The variability between subjects is likely to have been caused by the differing ability of individuals to adjust to the lenses, and the central processing required to search, see and identify a head in the sea. This also explains why the visual acuity required to see a human head at 300 m in the sea was 6/7, rather than the theoretical figure of 6/17. We therefore accept the hypothesis.

It is therefore recommended that a beach lifeguard should have visual acuity of 6/7 or better. As this will exclude some individuals, consideration could be given to allowing beach lifeguards to wear glasses. It seems logical to base the requirement for uncorrected eyesight on what the beach lifeguard must see when they have removed their glasses and are moving towards a casualty. By then the beach lifeguard will have detected the casualty. As the visual acuity required to maintain sight of a casualty is less than that required to locate/detect them in the first place, it is reasonable to require a beach lifeguard to have uncorrected vision, in their worst eye, that is at least equivalent to that required to see a head from 200–300 m distance, or an arm waving from 300 m. The average for these activities is 6/14.

In terms of the Snellen chart, we recommend that the corrected vision for beach lifeguards be 6/9 best eye, 6/18 worst eye, and the unaided acuity be no worse than 6/18 in either eye.

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Malignant transformation of iris melanocytoma to iris ring melanoma

Melanocytoma, a benign uveal melanocytic tumour, represents only 3% of iris naevi, and seldom undergoes malignant transformation.[1 2] We report an unusual case of an iris melanocytoma suggested by two separate biopsies, which evolved into ring melanoma of the iris.

Case report

A 33-year-old Caucasian female, with a family history of open-angle glaucoma, presented with 'darkening of the left eye' since the age of 16 years, left hemicranial headache for 18 months and reduced vision in the left eye for 2 days. Visual acuity was 6/9 with a left relative afferent pupillary defect. There was left heterochromia iridis, with patchy iris hyperpigmentation (fig 1A), that was flat except for one inferonasal area. Intraocular pressure (IOP) was 50 mm Hg. Gonioscopy revealed the drainage angle to be hyperpigmented. The

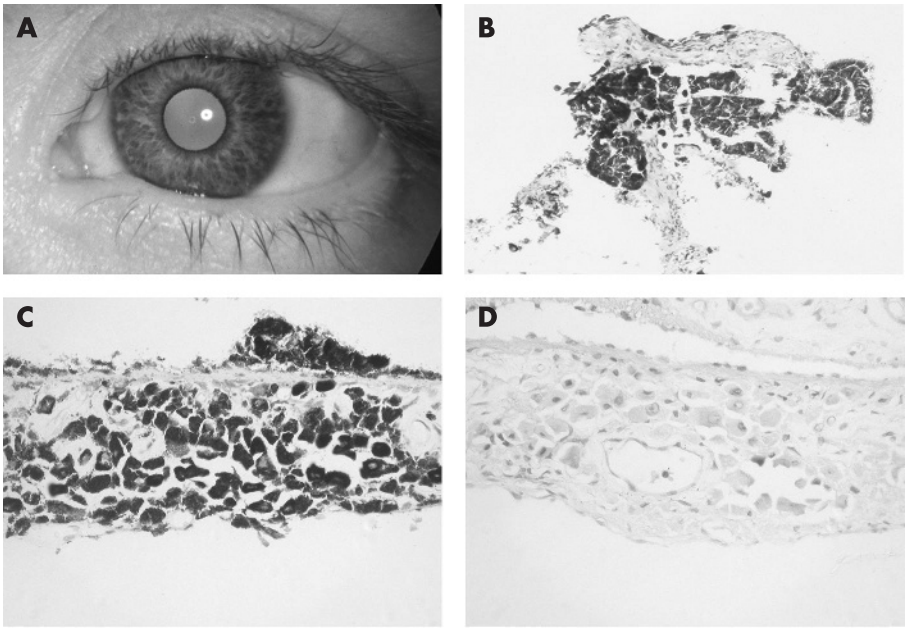

Figure 1 A: Anterior segment photograph of the left eye on presentation in 1995, showing dark, mainly flat patches of pigmentation. B: Initial biopsy specimen of inferonasal iris, showing a small iris fragment with large melanocytic cells on both sides of the iris (haematoxylin-eosin ×200). C: Iridectomy specimen showing well-orientated iris with large, densely pigmented, well-separated cells involving the stroma (haematoxylin-eosin ×400). D: Bleached section (×400) showing the morphology of the epithelioid cells in greater detail. Although most cells contain small nuclei, occasional cells show larger nuclei within which single nucleoli are present.

