

Commentary: Optical coherence tomography in sympathetic ophthalmia

Sympathetic ophthalmia (SO) is a rare, bilateral granulomatous uveitis that can develop after a variable time following a planned (such as surgical procedure) or accidental trauma.^[1] SO is more of a clinical entity that may involve iris and ciliary body or choroid, to begin with, followed by panuveitis. However, clinical presentation and course of SO remain variable.^[2] For our purposes, SO is a condition that could result in bilateral vision loss or significant ocular morbidity if not identified early or where treatment is significantly delayed. Diagnostic confusion leading to a delay in the diagnosis of SO and subsequent treatment is not uncommon.^[3] In a study by Lubin *et al.*^[4] a strong correlation between final visual acuity and severity of the inflammation was observed. The majority of the patients (93.3%) with mild inflammation retained 20/70 or better vision, whereas eyes with severe inflammation had visual acuity of less than 20/70.^[4] Thus, it is crucial to initiate treatment at the preliminary stage of SO. In this issue of the Indian Journal of Ophthalmology, Rogaczewska *et al.*^[5] reported a case of SO where spectral-domain optical coherence tomography (SD-OCT) was helpful in identifying early manifestation of the disease.

Histopathologically, the early stage of SO is characterized by minimal cellular infiltration of choroid along with exudative retinal detachment, and Dalen–Fuchs nodules.^[6] Dalen–Fuchs nodules are composed of groups of epithelioid cells or macrophages, located between Bruch’s membrane and the retinal pigment epithelium layer.^[4] These nodules can be considered characteristic of SO, but not pathognomonic and are present in only 25% to 36% of cases of SO.^[4] Dalen–Fuchs nodules can also occur in Vogt–Koyanagi–Harada disease and sarcoidosis. These nodules are usually 60 to 700 µm in diameter and most commonly seen in the midperiphery of the fundus.^[7] Dalen–Fuchs nodules can occur both in the early and late phase of SO.^[8]

Being a noninvasive, noncontact method, OCT can be used not only for timely diagnosis but also as a follow-up tool in patients with SO. Using SD-OCT, Gupta *et al.*^[9] demonstrated reversible retinal changes with photoreceptor involvement in the early stage of SO. Serous retinal detachment with disruption to the continuity of the two inner hyper-reflective bands was observed in a cohort of six patients with SO.^[9] Treatment with systemic corticosteroid led to resolution of the serous detachment with normal photoreceptor layer and restoration of a third hyper-reflective band (inner and outer segment photoreceptor junction) in these eyes. Dalen–Fuchs nodules were described as hyperreflective lesions at the level of the retinal pigment epithelium with associated disruptions of the IS/OS junction on SD-OCT in an 84-year-old patient with SO.^[10] Morphological appearance of Dalen–Fuchs nodule may resemble similar to that observed in the histopathological section.^[11,12] Using enhanced depth imaging (EDI-OCT), the thickening of choroid in acute phase of SO was described in a young male by Behdad *et al.*^[13] that reduced with systemic corticosteroid therapy. A similar observation was reported by a recent study that noted a significantly higher choroidal thickness in SO patients when compared to normal controls.^[14] Although

the increased choroidal thickness is an important marker for the degree of choroidal inflammation, it can be seen in various other inflammatory conditions.^[15,16] SD-OCT was found to be helpful in picking up a small serous retinal detachment with retinal pigment epithelium (RPE) irregularities in a 23-year old asymptomatic male who sustained a penetrating injury in the other eye.^[17] Thus, OCT can play a crucial role in the early diagnosis of SO in patients with a suggestive history. One must not forget to perform fundus fluorescein angiography and rule out central serous retinopathy before instituting systemic corticosteroid in patients with serous retinal detachment in such a scenario.^[18]

High index of suspicion and regular monitoring of such patients may facilitate timely recognition of SO and help to reduce visual morbidity.

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