References

1. Lippa EA, Carlson LE, Ehinger B, *et al.* Dose response and duration of action of dorzolamide, a topical carbonic anhydrase inhibitor. Arch Ophthalmol 1992; 110:495–9.
2. Gunning FP, Greve EL, Bron AM, *et al.* Two topical carbonic anhydrase inhibitors sezolamide and dorzolamide in gelrite vehicle: a multiple-dose efficacy study. Graefes Arch Clin Exp Ophthalmol 1993;231:384–8.
3. Strahlman E, Tipping R, Vogel R. A double-masked, randomised 1-year study comparing dorzolamide (Trusopt), timolol, and betaxolol. Arch Ophthalmol 1995;113:1009–16.
4. Wilkerson M, Marshall C, Lippa EA, *et al.* Four week safety and efficacy study of dorzolamide, a novel, active topical carbonic anhydrase inhibitor. Arch Ophthalmol 1993;111:1343–50.

Sir,

Adenoma of the Non-pigmented Epithelium of the Ciliary Body

The case of an acquired adenoma of the non-pigmented epithelium of the ciliary body occurring in a middle-aged woman is reported. Tumours of the non-pigmented ciliary body epithelium are extremely rare and may be congenital or acquired.[1–3] The congenital tumours arise from primitive medullary epithelium whereas the acquired tumours arise from fully differentiated ciliary epithelium. This tumour can be clinically indistinguishable from malignant melanoma of the ciliary body and can cause local pressure effects. However, our case presented simulating an iris mass and therefore non-pigmented ciliary body adenoma should be considered in the differential diagnosis of an iris lesion.

Case Report

A 51-year-old woman presented with deteriorating vision in her left eye. She had no previous ocular history. Visual acuity in the left eye was 6/12 and in the right eye was 6/6. An elevated, non-pigmented rounded mass was noted in the supra-temporal aspect of the left iris. The overlying anterior chamber was shallowed with peripheral anterior synechiae evident on gonioscopy. Intraocular pressures were normal in both eyes. The lens underlying the mass had a local cataract and was subluxed. Fundal examination through a dilated pupil revealed no evidence of retinal or ciliary body abnormality. As the lesion transilluminated and an A-mode ultrasound scan confirmed the clinical suspicion that it was cystic, the mass was not considered to be a malignant melanoma initially. However, the patient was kept under review to document any change.

The vision gradually deteriorated to 6/24 3 years after presentation, due to development of posterior subcapsular cataract. The lesion enlarged over this period with progression to corneal touch and pupil margin distortion. Therefore excisional biopsy of the lesion was combined with cataract extraction.

Phacoemulsification of the cataract and intraocular lens implantation was performed. Broad iridectomy to the ciliary body removed the tumour in total. The patient made a good recovery, obtaining corrected vision of 6/6 at 6 months post-operatively.

Pathology

The pathology specimen consisted of a small nodule of tissue measuring approximately 4 mm in diameter (Fig. 1). Histological sections showed an adenoma of the non-pigmented epithelium of the ciliary body with intra- and extracellular secretions and focal areas of inflammation. The tumour was composed of regular eosinophilic cells with small prominent nuclei (Fig. 2). Histochemical staining was positive with periodic acid–Schiff (PAS), mucicarmine and alcian blue stains. The positive staining with alcian blue was dissipated by hyaluronidase, confirming the presence of an acid mucopolysaccharide.

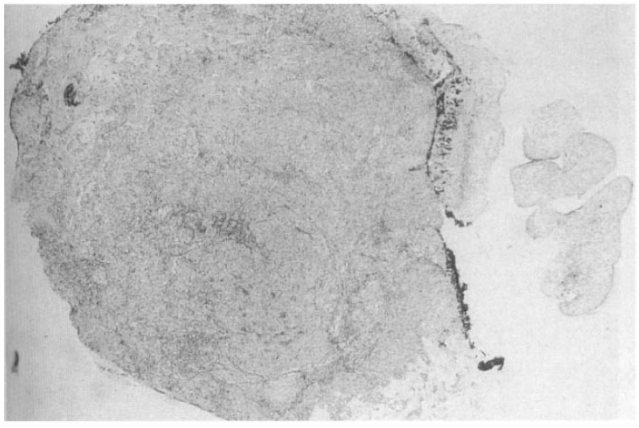

Fig. 1. *Entire regular eosinophilic tumour bordered on the right of the illustration by iris with iris pigment superiorly and ciliary pigmented epithelium inferiorly. (Haematoxylin–eosin, ×25).*

