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Sir,

Enhanced depth imaging spectral-domain optical coherence tomography of a subtle choroidal metastasis

Enhanced depth imaging (EDI) using spectral-domain optical coherence tomography (SD-OCT) has greatly improved visualization of the choroid.[1] We report a case of a subtle, symptomatic choroidal metastasis where EDI SD-OCT was beneficial to the diagnosis.

Case report

A 62-year-old woman noted 2 weeks of gradual painless decreasing vision in her left eye (OS). She saw an ophthalmologist, who referred her to Wills Eye Institute for presumed central serous chorioretinopathy. Her past medical history was significant for stage IV lung carcinoma diagnosed 6 months previously, treated currently with chemotherapy. She had a brain metastasis treated with radiation therapy 3 months previously.

On examination, her visual acuity was 6/15 in the right eye (OD) and 6/60 in the left eye (OS). Anterior segment examination was normal. Dilated fundus examination was normal OD. Mottled retinal pigment epithelial (RPE) changes were noted superotemporal to the optic disc margin OS, with a shallow serous retinal

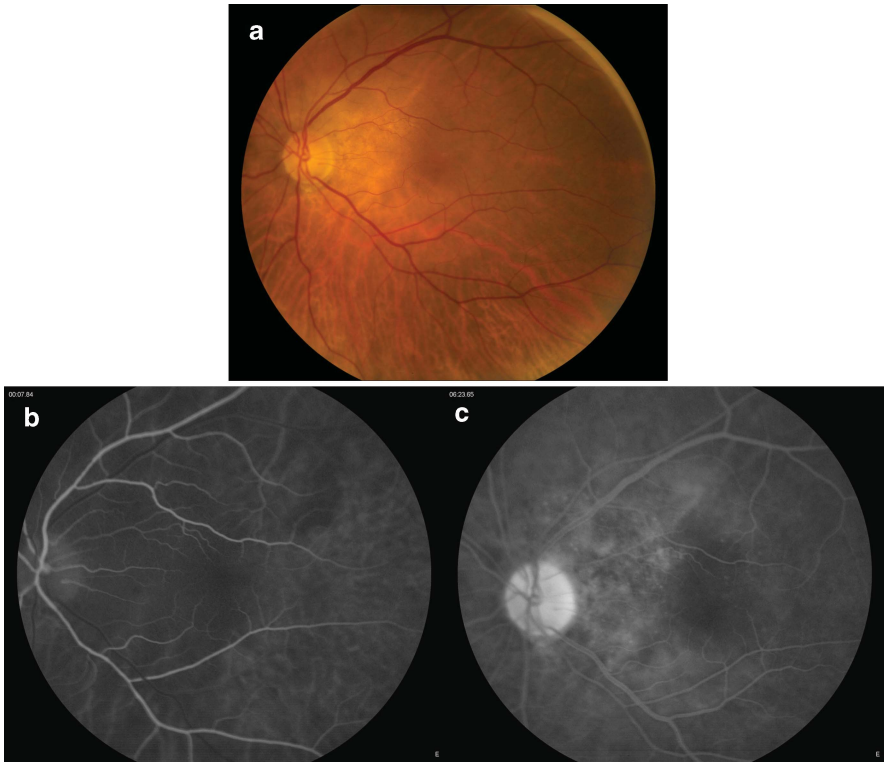

Figure 1 (a) Fundus photograph of the left eye demonstrating subtle pigment epithelial changes extending from the superotemporal disc margin and barely-perceptible subretinal fluid in the macula. (b) Early arteriovenous phase fluorescein angiogram of the left eye demonstrating delayed choroidal vascular filling temporal to the disc. (c) Late phase fluorescein angiogram of the left eye demonstrating mottled areas of punctate hyper- and hypo-fluorescence superotemporal to the disc, and faint mottled hyperfluorescence in the macula.

