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Atypical transient subretinal exudation following photodynamic therapy for chronic central serous retinopathy: a case report



Central serous retinopathy (CSR) is a common ocular disease of young and middle-aged adults that affects men more than women. It manifests as the accumulation of central subretinal fluid (SRF) with or without the presence of retinal pigment epithelial detachment (RPED) and is often associated with reduced visual acuity (VA) or metamorphopsia.¹ Most cases of idiopathic CSR resolve spontaneously; however, chronic cases in which the SRF persists longer than 3 months may require treatment.² In cases of CSR with a focal leak, retinal laser photocoagulation may be an appropriate treatment option to accelerate the resorption of SRF and improve VA. In patients with chronic fluid and persistent visual symptoms, photodynamic therapy (PDT) has been shown to be a safe and effective therapeutic option.^{2–5}

We report a case of chronic CSR with persistent SRF despite treatment with focal laser, observation, and subsequent half-dose verteporfin PDT. This treatment resulted in drastic acute exacerbation of macular SRF within 1 day that fortunately resolved spontaneously over the next 2 months without the need for further adjunctive treatment.

CASE REPORT

A 60-year-old female with a medical history significant for polymyositis and osteoporosis presented with decreased vision in her right eye. She had been followed for 2 years with asymptomatic retinal pigment epithelium (RPE) changes in her right eye, presumably from a prior episode of CSR that went undetected. She did not report any significant family history or ocular history. She had used oral prednisone in the past for polymyositis but had discontinued it for at least 2 years before her presentation. Her current medications included

Azathioprine, Alendronate, Esomeprazole, Tolterodine, and vitamins B and D.

On examination, her best-corrected visual acuity (BCVA) was 20/50 OD and 20/40 OS. Macular examination of her right eye demonstrated central RPE changes, SRF, and no RPED. Her contralateral eye showed mild RPE mottling with no SRF. Optical coherence tomography (OCT) confirmed SRF and intraretinal photoreceptor precipitates consistent with a diagnosis of CSR in the right eye, and normal macular contour in the left eye (Fig. 1). After persistent SRF after a 2-month period of observation, the patient elected to pursue treatment options. An intravenous fluorescein angiogram demonstrated a moderately sized focal leak superior to the fovea in the right eye (Fig. 2). Focal thermal laser was directly applied to this area.

At 1-month postlaser follow-up, the patient still complained of blurred vision, and OCT showed decreased but persistent SRF (Fig. 3). This persisted at the 4-month follow-up and VA remained at 20/50 OD. An indocyanine green angiogram demonstrated a central engorged choroidal vessel (early frame) and central choroidal hyperpermeability (late frame) in the right eye (Fig. 2). ICG-guided PDT was offered and carried out uneventfully using half-dose verteporfin and full-fluence laser (50 J/cm²) with a 6-mm spot size and total energy of 160 mJ.

One day post-PDT, the patient returned with significant vision loss in the treated right eye with BCVA of 20/80 and a massive increase in subfoveal SRF demonstrated on OCT (Fig. 4). Her vision further deteriorated the following day to 20/100, and OCT scan demonstrated a further increase in her SRF with a central retinal thickness 689 µm. On clinical examination there was no evidence of subretinal haemorrhage, lipid, or choroidal neovascular membrane. One week later, there was a significant decrease in SRF (Fig. 4), and at 1-month follow-up, most of the SRF had resolved spontaneously (Fig. 5). At 2 months there was complete resolution of SRF, and her BCVA returned to 20/40.

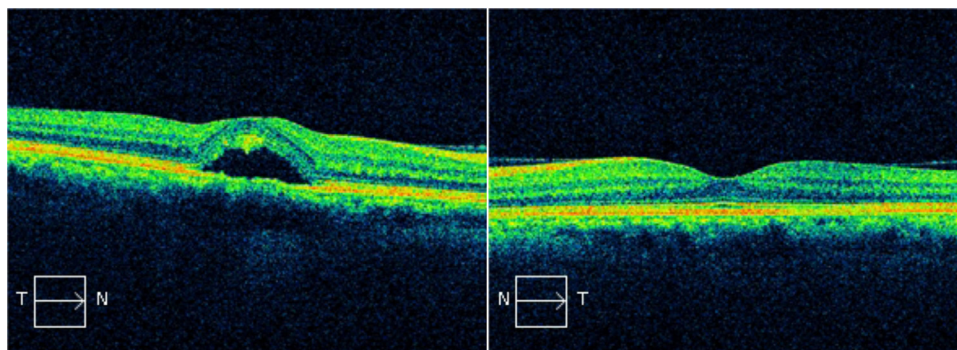


Fig. 1—Optical coherence tomography (OCT) of right and left eyes baseline. OCT comparing the right eye (left image) to the left eye (right image) at baseline measurements.