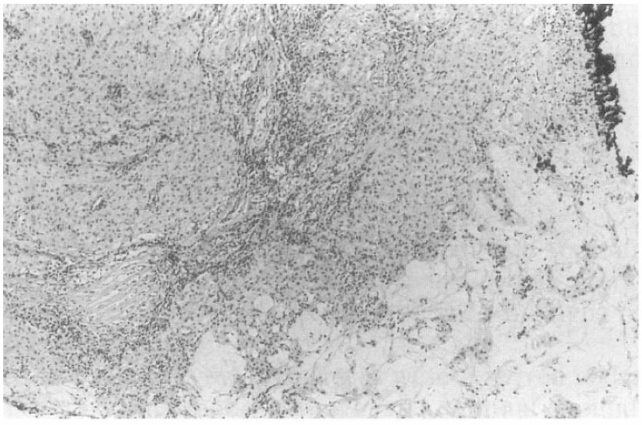

Fig. 2. *Magnification from the lower right of Fig. 1. Ciliary non-pigmented adenoma tumour cells are seen with a central area of inflammatory cell infiltrate and inferior area of accumulating secretions. There is a pigmented ciliary epithelium border in the upper right of the illustration. (Haematoxylin–eosin, ×100).*

Discussion

Adenoma of the non-pigmented epithelium of the ciliary body is a rare condition whereas the pseudoadenomatous changes of the ciliary body such as reactive hyperplasia and 'Fuchs' adenoma' are common histologically but rarely present clinically.[4,5]

The clinical findings in this case conform to the pattern described by Takagi *et al.*,[6] with compression of the ciliary body mass causing the iris to protrude into the anterior chamber. It differs in presentation from the case described by Shields *et al.*,[7] where the tumour was seen clinically to arise from the ciliary body. In these cases and ours the tumour occurred in a middle-aged woman, confirming the tendency to occur in females. Our histochemical examination using PAS, alcian blue and mucicarmine demonstrates the same findings as previous workers[7] of an acid mucopolysaccharide sensitive to hyaluronidase and probably representing vitreous.

The tumour increased in size, probably due to accumulating secretions, and abutted the lens causing a local cataract and subluxation. Other local effects of this benign tumour are reported by McGowan *et al.*[8] where vitreous haemorrhage occurred along with uncontrolled secondary glaucoma necessitating enucleation.

Shields *et al.*[7] also report their experience that a number of ciliary body and iris tumours which clinically resembled malignant melanoma, particularly in young or middle-aged women, proved to be simulating conditions rather than melanomas. Our case highlights adenoma of the non-pigmented epithelium of the ciliary body as a differential diagnosis of an apparent iris mass and should also be considered when evaluating a suspected pseudomelanoma of the ciliary body or iris.

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References

1. Zimmerman LE. The remarkable polymorphism of tumours of the ciliary epithelium. Trans Aust Coll Ophthalmol 1970;2:114–25.
2. Zimmerman LE. Verhoeff's 'terato-neuroma'; a critical reappraisal in the light of new observations and current concepts of embryonic tumours. Trans Am Ophthalmol Soc 1971;69:210–36.
3. Shields JA. Diagnosis and management of intraocular tumours. St Louis: CV Mosby, 1983:322–59.
4. Zaidman GW, Johnson BL, Salamon SM, Mondino BJ. Fuchs' adenoma affecting the peripheral iris. Arch Ophthalmol 1983;101:771–3.
5. Rohrbach JM, Steuhl KP, Thiel HJ. Cysts and Fuchs' endothelial adenomas of the pars plicata corporis ciliaris: degeneration products as an expression of various ciliary body functions? Klin Monatsbl Augenheilk 1991;198:195–200.
6. Takagi T, Tsuda N, Watanabe F, Takaku I. An epithelioma of the ciliary body. Ophthalmologica 1987;195:13–20.
7. Shields JA, Augsburger JJ, Wallar PH, Shah HG. Adenoma of the nonpigmented epithelium of the ciliary body. Ophthalmology 1983;90:1528–30.
8. McGowan HD, Simpson ER, Hunter WS, Pavlin CJ, Tanzer H. Adenoma of the nonpigmented epithelium of the ciliary body. Can J Ophthalmol 1991;26:328–33.