thickness determination should be set, if allowed by the instrument.

The outer boundary used by Spectral SLO/OCT can be hypothesized according to the reported data about RT in normal eyes, as measured with different spectral OCT models. Mean RT, as measured with spectral domain SLO/OCT, was $281 \pm 88\,\mu$m before exclusion of the artefacts and $277.1 \pm 66\,\mu$m after their removal. In a recent report by Han *et al*,[2] Spectralis OCT (Heidelberg Engineering, Heidelberg, Germany) generated a similar RT measurement ($279 \pm 26\,\mu$m). According to previously described thickness measures of specific outer retinal layers, Spectralis OCT likely sets the outer retinal boundary for RT measurement at the junction of Bruch's membrane and the choriocapillaris; the same outer boundary could be used by Spectral SLO/OCT.

References

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2 Han IC, Jaffe GJ. Comparison of spectral spectra and time-domain optical coherence tomography for retinal thickness measurements in healthy and diseased. *Am J Ophthalmol* 2009; 4 February 2009 [E-pub ahead of print].

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Sir,

Intravitreal bevacizumab for macular oedema secondary to branch retinal vein occlusion: more data required

We read with interest the study by Gündüz and Bakri.[1] The authors conclude that intravitreal bevacizumab (IVB) is effective in treating macular oedema associated with branch retinal vein occlusion. However, we suggest that the results ought to be interpreted cautiously for the reasons given below.

The patients involved in this study were heterogeneous with respect to factors that may influence the outcome of treatment with IVB. For example, one-third of the patients were found to have macular ischaemia, and this may account for some of the variability. The impact of the wide range of patients' ages and of relevant coexisting pathologies, such as diabetes mellitus and glaucoma, was not quantified. Some of the eyes underwent initial laser or intravitreal/posterior subtenon triamcinolone, which may have influenced the efficacy of IVB. Finally, as the authors do not state quantitative criteria for IVB retreatment, it is difficult for readers to determine a protocol that might produce similar results for their own patients.

We are encouraged by the outcomes reported, but suggest that detailed analysis of the subjects being treated and comparison with matched controls should be undertaken before IVB can be recommended for this indication. Future studies could also distinguish between the potential for IVB as a primary treatment, perhaps before structural or ischaemic changes at the macula have become established, and its role as a second- or third-line therapy.

Reference

1 Gündüz K, Bakri SJ. Intravitreal bevacizumab for macular oedema secondary to branch retinal vein occlusion. *Eye* 2008; **22**(9): 1168–1171.

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Sir,

Reply to Dr Hu *et al*

We thank Dr Hu *et al*[1] for their valuable comments. In dealing with patients with BRVO, we are inevitably faced with different coexisting pathologies, including diabetes mellitus, systemic hypertension, and ocular problems such as glaucoma. A detailed subgroup analysis of the efficacy of IVB in each group of systemic and ocular pathologies would require a substantial number of patients to enable this study to have predictive power. As for prior ocular treatments used in IVB-treated eyes, IVB was used in eyes with recurrent ME after laser photocoagulation and intravitreal triamcinolone acetonide and not as an adjunct to these treatments. A sufficient time period had elapsed after these treatments to conclude that prior treatment had not been successful. Finally, the decision to retreat was made based on the presence of macular oedema on OCT. Eyes that had persistent macular oedema were retreated, whereas those with no macular oedema skipped retreatment.

A retrospective study is valuable in that a positive outcome encourages pursuing randomized, controlled clinical trials, whereas, randomized trials are generally not pursued following negative outcomes in a retrospective study. We are encouraged that these preliminary, retrospective data on the prn usage of the anti-VEGF agent bevacizumab support the basis for conducting the prospective, randomized, controlled trial of ranibizumab, another anti-VEGF agent, for macular oedema for branch retinal vein occlusion. It is our sincere hope that this large,

prospective study validates our findings and provides another tool to fight against this devastating and common cause of blindness.

Reference

1 Hu K, Horgan SE, Sivaraj RR, Avgikos K. Intravitreal bevacizumab for macular oedema secondary to branch retinal vein occlusion. *Eye* 2010; **24**: 194.

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Sir,

Interpretation of the outer retina with high-resolution optical coherence tomography

Oishi *et al* are to be congratulated for their paper seeking to evaluate the role of optical coherence tomography (OCT) for profiling macular involvement in patients with retinitis pigmentosa.[1] The interpretation of the outer retina with high-resolution OCT (HROCT) can, however, be problematic. Recently published data by Srinivasan *et al*[2] suggests that Oishi *et al*[1] have erroneously used the external limiting membrane (ELM) as their reference line, rather than the photoreceptor inner/outer segment (IS/OS) junction as claimed. We present three images, that we believe aid the accurate interpretation of the outer retinal signal, and thus facilitate the accurate identification of these structures in future studies.