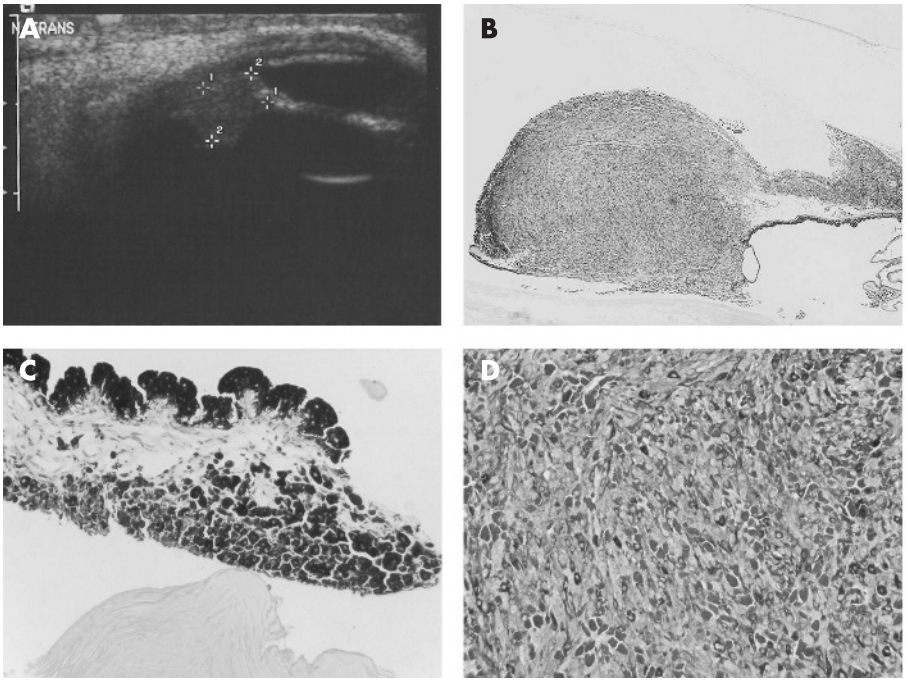

Figure 2 A: Anterior segment B mode ultrasound showing one of the two iris masses. This nasal tumour was elevated by 4.4 mm. B: The tumour is seen infiltrating the iris and iridocorneal angle of the enucleated globe under low power (haematoxylin-eosin ×20). C: The iris has melanocytic cells on the posterior surface as well as a thickened sheet-like proliferation on the anterior surface (haematoxylin-eosin ×200). D: High-power photomicrograph of the centre of the tumour, showing mixed epithelioid and spindle cell types (bleach ×200).

optic disc had a cup:disc ratio of 0.9 with a disc haemorrhage. Visual field tests (Humphrey 24-2) confirmed an obliterated field. All findings in the right eye were normal.

Biopsy of the inferonasal iris tumour (fig 1B) showed large, densely pigmented epithelioid cells diffusely infiltrating the iris tissue. The cells were separated from each other, without a spindle-cell appearance. Bleached sections showed large cells, a few of which contained small nucleoli. The findings were reported as iris naevus, which is consistent with melanocytoma. A trabeculectomy with mitomicin C was subsequently required to normalise IOP. The surgical iridectomy from this yielded another specimen, with better orientation of the iris tissue. Large polygonal heavily pigmented cells (fig 1C) were noted within the iris tissue, with occasional anteriorly located fine vessels that were indicative of rubeosis iridis. There was no evidence of proliferation in Ki67 immunostained sections. Bleached sections (fig 1D) showed large epithelioid cells with relatively small nuclei and generally indistinct nucleoli. The histological diagnosis was again thought to be most in keeping with melanocytoma. Post-operatively, the IOP was in the normal range and the patient was lost to follow-up.

Five years later, the patient presented with a left IOP of 50 mm Hg again and advanced pigmentary changes. There were two new raised pigmented areas in the inferotemporal iris, with pigment seeding into the bleb and subconjunctival infiltration of pigment. Anterior segment ultrasound (fig 2A) confirmed two raised areas on the iris and ciliary body, one elevated 4.4 mm (nasally) and the other 6.2 mm (temporally). Gonioscopy revealed a pigmented mass in the iris periphery and iridocorneal angle. Metastatic evaluation was negative and the patient underwent enucleation.