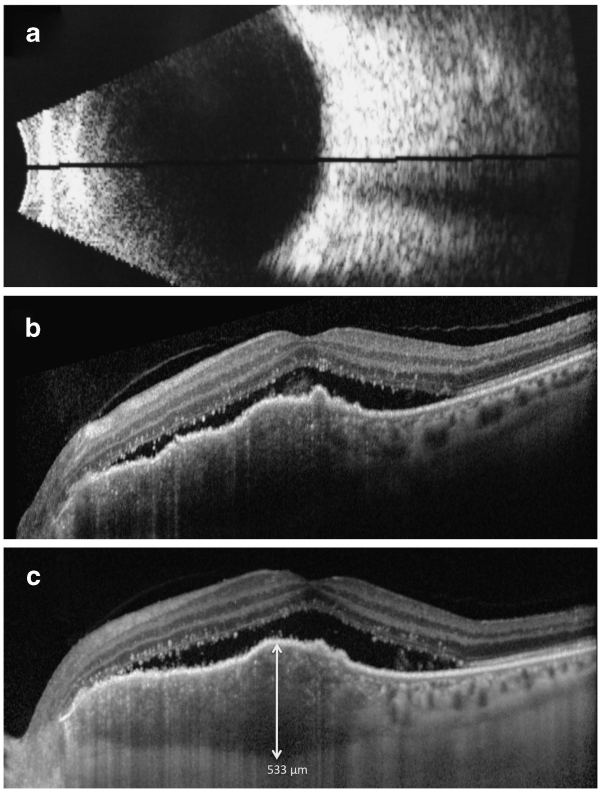

Figure 2 (a) Ultrasonography of the left eye is normal. (b) SD-OCT imaging demonstrates sub-macular fluid, an irregular appearance of the RPE, and choroidal thickening. (c) EDI demonstrates a 533-μm-thick mass disrupting the choroidal anatomy.

detachment overlying this region. No distinct mass was appreciated ophthalmoscopically.

Fluorescein angiography showed early delayed choroidal filling in the area of mottled pigmentation, late multiple pinpoint foci of hyperfluorescence, and late optic disc hyperfluorescence (Figure 1). SD-OCT images demonstrated submacular fluid and an irregular RPE contour. B-scan ultrasonography revealed normal findings without mass. In contrast, EDI SD-OCT images clearly delineated a hypo-reflective choroidal mass, measuring 553 μm at its thickest region, and 4.5 by 4.0 mm in diameter (Figure 2).

The patient was diagnosed with a presumed choroidal metastasis and was scheduled for treatment, but she subsequently suffered myocardial infarction and expired.

Comment

This is a case of a subtle choroidal metastasis where EDI SD-OCT demonstrated a lesion that was otherwise inapparent on clinical examination, ultrasonography, and regular (non-EDI) SD-OCT imaging. The tumor reported here was hyporeflective and altered the normal choroidal contour on both non-EDI and EDI SD-OCT. On EDI SD-OCT, the choroidal thickness was definitively thickened in the region of the metastasis, and the exact dimensions of the lesion could be measured. Torres *et al*[2] recently reported a series of EDI SD-OCT of 23 choroidal tumors, including small choroidal metastases that were visualized on examination but undetectable by ultrasound. In contrast, our patient did not have an obvious choroidal tumor visible on either examination or ultrasound.

In a large series of patients who had EDI SD-OCT of choroidal nevi, it was noted that quality of EDI SD-OCT images was sometimes suboptimal in lesions located away from the macula and optic nerve, as well as larger lesions.[3] The use of EDI SD-OCT may therefore not always be helpful in detecting choroidal metastases or other tumors, depending on the size and location of the tumor. However, as demonstrated in this case, EDI SD-OCT can be a useful technique for detecting and measuring subtle choroidal tumors of the posterior pole.

Conflict of interest

The authors declare no conflict of interest.

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Sir,

Alternative diagnosis for cases presented as vPED treated with high-dose ranibizumab

We read with great interest the case series presented by Chan *et al*,[1] and agree that vascularised pigment epithelial detachments (vPEDs) do not flatten easily with anti-vascular endothelial growth factor (VEGF) treatment. As the authors discuss, the prospect of using a higher than conventional dose to treat this type of choroidal neovascular membrane needs evaluation, however, we question whether the cases demonstrated did in fact have vPEDs.