

Correspondence

Ocular melanoma

SIR, Since the publication of the article by Bomanji *et al.*¹ on radioimmunoscintigraphy in the diagnosis of ocular melanoma we have completed an assessment of this diagnostic technique on 11 patients in whom choroidal melanoma was felt to be either certain (group 1) or a possibility (group 2).

Using the same labelling kit, Technemab (Sorin Biomedica), technetium-99m labelled F(ab')₂ fragments of MoAb 225 28S were injected. Images were recorded at 1 hour, 3 hours, and 6 hours after injection. Results were found to be most indicative at 6 hours, when the area of the affected eye was compared with the control eye. We found that the wearing of lead rimmed spectacles by the patient helped to delineate the area of the globe and allows accurate quantitative analysis.

Our results are presented in Tables 1 and 2. In three out of four patients with a clear diagnosis of melanoma there was a good correlation between other tests and histological proof. The fourth patient had a certain clinical diagnosis but refused enucleation. He has subsequently undergone iodine plaque irradiation. Radioimmunoscintigraphy in this case is therefore a presumed false negative. At a size of approximately 7 mm×7 mm this lesion was much the smallest in group 1. Table 2 shows that no clear pattern emerges in the four patients with naevi and possible malignant change. An equivocal result was obtained in patient 5 with a staphyloma; this was therefore a false positive.

Our current impression is that this test in its present form is not useful in the evaluation of patients with possible melanoma. We note, however, the identification of another

monoclonal antibody with a higher degree of specificity to melanoma, cytoplasmic antigen, which may warrant further investigation.²

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SIR, We thank Mr Tullo and colleagues for their interest. Since our first report we have carried out radioimmunoscintigraphy (RIS) on 54 patients with melanomas or simulating mass lesions in the ocular fundus. In our series, as in that described by Tullo *et al.*, it has not been possible to confirm histologically whether the diagnosis is melanoma or not in all cases. However, where enucleation was not considered justified there were strong clinical indicators that the diagnosis was correct, including ophthalmoscopic, fundus fluorescein angiographic, and B-scan ultrasound features. In these circumstances we have found the sensitivity of the test to be 93%, the specificity 95%, and the accuracy 96%. During this time we have refined the RIS technique and have gained experience in interpreting the computer-enhanced colour images obtained.¹

The correspondents do not indicate their criteria of positive, negative, or equivocal images and do not state whether these were based on a grey scale or on the colour images which we have found to have a higher positivity rate. On the basis of the relatively small number of presumed melanomas they report Tullo *et al.* have found a sensitivity which at 75% is slightly less than our value. They have found RIS positivity or equivocal results in two of four individuals with naevi and possible malignant change. In our initial communication we reported antibody uptake in an apparent benign naevus and stated that 'the immunoscintigraphy response of choroidal naevi remains to be investigated'.² We have since evaluated four ocular naevi which are known not to have changed for a minimum of five years. RIS was positive in two and negative in two. We do not know whether those naevi which show uptake are destined to undergo malignant change, and it is possible that the high molecular weight melanoma-associated antigen is expressed by benign naevi. Long-term follow up may resolve this issue,³ but in the meantime we would reiterate the clear statement in our preliminary communication that RIS should only be used to complement established diagnostic tests² and not in isolation. More recently we have stated our opinion that RIS cannot distinguish between various types of melanocytic lesion and that its use should be confined to differentiating between melanocytic and non-melanocytic tumours.¹

In the course of time we hope to report significant numbers of RIS results with histological proof of the diagnosis of melanoma. However, because current management of melanoma makes enucleation hard to justify for small tumours, it will be difficult to provide cast iron proof of the diagnosis in other than large lesions. Furthermore, because we do not enucleate eyes with presumed benign

Table 1 Patients with malignant melanoma (group 1)

Patient	Sex, age	FA	USG	RIS	HISTOL
1	M, 45	+	+	+	+
2	M, 40	±	+	+	+
3	M, 49	ND	+	+	+
4	M, 40	+	+	-	

FA=fluorescein angiography. USG=ultrasonography. RIS=radioimmunoscintigraphy. MM=malignant melanoma. ND=not done.

Table 2 Patients with various diagnoses (group 2)

Patient	Sex, age	Diagnosis	FA	USG	RIS
1	M, 65	Naevus	Early ? malignant change	-	+
2	M, 63			ND	±
3	F, 59			MM	-
4	F, 58			ND	-
5	M, 61	Staphyloma	ND	Staphyloma	±
6	F, 86	? Large MM	ND	±	-
7	M, 79	? Large MM	±	±	+

tumours, we will not find it easy to confirm histologically what we at present regard as true negative results. We agree with Tullo *et al.* that investigation of other antibodies is warranted. In vitro we found monoclonal antibody (MoAb) 763.24T to have greater affinity for melanoma cells than MoAb 225.28S.⁵

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Circulatory collapse and ROP

SIR, Ng *et al.* (*BJO* 1989; **73**: 111-4) report an association between circulatory collapse, the development of severe retinopathy of prematurity (ROP) and periventricular leucomalacia (PVL). They suggest that postnatal hypoxic/ischaemic brain and retinal injury may form a common pathway in the pathophysiology of severe ROP and PVL in predisposed infants, though no data on the cause, severity, frequency, or duration of the circulatory collapse are given.

This theory is indirectly supported by metabolic data published from our unit. The frequency and duration of episodes of arterial pH falling below 7.2 due to metabolic, respiratory, or mixed acidosis, and also the duration of episodes of both hypoxia (PaO₂ <5.5 kPa) and hyperoxia (paO₂ >12 kPa) were shown to be significant variables in the development of ROP.¹

Tissue hypoxia resulting from vascular insufficiency is a potent cause of metabolic acidosis, with consequent loss of cerebral and choroidal autoregulation and further loss of perfusion pressure, so it can be suggested that descriptions of circulatory collapse and descriptions of acidosis may refer to the same underlying processes. Quantified cotside measurements of cerebral blood flow using near infrared spectroscopy,² and continuous blood pressure monitoring are two techniques which may help to elucidate this important association further.

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References

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SIR, We thank Messrs Acheson and Schulenburg for their interest in our article and also for their support for the idea that severe ROP and PVL may both be the consequence of cerebral circulatory hypoperfusion. We fully recognise the inadequacy of our data regarding the details of the circulatory collapse, but this is probably inevitable, as during this clinical catastrophe monitoring must necessarily take a back seat.

We are also looking at the metabolic risk factors for ROP. While on univariate analysis we obtained similar results,¹ using linear regression analyses for both the incidence and severity of ROP the variables PaO₂, pH, and PCO₂ failed to remain independently significant (in preparation). The relationship of metabolic acidosis to further loss of perfusion pressure remains speculative, and we are unable to comment further on this issue. The idea of prospectively continuously monitoring the cerebral blood flow and blood pressure to investigate this subject further is attractive but the logistics are probably overwhelming, as in our study this association developed in only 6 of the 299 infants at risk.

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Book review

Clinical Ophthalmology: A Text and Colour Atlas.
By JAMES L KENNERLEY BANKES. Pp. 130. £14.95.
Churchill Livingstone: Edinburgh. 1987.

This is a very helpful book for the beginner in ophthalmology and hence should be of quite wide interest. Medical students are probably its principal target, but opticians might also find the book of interest as well as some general practitioners. It is probably of somewhat limited value to anyone specialising in ophthalmology, but even for this group a read through during the first few days of the first residency would certainly not come amiss. Definitely a good book to have in the library.

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