Sir,

Swept-source optical coherence tomography identifies connection between vitreous cavity and retrobulbar subarachnoid space in patient with optic disc pit

Swept-source optical coherence tomography (SS-OCT) uses a wavelength swept laser as the light source, and it has less roll-off in sensitivity with increasing depth than spectral-domain OCT.[1] In addition, SS-OCT instruments use a longer centre wavelength, which improved their ability to penetrate deeper into ocular tissues. Thus, evaluations of the deeper structures of the eye are possible. Herein, we report a case of optic disc pit (ODP) in whom a connection between the vitreous cavity and the retrobulbar subarachnoid space (SAS) was clearly demonstrated using SS-OCT.

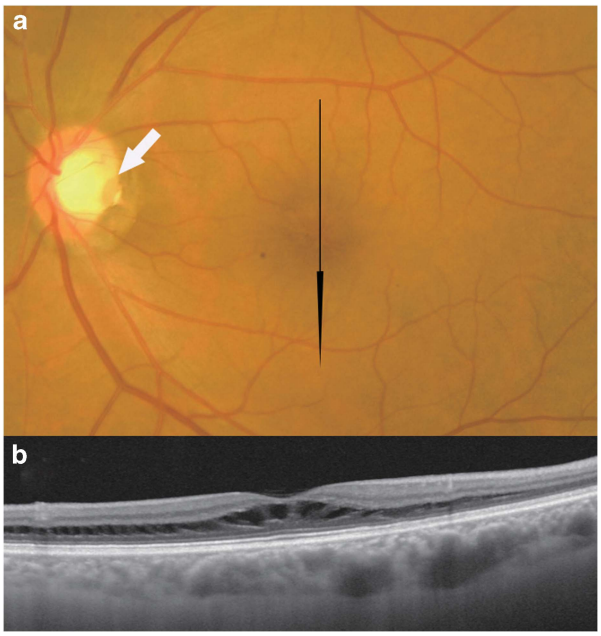

Figure 1 Fundus photograph and swept-source optical coherence tomographic (SS-OCT) image of the left eye of a 66-year-old man with an optic disc pit. The light source of this SS-OCT system is a wavelength tunable laser centred at 1050 nm. (a) Colour fundus photograph. A grey, oval-shaped optic disc pit (white arrow) at the temporal margin of the disc and peripapillary pigmentary changes are observed. The optic disc tissue other than the pit seems normal. Glaucomatous cupping is not seen. Black arrow indicates the direction of the OCT scan. (b) Vertical SS-OCT image through the fovea showing retinoschisis. Tissue columns connecting the schisis cavities can be seen.

