuse and uniform hyperplastic swelling is produced (Duke-Elder, 1940). Recurrences are very rare in intraorbital cases after successful excision.

As the case reported here has some very unusual features, we thought it worthwhile to put these on record.

Case report

A **45-year-old male Hindu** reported to the eye out-patient department of Irwin Hospital with the complaint of gradual protrusion of the left eyeball for 6 months with pain for the last 2 months. He had been hit on the forehead just above the left eye by a bamboo pole 7 months previously.

Examination

RIGHT EYE: Normal in all respects. Visual acuity 6/6.

LEFT EYE: Eyeball displaced forwards, downwards, and outwards (Fig. 1). No mass felt in the orbit. No perception of light. Ocular movements restricted in all directions. Both lids swollen. Conjunctiva chemosed and congested. Pupil dilated and fixed. Optic disc markedly atrophic. Exophthalmometric reading (Hertel) 26 mm. (normal right eye 15 mm.).



FIG. 1 *Displacement of left eyeball forwards, downwards, and outwards*

Systemic examination, including complete neurological examination, revealed nothing abnormal. Thyroid and blood studies and serological tests for syphilis negative. Frontal and maxillary sinuses normal on transillumination. Skiagrams of skull, paranasal sinuses, orbits, and optic foramina normal.

Surgery

As all the signs pointed to a rapidly-growing intraorbital space-occupying lesion, the orbit was opened up by Kronlein's procedure. The tumour was found to extend anteriorly right up to the attachment of the optic nerve to the globe but posteriorly it did not involve the canalicular portion of the optic nerve. It was, therefore, decided to sacrifice the eye together with the tumour, and the globe was excised with the optic nerve up to the apex of the orbit (Fig. 2).

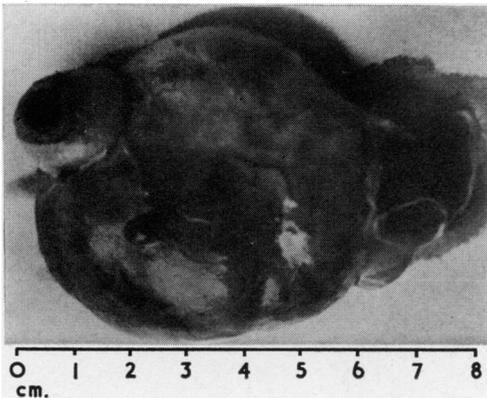


FIG. 2 *Excised specimen, showing eyeball and tumour*

Result

Postoperative recovery was uneventful. Histopathological examination identified the tumour mass as an astrocytoma Grade II (Fig. 3).

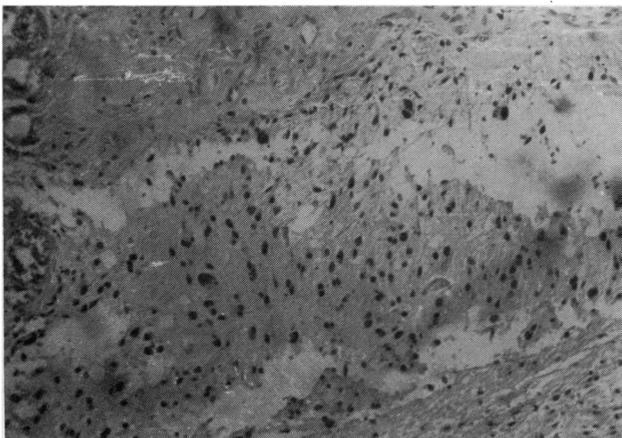


FIG. 3 *Section of tumour, showing astrocytoma Grade II. Haematoxylin and eosin. $\times 100$*

Comment

This type of tumour is very uncommon at the age recorded here. The most common site of origin is the region of the optic foramen from which extension occurs in both directions, so that enlargement of the optic foramen is important in diagnosis. In this case the tumour arose from the intraorbital portion of the optic nerve.

The growth and development of the tumour is usually slow with no pain in the eye, but in this case the tumour grew fairly rapidly, and pain was probably due to stretching of the nerve sheath. This rapid growth probably caused other unusual features, such as swelling of the lids and chemosis and congestion of the conjunctiva. The blow sustained by the patient may have been responsible for this unusual development.

Summary

A case of astrocytoma (Grade II) arising from the intraorbital portion of the optic nerve at the age of 45 is recorded. The unusually rapid progress of the tumour may have been due to a blow on the forehead just above the affected eye.

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