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Central Serous Chorioretinopathy: A Report of Two Unusual Causes

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Abstract

Two cases of central serous chorioretinopathy due to unusual etiology are presented, one after sustaining a head injury following a fall and the other after being treated for allergic conjunctivitis with topical steroids. Both cases showed resolution of their condition and return of their visual acuity to normal on follow-up.

Keywords: Central, serous, chorioretinopathy, head injury, topical, steroids

INTRODUCTION

Central serous chorioretinopathy (CSC) is one of the several chorioretinal disorders characterized by serous detachment of the neurosensory retina and/or the retinal pigment epithelium (RPE). CSC is one of the 10 most common diseases of the posterior segment of the eye and a frequent cause of mild-to-moderate visual impairment.^[1]

A recent meta-analysis by Liu *et al.*, which included 9839 patients from 17 studies, found the risk factors showing significant association with the occurrence of CSC to be hypertension (odds ratio [OR] = 1.7; 95% confidence interval [CI]: 1.28–2.25), *Helicobacter pylori* infection (OR = 3.12; 95% CI: 1.81–5.40), steroid usage (OR = 4.29; 95% CI: 2.01–9.15), sleeping disturbance (OR = 1.90; 95% CI: 1.28–1.83), autoimmune disease (OR = 3.44; 95% CI: 1.90–6.26), psychopharmacologic medication use (OR = 2.69; 95% CI: 1.63–4.45), and Type A behavior (OR = 2.53; 95% CI: 1.08–5.96).^[2]

CASE REPORTS

Case 1: Central serous retinopathy following a head injury

A 30-year-old Emirati male presented to the eye clinic with a 3-day history of reduced central vision and metamorphopsia in the right eye.

His symptoms began 1 day after sustaining a fall which resulted in a head injury and a nasal fracture which was managed conservatively.

Notable history included well-controlled Type 2 diabetes for which the patient was using metformin.

On examination, best-corrected visual acuity was 6/18 in the right eye and 6/6 in the left eye, and anterior segment examination was unremarkable.

Funduscopy confirmed the presence of mild bilateral nonproliferative diabetic retinopathy, with parafoveal exudate in the right eye.

The right eye also showed a large, circumscribed serous retinal detachment [Figure 1] with a massive volume of subretinal fluid and associated pigment epithelial detachments on ocular coherence tomography (OCT) [Figure 2].

The patient was observed and reviewed at 1 month, at which point the visual acuity in the right eye improved to 6/9. A repeat OCT showed a marked improvement in subretinal fluid [Figure 3] which reflected the clinical and subjective findings, namely absence of serous retinal elevation on funduscopy, mildly troublesome metamorphopsia, and a general improvement in central vision.

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By month 5, the patient reported complete resolution of visual symptoms, the initial exudate had spontaneously resorbed [Figure 4], and the OCT remained free of subretinal fluid.

At 1-year follow-up, best-corrected vision was maintained at 6/6 in both the eyes, and the OCT remained free of subretinal fluid [Figure 5]. The patient is currently being monitored at regular intervals for diabetic retinopathy screening purposes only.

Case 2: Central serous retinopathy following topical steroid use

A 53-year-old Emirati female presented to the clinic with a 1-week history of central visual blurring and distortion in the right eye.

She had recently been treated for bilateral allergic conjunctivitis at an external clinic with mast cell stabilizers and topical steroids. Her visual symptoms began 3–4 days after initiation of topical steroids.

There was no other previous ocular history of note. She suffered from Type 2 diabetes which was well controlled with metformin.

On examination, the visual acuity was 6/30 in the right eye and 6/6 in the left eye.

The allergic conjunctivitis had improved, and the anterior segments were unremarkable.

Fundoscopy did not reveal any diabetic retinopathy in either eye; however, a serous retinal detachment was visualized in the right eye, which was confirmed on OCT [Figure 6].

The topical steroids were stopped and the patient was started on Nevanac 1 mg/ml eye drops four times daily to the right eye for 1 month.

At 1-month follow-up, the patient reported an improvement in central vision, and the visual acuity had improved to 6/7.5, as had the OCT findings with a reduction of central retinal thickness from 426 to 265 microns [Figure 7].

The patient was counseled with regard to the side effects of topical steroid use and remains under follow-up for diabetic retinopathy screening.



Figure 1: Image of the right fundus at presentation, showing mild nonproliferative diabetic retinopathy with mild exudation. A large and well-circumscribed serous retinal detachment is visible

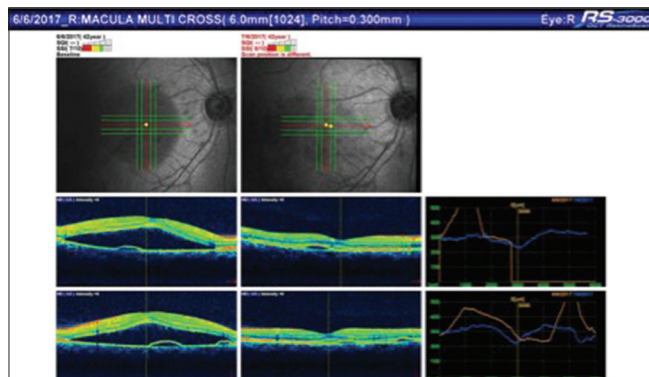


Figure 3: Ocular coherence tomography at 1 month confirming spontaneous and almost total resolution of subretinal fluid. The images on the left represent ocular coherence tomography findings at presentation, whereas the images on the right are at 1 month

