Letters to the Editor

Early diabetic retinopathy

Dear Sir,

In their paper entitled "Quantifying early diabetic retinopathy", Howard-Williams et al. [1] have proposed a new method of quantifying diabetic retinopathy on standardised retinal colour photographs. Since 1943, when Ballantyne and Loewenstein [2] showed that microaneurysms were the early, specific lesions of diabetic retinopathy, approximately 30 classifications of diabetic retinopathy viewed by regular ophthalmoscopy have been described. Retinal fluorescein angiography, used for the first time by Novotny and Alvis in 1961 [3], provides considerable progress. This allows the diagnosis of incipient abnormalities that are undetected by regular ophthalmoscopy; it enables study of the vascular walls and the perturbations of the dynamic circulation. Recently, Burger et al. [4] have shown that fluorescein angiography in diabetic children allowed the detection of retinopathy on average 4 years earlier than with ophthalmoscopy. In our experience and in other published studies, fluorescein angiography doubles the frequency of diagnosis of diabetic retinopathy [5, 6]. Therefore, I disagree with Howard-Williams et al. [1], who state that a precise means of assessing colour photographs may be as effective as fluorescein angiography. In fact, it is paradoxical that in many cases fluorescein angiography (a sensitive method) is only performed for patients who already have evidence of retinal lesions by normal ophthalmoscopy (a less sensitive method), so that the initial abnormalities of diabetic retinopathy may not be diagnosed for several years.

Moreover, we have shown that microaneurysms could be preceded by a functional abnormality characterised by the appearance of fluorescein leaks secondary to an increased permeability of the pigmented epithelium and of the retinal capillaries [5–7]. Since then, several studies in children and adults have reported the existence of fluorescein leakages in early diabetic retinopathy [6]. Other authors have quantified the early breakdown of the blood-retinal barrier by fluorophotometry of the vitreous [6, 8]. The two methods have established the relationship between observed capillary leakage, as a result of vascular incompetence and the degree of metabolic control [5–8]. Fluorescein leaks may regress after several weeks of improved metabolic control [6, 8]. In diabetic children in poor metabolic control, fluorescein leakages may be detected before puberty and before the fifth year after the onset of the disease [6, 7].

In conclusion, considering that fluorescein angiography allows the detection of retinal changes a few years before ophthalmoscopy and provides important information to the physician and to the patient regarding improvement in the degree of metabolic control, it seems advisable to carry out fluorescein angiograms before the settlement of morphologic irreversible lesions detectable by ophthal-

moscopy. Moreover, in our experience as well as in that of Burger et al. [4], fluorescein angiography seems to be practically without risk in children and adolescents; it can therefore be used routinely.

Yours sincerely,
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