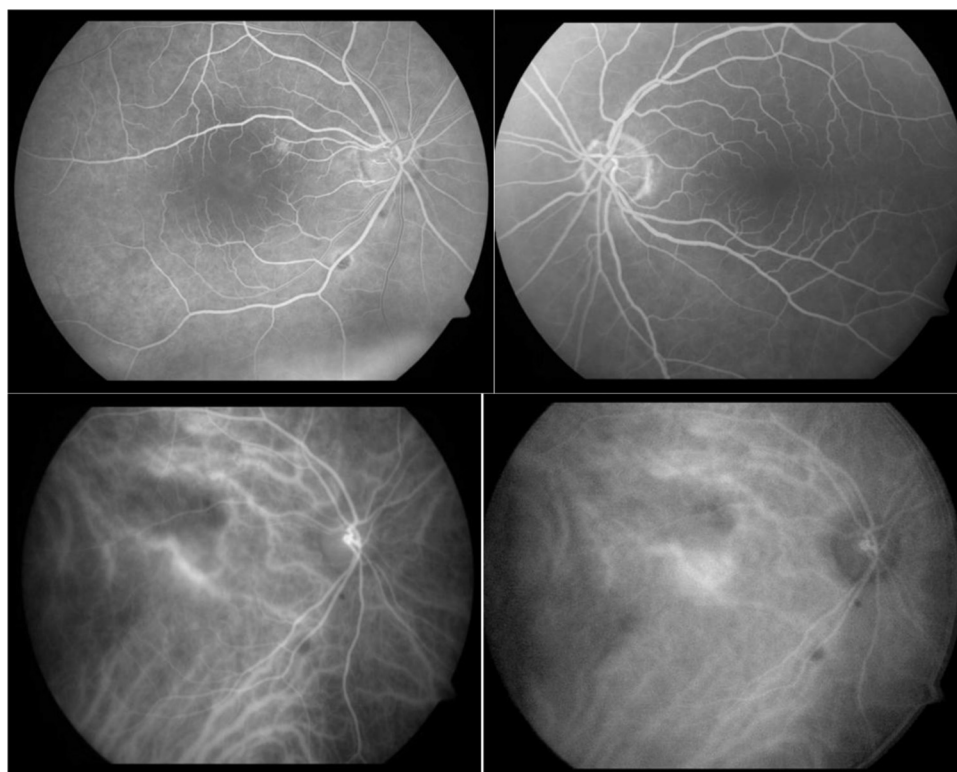


Fig. 2—IVFA of right and left eyes as well as indocyanine green angiogram (ICGA) of the right eye. IVFA comparing the right eye (top left) to the left eye (top right). Note the moderately sized focal leak superior to the fovea in the right eye. An early frame ICGA of the right eye (bottom left) demonstrated an engorged choroidal vessel, and the late-frame ICGA (bottom right) demonstrated choroidal hyperpermeability.

DISCUSSION

Most cases of CSR resolve spontaneously and do not require treatment.² Approximately 10%–20% of cases that demonstrate SRF persisting longer than 3 months are labeled as chronic CSR. Various treatment options have been described for these patients, including focal thermal laser photocoagulation, finasteride, and PDT. Although focal thermal laser is a common first-line approach to active CSR, PDT has been a well-described treatment strategy in both acute and chronic CSR. PDT dosing protocols for CSR were initially based on the Verteporfin in photodynamic therapy study (VIP)⁶ and treatment of AMD with photodynamic therapy study (TAP)⁷ studies

using standard dose verteporfin (6 mg/m^2) and standard fluence (50 J/cm^2). Although there have been rare reports of acute vision loss using PDT in the AMD population,⁸ there have been no such reports in the CSR population.

In an effort to further reduce possible PDT complications, various modified verteporfin dosing protocols have been recently described for CSR. These protocols include half-dose verteporfin,^{3,9} half-fluence PDT,^{5,10} one-third dose verteporfin,¹¹ minimal-fluence PDT,¹² and a combination of half-dose verteporfin with half-fluence PDT.¹³ Both the half-dose verteporfin and half-fluence PDT studies have demonstrated equivalent efficacy, safety, and long-term results with a trend toward faster resolution of

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