Central Serous Chorioretinopathy in Myopic Patients

Central serous chorioretinopathy (CSC) is typically seen in hyperopic or emmetropic eyes, with most of which have a thickened choroid. We describe 6 eyes of 6 patients with CSC and significant myopia (Table and Figure). All eyes had a thickened choroid relative to their refractive error as measured by enhanced-depth imaging spectral-domain optical coherence tomography (Heidelberg Spectralis HRA + OCT; Heidelberg Engineering, Inc). No patients were receiving steroids.

Methods. The diagnosis of CSC in 6 patients with moderate to high myopia was confirmed by clinical examination, fluorescein angiography, indocyanine green angiography, fundus autofluorescence imaging, and spectral-domain optical coherence tomography. Choroidal thickness was measured subfoveally using enhanced-depth imaging spectral-domain optical coherence tomography.

Results. The clinical information as well as the choroidal thickness measurement and expected choroidal thickness are summarized in the Table. In each of the 3 eyes in which an expected choroidal thickness calculation was appropriate, the expected choroidal thickness was less than the measured thickness.

Comment. In a study of 28 eyes with CSC, the mean (SD) subfoveal choroidal thickness was 505 (124) µm. This contrasts with a mean (SD) subfoveal choroidal thickness of 287 (76) µm in normal eyes. Although choroidal thickness decreases with age in normal eyes, the same pattern may not hold for patients with CSC.

Our 6 eyes with CSC are unusual in that they were all myopic. With the exception of patient 6, the choroidal thickness of our cases would not normally be considered high for emmetropic eyes. However, it is high for myopic eyes. In a study of 31 patients with high myopia (mean refractive error, −11.9 diopters), the mean subfoveal choroidal thickness was 93.2 µm. A regression analysis suggested a decrease in subfoveal choroidal thickness of 7.84 µm per diopter of myopia in eyes with no history of choroidal neovascularization.

These cases reminds us that CSC can occur in myopic eyes. In the absence of a neurosensory detachment, the diagnosis of CSC can be made based on history, fundus appearance, fundus autofluorescence imaging, and measurement of choroidal thickness. In myopic eyes without a neurosensory detachment, CSC may be missed when axial length–related choroidal thickness differences are not considered. Awareness of thin choroids in “normal” myopic patients would allow for the recognition of “thick” choroids relative to refraction in eyes with CSC.

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Table. Clinical Characteristics of Myopic Eyes With Central Serous Chorioretinopathy

<table>
<thead>
<tr>
<th>Patient/Sex/ Age, y</th>
<th>Eye</th>
<th>BCVA</th>
<th>Refraction, D</th>
<th>Subfoveal Choroidal Thickness, µm</th>
<th>Expected Subfoveal Choroidal Thickness, µm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/M/37</td>
<td>OD</td>
<td>20/30</td>
<td>−8.00</td>
<td>215</td>
<td>157</td>
</tr>
<tr>
<td>2/M/57</td>
<td>OS</td>
<td>20/30</td>
<td>−3.00</td>
<td>295</td>
<td>NA</td>
</tr>
<tr>
<td>3/F/29</td>
<td>OS</td>
<td>20/20</td>
<td>−8.75</td>
<td>240</td>
<td>161</td>
</tr>
<tr>
<td>4/F/32</td>
<td>OS</td>
<td>20/20</td>
<td>−4.00</td>
<td>436</td>
<td>NA</td>
</tr>
<tr>
<td>5/M/63</td>
<td>OS</td>
<td>20/60</td>
<td>−4.50</td>
<td>333</td>
<td>NA</td>
</tr>
<tr>
<td>6/M/48</td>
<td>OS</td>
<td>20/30</td>
<td>−9.00</td>
<td>&gt;500</td>
<td>135</td>
</tr>
<tr>
<td>7/M/37</td>
<td>OS</td>
<td>20/25</td>
<td>−3.50</td>
<td>360</td>
<td>NA</td>
</tr>
</tbody>
</table>

Abbreviations: BCVA, best-corrected visual acuity; D, diopters; NA, not applicable (refraction between −3.00 D and −6.00 D).

*Formula for expected subfoveal choroidal thickness in eyes without central serous chorioretinopathy that have more than 6 D of myopia and no history of choroidal neovascularization is 265.8 µm + 7.84 × (spherical equivalent) − 1.25 × (age in years).
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Figure. Central serous chorioretinopathy in myopic eyes. A, Color photographs of the affected eyes of cases 1, 2, and 3 (from left to right). There are granular retinal pigment epithelial changes in the maculas of all 3 eyes and an absence of funduscopic features of myopic degeneration. B, Fundus autofluorescence imaging of the same eyes. Macular hyperautofluorescence and hypofluorescence changes are consistent with central serous chorioretinopathy. C, Enhanced-depth imaging spectral-domain optical coherence tomography of the same eyes demonstrates subretinal fluid. In each case, subfoveal choroidal thickness is high for the degree of myopia.

Unilateral Retinal Pigment Epithelium Dysgenesis May Be a Bilateral Disease

Unilateral retinal pigment epithelium (RPE) dysgenesis is a rare entity with a poorly documented etiology, pathogenesis, and prognosis. It has a unique scalloped appearance on fluorescein angiography that is inverted on fundus autofluorescence (FAF) imaging. Associated epiretinal fibrosis, retinal detachment, or choroidal neovascularization can lead to vision loss. We report a case of RPE dysgenesis in which the patient had classic findings in only 1 eye but distinct, stellate RPE abnormalities in both eyes indicative of a bilateral, asymmetric disease. To our knowledge, bilateral RPE dysgenesis has not been previously described.

Report of a Case. A 35-year-old woman without significant medical history had a 6-year history of photopsias and dimmer vision in her right eye only. The patient's visual acuity was 20/25 OD and 20/20 OS. Anterior segment examination findings were normal in both eyes. Fundus examination of the right eye revealed a large, scalloped area of reticular RPE hyperplasia continuous with the optic nerve. Within the lesion, there was mottled atrophy of the RPE (Figure 1A and B). Fundus examination findings of the left eye were normal.

Humphrey visual field testing demonstrated an enlarged blind spot in the right eye and normal results in the left eye. Fluorescein angiography revealed patchy hyperfluorescence and hypofluorescence with an irregular margin of hyperfluorescence (Figure 1C and D). Imaging with FAF demonstrated a hypoautofluorescent lesion with a distinctive, reticular border that was inverted relative to fluorescein angiography. There was mild hyper autofluorescence at the edge of the lesion. Interestingly, there