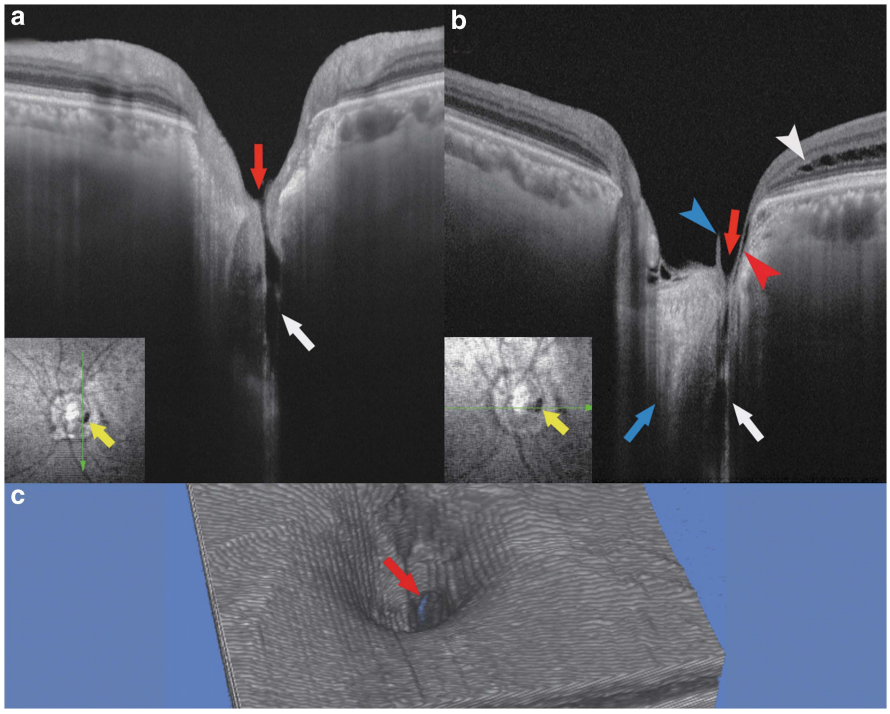

Figure 2 Swept-source optical coherence tomographic (SS-OCT) image of the left eye with an optic disc pit. The imaging depth of this SS-OCT system is 2.6 mm in tissue. (a, b) Vertical (a) and horizontal (b) B-scan cross-sectional images near the optic disc pit are shown. Retrobulbar subarachnoid space (white arrows) is clearly seen around the optic nerve. There is a direct communication between the retrobulbar subarachnoid space and the vitreous cavity (red arrows). Blue arrow indicates the optic nerve. Red arrowhead indicates a thin line of fluid that is presumably connecting with the retrobulbar subarachnoid space, but communication with this line and the schisis cavity (white arrowhead) is unclear. Blue arrowhead points to a part of a vitreous strand. Yellow arrows indicate the optic disc pit, and green arrows indicate the direction of the OCT scan. (c) Three-dimensional OCT reconstruction shows a break in the cup of the optic disc (red arrow).

Case report

A 66-year-old man diagnosed with ODP was examined with an SS-OCT instrument (DRI OCT-1, Topcon, Tokyo, Japan). The patient had visual disturbances in his left eye, and his best-corrected visual acuity was 1.2 OD and 0.7 OS. The intraocular pressure was 14 mm Hg OU. Slit-lamp examination of both eyes and fundus examination of the right eye were unremarkable. Fundus examination of the left eye showed an ODP with macular retinoschisis (Figure 1). SS-OCT clearly delineated the SAS and its direct communication with the vitreous cavity (Figure 2). The opening in the optic disc became clearly visible by a three-dimensional OCT reconstruction. Perimetry showed no glaucomatous visual field defects. Brain and orbital magnetic resonance imagings were normal.

Comment

In our case, the macular retinoschisis was most likely the cause of the visual impairment. The schisis formation is the initial step in the evolution of serous retinal detachments associated with ODPs.[2,3] Krivoy *et al*[2] suggested that the ODP acts as a conduit for fluid flow between the SAS and the schisis cavity or subretinal space. In our case, SS-OCT delineated a thin line of fluid in the disc that was presumably connected to the SAS.

Ohno-Matsui *et al*[1] reported that SAS could be seen by SS-OCT in 93.2% of highly myopic eyes. They described that an SAS was seen as a hyporeflective space around the optic nerve. In one myopic patient, there was a direct communication between the SAS and the vitreous cavity.[1]

In ODP, previous reports only inferred that there were direct communications among the SAS, vitreous cavity, and subretinal space.[3–5] Kuhn *et al*[5] reported a case of ODP in whom intravitreally injected silicone oil was detected intracranially indicating a communication between the SAS and the vitreous cavity. Our findings demonstrated a direct communication between the SAS and the vitreous cavity in an eye with an ODP.

Conflict of interest

The authors declare no conflict of interest.

References

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Sir,

Comment on 'Spontaneous haemorrhage in an eyelid hidrocystoma in a patient treated with clopidogrel'

We read with interest the article on 'Spontaneous haemorrhage in an eyelid hidrocystoma in a patient treated with clopidogrel' by Novitskaya *et al*.[1] We agree with the authors that eyelid apocrine hidrocystomas typically present as skin-colored, translucent lesions. However, our experience has shown that hemorrhagic hidrocystomas may be more common than previously reported, with or without a history of clopidogrel use. Here, we describe two cases of hemorrhagic apocrine hidrocystomas. Both of the hidrocystomas underwent excision and pathologic examination.

A 78-year-old male with a history of coronary artery disease on systemic clopidogrel and aspirin presented for evaluation for a non-painful, pigmented eyelid lesion. The patient was uncertain of the exact time of onset of the lesion, but felt that it was stable for the past 2 months. He denied any preceding trauma to the periocular tissue. Examination revealed a translucent dome-shaped cystic lesion along the left upper eyelid (Figure 1a). Detailed examination revealed a horizontal, linear demarcation suggestive of layered hemorrhage. Histological evaluation of the lesion revealed a cystic structure, consistent with apocrine hidrocystoma (Figure 1b). The lumen of the cyst contained degenerated erythrocytes and abundant hemosiderin-laden histiocytes, consistent with old hemorrhage.

A 59-year-old male with a history of dyspnea and allergic rhinitis on systemic aspirin presented for evaluation of a violaceous lesion on the upper eyelid. This lesion had been present for 4 years with recent growth in size. He denied any preceding trauma to the periocular tissue. Examination revealed a cystic, well-circumscribed, violaceous lesion superior to the right upper lid margin (Figure 1c). Histological evaluation of the lesion demonstrated a cystic lesion consistent with apocrine hidrocystoma (Figure 1d). The lumen of the cyst contained intact and