ORBITAL TUMOURS*

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Fashion, fate, fortuity and fortune—such are the means that have enabled me to present to you some of the information afforded by a series of over 360 cases of a variety of disorders associated with ocular protrusion, unilateral or bilateral.

It is not that I proffer such a number of cases of neoplastic disease, but this is the composite material from which the orbital tumours are to be selected.

In the first place it was not neoplastic disease that claimed my attention, but a case of progressive malignant endocrine exophthalmos. This patient showed rapid deterioration following upon thyroidectomy; the eyes were severely proptosed, excessively chemotic, were exciting considerable pain, exhibiting rapid visual deterioration and subject to a considerable increase in intra-ocular tension. Decompression being deemed wise, a right-sided Naffziger type of operation was undertaken. The ophthalmologist who had referred the patient attended the operation. Being somewhat overawed by the severity of the operative intervention he secretly disented from the responsibility of having the second side operated upon, whereupon he delayed any such venture. Meanwhile the untreated eye perforated and enucleation was necessitated.

A second case of malignant endocrine exophthalmos appeared next—a drastically ill patient with gross thyrotoxic manifestations (Fig. 1). Her eyes were the most severely involved I have seen up to the present day. Emergency operative measures were applied late one night. Regretfully the patient did not live more than 48 hours, dying from myocardial failure. Disappointed and discontented, one was confronted with that feeling of being cheated. One was led to believe that the disorder was fraught with disaster, and this was no exceptional view.

It was about this very time that quite another problem was presented in a female child of 4½ years of age, suffering from a rapidly developing proptosis, accompanied by severe visual deterioration. Ocular movement was restricted largely as a result of mechanical obstruction arising out of the gross displacement. The ocular fundus was involved in such excessive papilloedema, some 12–14 dioptres, that it was uncertain whether or not actual new growth was presenting in the disc. The diagnosis was not in doubt—an optic-nerve glioma. This was confirmed by radiographic examination revealing a dilated optic foramen. Analysis of the cerebrospinal fluid showed a rise of total protein (0.70 gm. per cent), thereby indicating encroachment of the tumour on the subarachnoid space.

A matter of particular concern arose out of enquiry as to the feasibility of excision of an optic-nerve tumour without disposal of the eye. Most of us when faced with this form of dilemma resort to scrutiny of the available literature and make careful enquiry of colleagues concerning their own experiences in the matter. It was not my lot to meet with anyone who had had any direct association with an undertaking of this sort, but one came across a statement in Parson's *Diseases of the Eye* that the optic nerve may be excised and the globe of the eye retained. Of course, just what advantage was to be forthcoming from such an exploit could not be assumed confidently. Yet one felt that the normal development of the orbit and perhaps the face would be assured should retention of the eye prove possible. (Incidentally it is said that the orbit attains its full adult proportions by the age of 3 years.)

As the child was very young, the operation was looked upon as somewhat hazardous, for one felt that excision of the optic nerve from its origin at the chiasma to its termination at the back of the eyeball, perhaps with loss of the eye, would run a not inconsiderable risk of infection. Accordingly it was decided that the whole undertaking would be carried out in two stages. At the first operation an intracranial section of the optic nerve was made at its junction with the chiasma and the free end of the nerve was dislocated into the orbital cavity. The second stage took place 10 days later, the whole nerve with its contained tumour then being freed from the back of the eye and extirpated. No untoward reaction occurred. This patient is alive and well this day (Figs. 2a and 2b).

Confidence was further re-inforced by a comparable case appearing. We all know how unusual and intriguing cases tend to appear in two's and three's. Again, a young girl, but this time an adolescent. The clinical state was almost identical and the operative technique applied was much the same. This patient too is alive and well, married and with children of her own.

These 2 cases of glioma of the optic nerve opened the series of orbital tumours. They lead us into considering first of all the tumours of the optic nerve and its sheath.

**TUMOURS OF THE OPTIC NERVE AND ITS SHEATH**

**Benign**

1. Glioma
   a. Astrocytoma
   b. Oligodendrogioma
2. Meningioma
3. Fibroma

**Malignant**

1. Neurocytoma
2. Retinoblastoma
3. Sarcoma

Tumours of the optic nerve certainly are uncommon, so that no one observer can pre-