Episcleral traumatic conjunctival inclusion cyst

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SUMMARY A huge episcleral traumatic conjunctival inclusion cyst enveloping almost the whole eye, which appeared in the left phthisical eye of a young woman who sustained a perforating ocular injury a few years before enucleation, is described.

Intrascleral traumatic implantation cysts are rare. Usually they are formed by the conjunctival epithelium. This rarity is explained by the inadequacy of the scleral tissue to act as a culture medium for the epithelial cells (Duke-Elder and MacFaul, 1972). But the episclera should not impede the conjunctival epithelium from proliferating and forming cysts; indeed, superficial conjunctival inclusion cysts appear frequently in the episcleral plane after penetrating injuries. Epithelial implantation cysts which penetrate in the episcleral plane deep to the optic nerve at the posterior pole and surround almost the whole eye have not been so far reported. Our case exemplifies such a possibility.

Case report

A 33-year-old female sustained in 1970 a perforating injury of the left cornea in a road accident. She underwent suturing of the cornea, and the visual acuity decreased to light perception only. A few months later, a limbal staphyloma appeared inferiorly and increased steadily. Later the patient started to complain of severe pain in this eye, which lost its light perception. She was admitted for enucleation.

On admission of the patient the right eye appeared normal. The left eye presented ciliary injection, a vertical linear scar in the cornea with Descemet folds, and a total iris coloboma inferiorly covered by a pupillary membrane. Inferiorly a large limbal staphyloma extended along the inferior limbus and pushed the cornea upwards. On 26 January 1976 enucleation of the left eye was performed. With the opening of the conjunctiva at the limbus a huge scleral cyst was discovered inferiorly

at the site of the staphyloma. The eye was removed together with the cyst.

MACROSCOPY

The left eye was phthisical ($22 \times 20 \times 20$ mm) and soft on palpation. A huge cyst was present inferiorly between the sclera and the thickened episclera. The opening of the cyst was 14×15 mm in size (Fig. 1). Vertical section showed that a cystic space was present not only inferiorly but also superiorly and temporally, and that it extended to the optic nerve (Fig. 2). The retina was totally detached, funnel-shaped, and adherent anteriorly to a thick cyclitic membrane. The cornea was leucomatous and heavily vascularised.

MICROSCOPY

The outer surface of the sclera (Fig. 3) and the inner face of a thickened episclera were lined with a stratified multilayered epithelium showing a

Fig. 1 Opening of the episcleral cyst at the inferior limbus

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Fig. 2 Cystic space present superiorly and inferiorly between the sclera and the episclera and extending to the posterior pole. The retina is totally detached

Fig. 3 Choroid and sclera covered by a moderately keratinised epithelium. $\times 120$

moderate keratinisation (Fig. 4) and extending to the posterior cul-de-sac (Fig. 5). Some amorphous substance was present in the lumen, apparently debris from the epithelial lining. There were foci of

non-specific chronic inflammation in the sclera and episclera.

Discussion

At operation this cyst was considered to be an intrascleral cyst. Histological examination showed that it was located at the level of the episclera. The episclera, a loose connective tissue, does not impede the proliferation of the conjunctival epithelium and can give way before such a large extension to the conjunctival invagination. We termed the cyst episcleral and not intrascleral in view of the histological characteristics. The location of the cyst was remarkable. Traumatic implantation cysts are usually found anteriorly in the exposed parts of the

Fig. 4 Both walls of the cyst covered by a moderately keratinised epithelium. $\times 95$

Fig. 5 Posterior cul-de-sac covered by keratinised epithelium. $\times 390$

sclera, near the limbus or a little posterior to it, under the bulbar conjunctiva (Ischreyt, 1907). They increase slowly in size, with a thin outer wall; the cyst becomes soft and even appears bluish (Eisenstein, 1907), as was the case with our patient. The limbus is a natural barrier for its extension anteriorly and often the cyst tends to encircle it (Gruening, 1900-02). In our case it extended along the whole inferior limbus. However, the most remarkable feature of this cyst was the fact that it surrounded at least three-quarters of the outer

surface of the eyeball and also part of the distal portion of the optic nerve. This was the feature that prompted us to publish the case.

References

- Duke-Elder, S., and MacFaul, P. A. (1972). *System of Ophthalmology*, Vol. 14, pt 1, p. 412. Kimpton: London.
- Eisenstein, J. (1907). *Zeitschrift für Augenheilkunde*, 18, 92.
- Gruening, E. (1900-02). *Transactions of the American Ophthalmological Society*, 9, 339.
- Ischreyt, G. (1907). *Klinische Monatsblätter für Augenheilkunde*, 45, 59.