Indocyanine green angiography and multimodal imaging in a case of torpedo maculopathy

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Key words: Double, ICG, satellite, torpedo

The FFA and ICGA images of a 33-year old male who after a routine eye exam and was found to have torpedo maculopathy with the simultaneous presence of the two types in the same eye [Figs. 1-3] with corresponding angiographic patterns was being presented. There is a definite loss of RPE and choriocapillaris suggested by the window defect seen on FFA and the decreased vasculature seen on ICGA [Fig. 4]. The hyperfluorescence increases in intensity but not in size suggesting the absence of any abnormal tissue. The presence of hyperautofluorescence though at the lower margins of the lesion may suggest increased RPE activity which is incompletely understood. It can also be argued that both the lesions are part of the same larger lesion and not two distinct lesions. This may be true; however, the presence of distinct OCT and angiographic differences lead us to think that these are indeed two separate lesions.

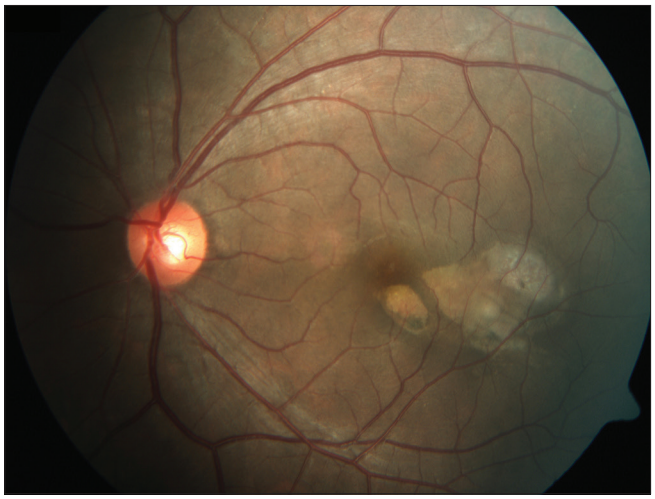

Figure 1: Color fundus photograph of the left eye showing the presence of two well-circumscribed hypopigmented lesions temporal to the macula

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Discussion

Torpedo maculopathy was first described by Roseman and Gass[1] as a benign congenital solitary, sharply circumscribed, pinkish-white, placoid, hypopigmented naevus of the retinal pigment epithelium (RPE) not associated with significant visual loss that can be detected on routine clinical evaluation. It resembles a torpedo (submarine missile) with a characteristic leading edge pointing towards the fovea.[2] Theories include incomplete differentiation of the arcuate nerve fiber bundle along the horizontal raphe, defect in the development of the RPE within the temporal fetal bulge, or alterations in the choroidal vasculature in the macular area during development.[3] It has been reported as solitary,[1] satellite lesions, and double torpedoes.[4]

These have been classified into Type 1 with mild retinal disturbance and Type 2 with outer retinal cavitation.[5] Indocyanine green angiography (ICGA) findings have not been reported. Moreover, fundus fluorescein angiography (FFA) will help to image the retinal vasculature and defects in the RPE and ICGA may help to understand the alterations in the choroidal vasculature.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other

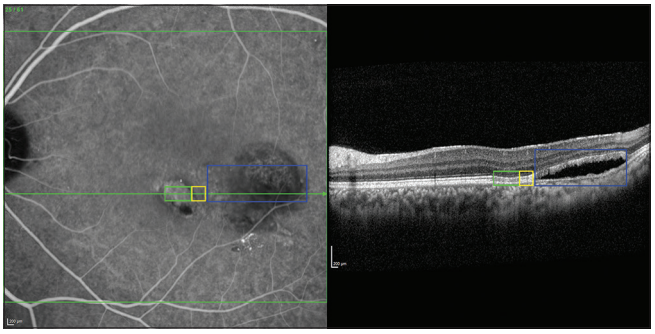

Figure 2: OCT image showing the presence of the two types of lesions in torpedo maculopathy. The colored boxes show the corresponding areas in the en face ICGA image and the SD-OCT image