Figure 1a shows the HROCT image from a prepared RPE specimen of an eye that had been recently enucleated for an iris melanoma. The columnar RPE monolayer can be clearly visualised as can the underlying choriocapillaris/choroid. Figure 1b shows the HROCT image of a healthy volunteers' outer retina/RPE. As in Srinivasan's study,[2] the outer retinal signal can be clearly seen to comprise of three distinct bands. Figure 1c shows a HROCT image of a patient with a neurosensory detachment secondary to CSR. The outer retinal signal in the parafoveal location is again represented by three dark bands, but as one traverses from the normal retina to the neurosensory detachment, the bottom dark band continues unaffected but the two superficial bands follow the elevated retina. These observations support the interpretation of the outer retinal signal as described earlier; namely, when three lines are present the bottom represents RPE, the line immediately above this is the cone outer segment tips, and the uppermost line is the IS/OS.[2] Thus the reference plane used by Oishi *et al* must be the ELM and not the IS/OS.[1] This observation does not, however, invalidate their conclusions. Photoreceptor loss would be associated with a loss of the outer retinal signal and in such cases the signal from the ELM and RPE would then be difficult to distinguish apart. In effect attenuation of the ELM signal is probably an accurate, albeit surrogate marker for photoreceptor atrophy.

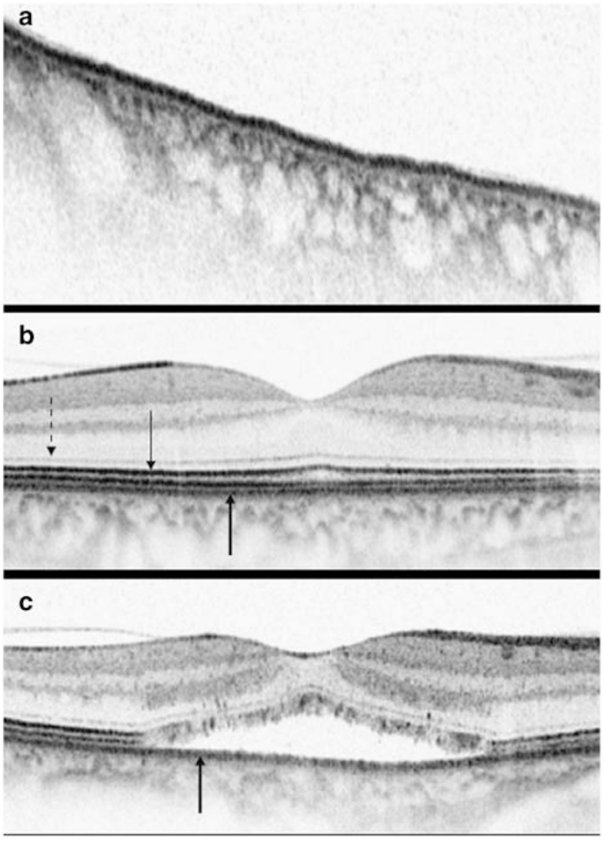

Figure 1 (a) (top panel) High-resolution OCT of a histological RPE specimen. (Vitreous gel and overlying retina removed). The choriocapillaris can be visualised as small lacunae immediately below the RPE monolayer. (b) (middle panel). High-resolution OCT findings of a normal 30-year-old human patient (orientated horizontally with the optic nerve head position beyond the right of the image). The outer retinal/RPE signal can be clearly seen to be represented by three distinct high signal bands. The uppermost solid arrow identifies the IS/OS junction, the bottom solid arrow identifies the RPE monolayer with the underling larger choroidal vessels just visible. The dashed arrow identifies the ELM, and not the IS/OS junction as identified by Oishi *et al*. (c) (bottom panel). High-resolution OCT findings in a patient with acute onset CSR. In the parafoveal location the image generated by the outer retinal/RPE shows three distinct bands. The two superficial bands (the junction of the inner and outer photoreceptor segments and the cone outer segment tips) follow the contour of the elevated retina, whereas the outer RPE band (solid arrow) continues unchanged.

References

1 Oishi A, Nakamura H, Tatsumi I, Sasahara M, Kojima H, Kurimoto M *et al*. Optical coherence tomographic pattern and focal electroretinogram in patients with retinitis pigmentosa. *Eye* 2009; **23**: 299–303.