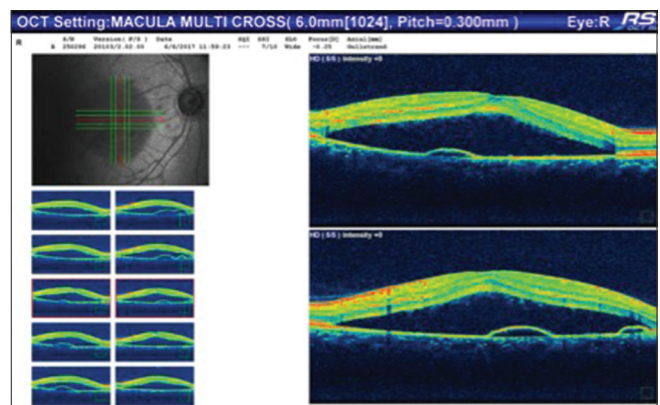


Figure 2: Ocular coherence tomography at presentation confirming a serous retinal detachment with two associated pigment epithelial detachments



Figure 4: Fundus photo at month 5 depicting resolution of the serous retinal detachment and resorption of exudate. Note the atrophic retinal pigment epithelium changes inferotemporally

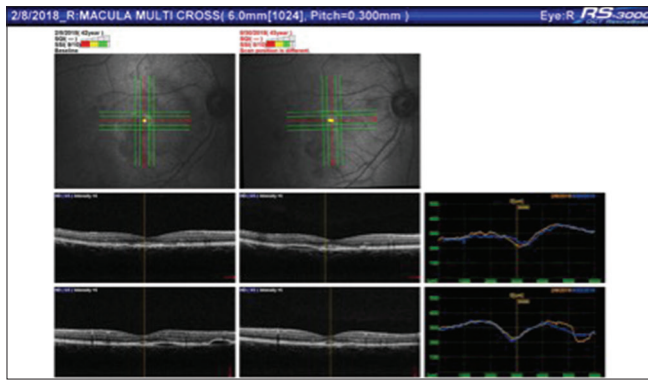


Figure 5: Ocular coherence tomography at 1 year remaining free of subretinal fluid. There are some fibrotic changes occurring; however, the vision remains stable at 6/6

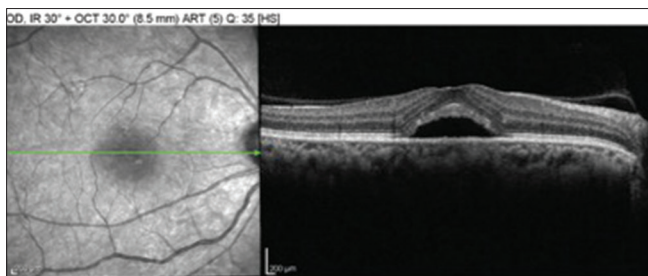


Figure 6: Ocular coherence tomography of the right eye at presentation with subretinal fluid visible

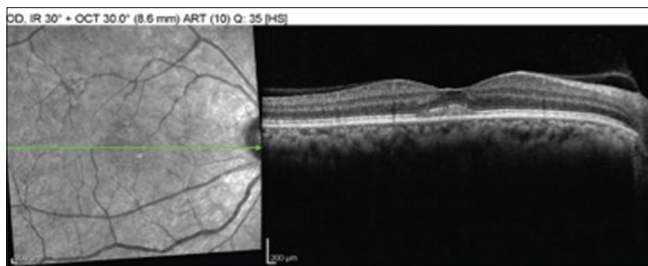


Figure 7: Ocular coherence tomography of the right eye at 1-month follow-up. Note the spontaneous resolution of subretinal fluid after stopping topical steroids

DISCUSSION

The occurrence of CSC, after a head injury, is very rare with only two reported cases until now^[3,4] where the

mechanism may be directly related to the injury, with damage to the choroidal vasculature and subsequent leakage. Associated damage to the overlying RPE may then have allowed a CSC to develop in our patient. From another point of view, such occurrence may be related to the stress associated with the incidence of head trauma, which in turn is a known predisposing factor for the occurrence of CSC.

However, in the case presenting with CSC following topical steroid use, we feel that this is the first case reported with such incidence. A very consistent association has been noted between CSC and exogenous corticosteroid use, most commonly with systemic administration, either intravenous or oral.

Steroids used through other modes, such as intranasal in nasal spray, topical dermal in skin creams, intra-articular, epidural, or periorbital, may be associated with CSC,^[5] but this phenomenon has never been reported after topical steroid use.

The argument can be that the topical steroid can find its way to the systemic circulation by reaching the nasal mucosa through a patent lacrimal system, however, we would then expect a higher reporting rate of CSC associated with topical steroid use.

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Conflicts of interest

There are no conflicts of interest.

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