Histology of the enucleated globe (fig 2B-D) showed an iris ring melanoma of mixed cell type with both epithelioid and spindle cells. Over the iris, there was a plaque-like extension of cells, which were both larger and more pigmented than those infiltrating the ciliary body and forming the bulk of the tumour. These larger cells were similar to those seen in the initial iris biopsies, probably representing residual melanocytoma. The trabeculectomy bleb contained pigmented macrophages and extrascleral extension was absent. Review of the second iris biopsy does show occasional larger nuclei within the epithelioid cells, although with copious cytoplasm, and it should be noted that the subsequent melanoma is composed mainly of spindle cells, with a different appearance.

Comment

We present a case of documented transition from a lesion showing the features of iris melanocytoma to ring melanoma. Two separate biopsies were thought to contain only benign melanocytoma cells and the enucleated eye contained residual melanocytoma-like cells, so it is conceivable that de-differentiation to melanoma had occurred over time, or that the initial samples had missed a deeper small ciliary-body lesion. Malignant transition from melanocytoma of the optic disc,[3 4] choroid,[5 6] ciliary body[7] and meninges[8] has been described, but malignant transformation of iris melanocytoma was not found in one series at 5 years.[1] However, Cialdini *et al*.[2] reported a discrete, rather than ring configuration, iris tumour that contained malignant and melanocytoma cells.

Ring melanoma of the iris or ciliary body (involving at least 6 clock hours) is a rare and often misdiagnosed cause of unilateral pigmentary glaucoma.[9 10] Acquired heterochromia was noticed by our patient 17 years before presentation and, subsequently, ring melanoma was diagnosed after another 7 years. Although the possibility of sampling error exists in the original biopsy, this time course argues against a misdiagnosis on two separate histological specimens. We therefore believe that malignant transition from iris melanocytoma to ring melanoma can occur and that careful long-term observation of iris melanocytomas is warranted.

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CORRECTIONS

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H Tamura, A Tsujikawa, A Otani, *et al*. Polypoidal choroidal vasculopathy appearing as classic choroidal neovascularisation on fluorescein angiography (*Br J Ophthalmol* 2007;**91**:1152–9). The authors' corrections were not made to this paper. They are as follows: figure 2 legend corresponds to the image in figure 3; figure 3 legend corresponds to the image in figure 4; and figure 4 legend corresponds to the image in figure 2.

In addition, there is a typographical error in the correspondence address: ''Shogoin-kawahra-cho'' should be ''Shogoin-kawahara-cho''.

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Bosley T M. Age and cataract surgery complications (*Br J Ophthalmol* 2007;**91**:1254). This letter was assigned incorrect authorship. The correct authors are Aris Konstantopoulos, Krishnappa Madhusudhana, Ghasem Yadegarfar, Andrew Lotery.

NOTICES

Second Sight

Second Sight would like to hear from experienced Indian eye surgeons returning to India after training/working in the UK. Second Sight is a London based charity dedicated to the elimination of cataract blindness in India.
Further details: Dr Lucy Mathen, lucymathen@yahoo.com.

Inaugural Asia Cornea Society Scientific Meeting

13–14 March 2008, Shangri La's Rasa Sentosa Resort, Singapore.
Further details: Fax +65 6227 7291; Email acs@snec.co.sg.

Singapore National Eye Centre – 18th Anniversary International Meeting

14–17 March 2008, Suntec City Convention Centre, Singapore.
Further details: Tel: +65 6322 8374; Fax +65 6227 7290; Email meet@snec.com.sg.

2008 International Agency for the Prevention of Blindness (IAPB) 8th General Assembly

28 July–2 August 2008, Centro de Convenções Rebouças, Sao Paulo, Brazil
Further details: Email: agency@lvpei.org.

Neuro-Ophthalmology and Strabismus – 2008 European Professors in Ophthalmology (EUPO) Residents' Course

5–6 September 2008, Geneva, Switzerland.
This course organised by Professor Avinoam B Safran will provide an overview and an update on recent advances in neuro-ophthalmology and strabismus.
Further details: Website: http://eupo.eu.