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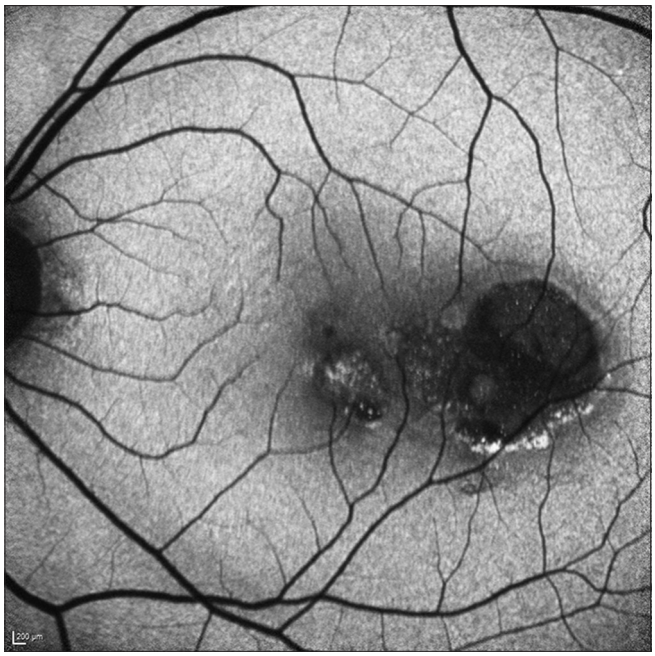

Figure 3: Short wave autofluorescence image showing hypoautofluorescence of the corresponding lesions with hyperautofluorescence at the margins

clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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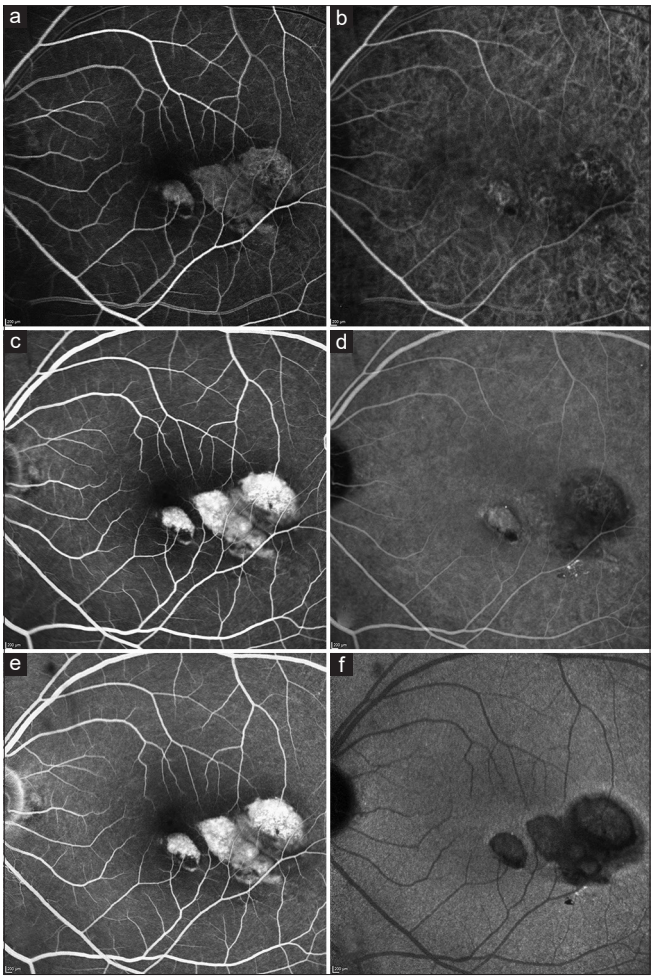

Figure 4: Early phase – (a) FFA showing hyperfluorescence with distinct borders suggestive of a window defect. (b) ICGA showing hypocyanescence with distinct lacy vessels which are decreased in number. Mid Phase – (c) FFA shows persistent hyper fluorescence that increases in intensity but not in size. (d) ICGA shows hypercyanescence in the smaller lesions with hypocyanescence in the larger lesion. Late phase – (e) FFA shows persistent hyper fluorescence. (f) ICGA shows hypocyanescence in both the lesions