Malignant Melanoma of the Cornea

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The purpose of this short paper is to demonstrate a patient with a condition which is out of the ordinary.

A 30-year-old farmer was sent to this hospital. On examination the visual acuity of the right eye was found to be 12/10, and no abnormalities were found in the media and fundus. The visual acuity of the left eye was found to be 2/10, and a round, prominent swelling was visible on the temporal side of the cornea. The swelling is brownish in colour, and the tumour is free, or practically free, from the conjunctiva. Marked vascularisation of the conjunctiva can be seen. The vascularisation of the tumour itself cannot be seen so easily; this has not the typical characteristics of a papilloma, in which each papilla is vascularised separately. The cornea was slightly infiltrated at the edges of the tumour. It was decided to perform a lamellar corneal graft. The conjunctiva was incised after the vessels had been coagulated. The lamellar corneal graft was performed with an 8 mm trephine. The donor cornea was attached with a continuous suture. The tumour appears macroscopically to have been completely removed. The final result is very satisfactory. There is no trace of tumour tissue or in-growing blood vessels. The following figure shows the tumour after removal, the complete tumour and a fairly large portion of the conjunctiva can be seen. I should like to point out that the tumour was bridled in order to prevent damage as far as possible.

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The complete preparation was fixed in formalin, embedded in paraffin, and cut in series. One notices first in this preparation that the stroma is intact and that Bowman's membrane has not been penetrated. Furthermore, the whole tumour is situated on the cornea and the tumour tissue stops where the conjunctiva begins. The edge of the epithelium is normal in appearance. In sections nearer to the edge of the preparation it is still more obvious that the tumour has not grown into the stroma and has left Bowman's membrane intact. With this magnification, however, this cannot be seen. Greater magnification of the tumour tissue shows, in the first place, that this is markedly vascularised. The spindle-shaped character of the tumour cells, which are found in nests, can also be seen. These cells are markedly polymorphous and stain strongly with haematoxylin. It can be plainly seen that we are dealing with cells which contain pigment. We observe that the tumour has attacked the epithelium, and that the basal layer of the epithelium, in particular, is affected.

We may now conclude that we are concerned with a melano-sarcoma of the cornea, a condition which was last described by Stallard in the Brit. J. of this year. Ten cases have been described by

v. Hippel. Davies and Bailey in 1954 described a patient with a tumour of the cornea between the epithelium and Bowman's membrane, consisting of whirls and clumps of spindle-shaped cells which were slightly pigmented.

We may conclude that we are concerned with a melanoma from the shape of the tumour cells. That we are concerned with a tumour of the cornea is indicated, in our opinion, by the fact that, both microscopically and macroscopically, the conjunctiva is practically unaffected. The theory put forward by several pathologists, that the basal cells of the corneal epithelium are potential melanoblasts, is supported by our preparations.

As these cases are quite uncommon, we decided to demonstrate this patient.

Discussion

Flieringa observes that the use of a trephine of larger diameter (e.g. 10 or 11 mm) might have been advantageous. The tumour would have been more widely excised in the healthy tissue. In addition

the scar would have been situated more laterally to the pupil. It is in any case striking that the postoperative visual acuity is 0.9.