ORBITAL LEIOMYOMA AND ITS ORIGIN*

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LEIOMYOMA of the orbit is one of the rarest tumours of the eye (Duke-Elder, 1952). The first case was reported by Lodato (1896), and the second case 24 years later by de Quervain (1920). In the subsequent 42 years, only four cases have been reported (Siegrist, 1923; Shoda, 1925; Lewis, 1938; Wright, 1938) making a total of six. This seventh case is being reported after another gap of 24 years, no other references having been found in the literature.

Leiomyoma is a benign tumour that usually arises from smooth muscle, vascular tissue, subcutaneous tissue, the stomach, the large and small intestines, and the uterus—the last being the commonest site. The orbital site is perhaps so rare because, except for the capsulo-palpebral muscle of Hesser, there is very little smooth muscle in the orbit. The capsulo-palpebral muscle of Hesser forms the smooth muscle of the eye anteriorly and is missing temporally (Wolff, 1958). It is therefore possible for an orbital leiomyoma to arise anteriorly from the capsulo-palpebral muscle of Hesser, from the blood vessels, or from some other slight vestiges of smooth muscle.

Case Report

A married woman aged 18 years was admitted to the Gandhi Eye Hospital, Aligarh, on January 10, 1962, with the complaint of a gradual protrusion of the left eye for 2 years. An x ray at the Sitapur Eye Hospital had not revealed any abnormality. Until 15 days before admission, when she felt acute pain with profuse watering of the left eye, the proptosis had been painless.

Examination.—There was marked forward proptosis, chemosis of the lower conjunctiva, corneal haze, and eversion of the lower lid (Fig. 1, overleaf). Movement of the eyeball was absent downwards and outwards, but slight movement was possible inwards and upwards.

The upper lid could be brought over the eyeball only with difficulty and there was a tendency for it to slip back with dislocation of the globe. The orbital tissues surrounding the globe felt very hard above, below, and temporally. They appeared hard and nodular in the upper temporal quadrant (displaced lacrimal gland). The eyeball could be palpated up to the equator and a little beyond it. Pulsation was absent. X ray of the left orbit revealed nothing but a little increased haze. The visual acuity was 6/6 in the right eye and 6/36 in the left.

Operation.—On January 17, 1962, a Burcke-Krönlein left lateral orbitomy was performed (Fig. 2, overleaf). A pink encapsulated oval tumour 6×4 cm. was found filling the muscle cone and orbit. The tumour was situated between the lateral rectus and optic nerve, so that the nerve was very much stretched forwards; it was too large to be removed intact. The tumour was therefore first enucleated and the capsule with its pedicle, which arose from the apex of the orbit, was then excised.

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FIG. 1.—Marked proptosis of left eye.

FIG. 2.—Condition one month after Burcke-Krönlein orbitotomy.

Result.—The visual acuity in the left eye improved to 6/18.

Pathology.—Histopathological examination with haematoxylin and eosin, Masson's trichrome, and Wilder's reticulin stain revealed that the tumour consisted of myofibrils arranged in palisades (Figs 3, 4, 5, and 6). The cell nuclei were oval and flat, with rounded ends (Fig. 4) and were not dark staining. Wilder's reticulin stain showed connective tissue surrounding the myofibrils (Figs 5 and 6, opposite).

FIG. 3.—Section of tumour mass, showing muscle spindles with nuclei arranged in palisades. Haematoxylin and eosin. $\times 160$.

FIG. 4.—Section under higher magnification, stained with Masson's trichrome, showing individual myofibrils with typical flat oval nuclei with rounded ends. $\times 160$.

Discussion

This case had a very unusual feature which was not present in those formerly reported. The tumour arose from the apex of the orbit, where there is normally no smooth muscle, and this at first led us to think that it was a neurilemmoma, but the pathological examination showed conclusively that it was a leiomyoma. We therefore think that it arose from the smooth muscle

FIG. 5.—Section stained with Wilder's reticulin, showing arrangement of reticulin fibres in palisades surrounding myofibrils. $\times 160$.

FIG. 6.—Higher magnification of same section as Fig. 5. $\times 616$.

of the blood vessels at the apex of the orbit and not from the regular smooth muscle situated anteriorly.

Reese (1951) doubted the nature of the six tumours reported in the literature, and their exact origin is uncertain, so that one or more of them may also have arisen from the smooth muscle of the apical blood vessels and not from the regular smooth muscle of anterior part of the orbit.

Summary

This orbital leiomyoma is distinguished from those hitherto reported in the literature by its origin from the smooth muscle of the blood vessels and not from the smooth muscle situated in the anterior part of the orbit.

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