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Editorials

Imaging posterior uveal melanomas

Our ability to diagnose accurately posterior uveal melanomas appears to have changed dramatically over the past 30 years. In 1964, Ferry¹ reviewed 7877 enucleation specimens and found 529 eyes that had been removed because a melanoma was suspected clinically. Subsequent histological examination revealed that 100 of these eyes (19%) harboured a lesion other than a melanoma. In contrast, the Collaborative Ocular Melanoma Study Group in 1990 reported only two histologically proved incorrect diagnoses in a study of 413 patients treated for a presumed posterior uveal melanoma: a misdiagnosis rate of only 0.48%.² Increased awareness of lesions which can stimulate uveal melanomas, the widespread use of the binocular indirect ophthalmoscope, and a greater reliance on ancillary investigations have all contributed to this impressive improvement.

For the experienced observer, the diagnosis of an intra-ocular tumour is often relatively straightforward. However, difficulties in diagnosis do occur, particularly in cases where opacities in the media preclude direct visualisation of the lesion, or where the tumour is relatively small and minimally elevated. In these cases the use of ancillary investigations such as ultrasonography, radioactive phosphorus (³²P uptake test), fluorescein angiography or fine needle aspiration biopsy can prove crucial in reaching a diagnosis. Unfortunately, no ancillary investigation is foolproof and inevitably either false positive or false negative results occur.

The introduction of monoclonal antibody techniques presents the clinician with the possibility of accurately identifying tumours using tumour specific radiolabelled monoclonal antibodies. The monoclonal antibody 225.28S, which was originally raised against cutaneous melanoma tissue, also appears to have demonstrable affinity for choroidal melanoma antigens.³ Intravenous injection of radioactively labelled fragments of this monoclonal antibody would, in theory, bind to choroidal melanoma tissue and become concentrated in the tumour. Immunoscintigraphy could then be employed to demonstrate this locus, thus confirming the

nature of the tumour. While this technique is both ingenious and appealing the results, to date, are somewhat disappointing. In this issue, Schaling *et al* report the results of this technique on a series of 56 patients, 43 of whom had a presumed choroidal melanoma. Planar scintigraphy showed a detection rate of only 49%. The additional use of single photon emission computed tomography (SPET) imaging failed to improve the results significantly. These results contrast with the previously published study by Schielder *et al*⁴ who found that while only 41% of choroidal tumours could be detected by planar imaging, the yield could be improved to 78% by the use of SPET imaging. Not surprisingly, both studies found that tumour size was a definitive factor in determining the success of this technique. Schaling *et al* found that the tumours detected were significantly larger than those which could not be successfully imaged using this technique. However, large tumours do not normally present the clinician with any diagnostic problems; unless, of course, media opacities preclude direct visualisation. The smaller lesions, which often may provide the greatest clinical difficulties, cannot be resolved using this technique. It would appear that, at present, radioimmunoscintigraphy has little to offer over conventional ancillary investigations in confirming the diagnosis of a posterior uveal melanoma.

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