

LIMBAL EPITHELIOMA WITH INTRA-OCULAR INVASION*

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INVASION of the inside of the eye by squamous cell carcinoma originating in the limbal epithelium is sufficiently rare to warrant brief notice. Duke-Elder (1938) gives seven references to recorded cases, all in the literature of a generation or more ago. There appears to be no recent report of this condition and Reese (1951) refers briefly to its extreme rarity. Parsons (1904) states that invasion of the globe is along the perivascular and perineural lymph spaces at the corneo-scleral junction—never elsewhere.

Case Report

A hardy old man of nearly 82 years of age had lived all his life in the far west of New South Wales. Until shortly before the onset of acute inflammation in his left eye, he had been able to shoot down 100 to 120 kangaroos in a single day.

Examination.—On the left inner bulbar conjunctiva there was an acutely inflamed mass, slightly irregular in shape and raised 1–1.5 mm.

Treatment.—Antibiotics and steroid drops produced considerable improvement in the conjunctival inflammation, but no reduction in the mass itself. This was comma-shaped with its tail extending upwards under the lid and was about 8 mm. in length and 5 mm. in width at its widest part. On September 5, 1960, the mass was excised under local anaesthesia and was found to be a friable fleshy tumour loosely fixed to the conjunctiva but ingrown into the sclera. Sections (Fig. 1, opposite) showed a squamous cell carcinoma arising from the limbal epithelium. As soon as the operation scar had healed sufficiently, the patient was referred to Dr. Harold Ham for *beta*-ray applications. This produced a moderate reaction but by September 23, 1960 (18 days after operation), the limbal tumour appeared to be recurring and cellular deposits were seen in the angle of the anterior chamber. There was a possibility that these were merely inflammatory cells but by the end of October, 1960, there was frank tumour extension into the anterior chamber. The eye was enucleated on November 7, 1960.

Ocular Findings.—The eye was fixed in 10 per cent. formalin, opened in the 10 o'clock meridian, and embedded in celloidin. Macroscopically there was well-marked perilimbal scarring on the nasal side. There was a large pyramidal, flocculent mass in the anterior chamber with its broad base filling the inferior angle and its apex disappearing backwards through the pupil. A further small white nodule was present in the iris at 10 o'clock.

Sections (Fig. 2, opposite) showed that the nasal limbal epithelium had healed but with irregular, possibly malignant, downward proliferation. In the underlying corneo-scleral tissues, infiltrating carcinoma was evident in the perivascular spaces of the corneo-scleral vascular plexus and in Schlemm's canal, which was full of neoplastic cells. The subadjacent ciliary body and iris were extensively replaced by non-keratinizing squamous cell carcinoma, which had filled the angle, infiltrated the trabecular meshwork, and grown along the posterior surface of Descemet's membrane. On the opposite side

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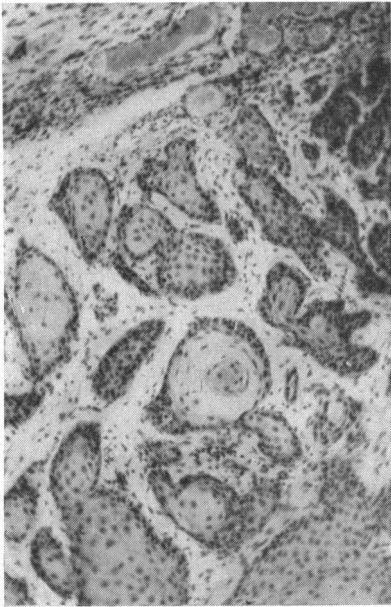


FIG. 1.—Photomicrograph of primary squamous cell carcinoma arising from limbal epithelium. Haematoxylin and eosin. $\times 50$.

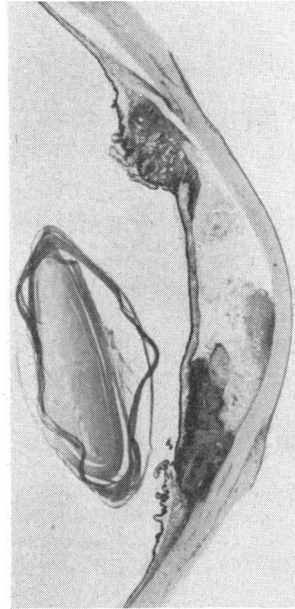


FIG. 2.—Section of globe in 10 o'clock meridian. The upper carcinomatous mass was seen macroscopically as an iris nodule at 10 o'clock, while the mass in the lower iris together with cellular discard in the anterior chamber formed a pyramid rising to the level of the pupil. Haematoxylin and eosin. $\times 6$.

of the anterior chamber (lower temporal area), the neoplasm had extensively replaced the basal iris and had infiltrated the trabecular meshwork and angle tissues. From its basal roots in the iris stroma, the neoplasm had grown forward into the anterior chamber to form a large epidermoid growth complete with fibro-vascular stroma. Extensive necrosis and intense neutrophilic infiltration were evident throughout the neoplasm and a copious discharge of living and dead neoplastic and inflammatory cells had partially filled the anterior chamber and had escaped into the posterior chamber. The remaining ocular tissues showed nothing remarkable.

Summary

The clinical and pathological findings are recorded of a case of limbal squamous cell carcinoma. Approximately 8 weeks after removal of the limbal neoplasm an intra-ocular extension became clinically manifest in the anterior chamber and the iris.

My thanks are due to Dr. John Hercus of Sydney, New South Wales, for permission to publish his case and for supplying clinical notes and sections from the limbal neoplasm.

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