

# Central serous retinopathy: an unusual cause of acute visual loss

Jennifer L. Chu, MD\*<sup>†</sup>; Jeffrey Tyberg, MD<sup>†</sup>

## ABSTRACT

Ophthalmologic complaints represent approximately 2% of emergency department (ED) visits. Acute vision loss is the most serious of such presentations and requires prompt assessment for a treatable cause. The differential diagnosis for acute vision loss includes retinal detachment, macular disorders, vaso-occlusive disorders, temporal arteritis, neuro-ophthalmologic disorders, and functional disorders. We report the case of a previously healthy 33-year-old man who presented to the ED with acute bilateral vision loss that was ultimately diagnosed as central serous retinopathy (CSR), an idiopathic, self-limited condition that typically affects males age 20 to 50 years. This condition is not mentioned in standard emergency medicine textbooks or the emergency medicine literature, and our hope is that our report will serve to illustrate a typical case of CSR and help prompt emergency physicians to consider this diagnosis in the appropriate circumstances.

## RÉSUMÉ

Les troubles oculaires motivent environ 2 % des consultations aux services des urgences (SU). Les pertes subites de la vision sont les troubles plus graves et exigent une évaluation rapide en vue de la détection d'une cause susceptible de traitement. Le diagnostic différentiel des pertes subites de la vision comprend le décollement de la rétine, les troubles maculaires, les troubles vaso-occlusifs, l'artérite temporale, les troubles neuro-oculaires, et les troubles fonctionnels. Nous faisons état, dans le présent article, du cas d'un homme de 33 ans, auparavant en bonne santé, qui s'est présenté au SU pour une perte subite et bilatérale de la vision; après examen, on a conclu au diagnostic de rétinopathie séreuse centrale (RSC), une affection idiopathique, spontanément résolutive, qui touche surtout les hommes de 20 à 50 ans. Cette affection ne figure pas dans les livres classiques de médecine d'urgence ou dans la documentation sur la médecine d'urgence; aussi souhaitons-nous que cet exposé serve à décrire un cas typique de RSC, et fasse penser aux médecins d'urgence d'envisager ce diagnostic dans les circonstances appropriées.

**Keywords:** ophthalmology, retinal disorders, visual loss

Ophthalmologic complaints represent approximately 2% of emergency department (ED) visits.<sup>1</sup> Acute vision loss is one of the most serious of such presentations and requires prompt assessment for a treatable cause. Most cases of acute vision loss are unilateral. The differential diagnosis of nontraumatic monocular vision loss is broad and includes vaso-occlusive disorders, retinal detachment, vitreous hemorrhage, macular disorders, neuro-ophthalmologic disorders, and functional disorders.<sup>1</sup> Acute bilateral vision loss is rare, and the differential diagnosis includes severe bilateral carotid stenosis, complex migraine, hypertensive emergency, giant cell arteritis, bilateral occipital lobe ischemia, neuro-ophthalmologic disorders, and functional disorders.<sup>2</sup>

We report the case of a previously healthy 33-year-old man who presented to the ED with acute bilateral vision loss that was ultimately diagnosed as central serous retinopathy (CSR), an idiopathic, self-limited condition. Our hope is that this report will serve to illustrate a typical case of CSR and help prompt emergency physicians to consider this diagnosis in the appropriate circumstances.

## CASE REPORT

A 33-year-old man of Asian descent presented to the ED with acute bilateral visual loss. He described sudden loss of vision in his right eye 4 days prior to presenting and a 1-day history of left vision loss. Three days prior to ED presentation, he had seen an optometrist about the visual loss in his right eye. He was told that “there was some water behind his eye due to stress,” and a follow-up appointment with an

From the \*St Michael's Hospital; †Division of Emergency Medicine, Department of Medicine, University of Toronto, Sunnybrook Health Sciences Centre, Toronto, ON.

**Correspondence to:** Dr. Jennifer L. Chu, St. Michaels Hospital, 30 Bond Street, Toronto, ON M5B 1W8; jenniferchu15@gmail.com.

This article has been peer reviewed.

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CJEM 2013;15(5):311-313

DOI 10.2310/8000.2012.120802

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CJEM • JCMU

2013;15(5) 311

ophthalmologist had been arranged for several weeks in the future. He could not remember the name of the diagnosis given to him.

In the ED, he described his vision as a “grey haze.” He had previously normal vision and did not wear corrective lenses. There was no history of trauma, and he denied ocular pain, headache, or constitutional symptoms. Both episodes of vision loss had occurred over a period of minutes. He had no serious past medical history, was not taking any prescription or over-the-counter medications, and denied substance use. There was no family history of ophthalmologic or neurologic disorders.

On examination, the patient had normal vital signs and his visual acuity was 20/200 bilaterally. External inspection of his eyes did not reveal any abnormalities. His visual fields were normal to confrontation. His pupils were 4 mm, round, equal, and reactive to light. Extraocular movements were intact and pain free. Fundoscopy, slit-lamp examination, and intraocular pressure measurements were normal. His neurologic examination was unremarkable.

A complete blood count, electrolytes, erythrocyte sedimentation rate, and C-reactive protein were all normal. A noncontrast cranial computed tomographic scan did not reveal any abnormalities. The ophthalmology service was consulted.

After hearing a description of the history, physical examination, and investigations, the consultant ophthalmologist felt that the optometrist’s diagnosis of “water behind the eye” represented CSR. The patient was seen the following day by Ophthalmology, and the diagnosis of CSR was confirmed. No treatment was initiated. At the 1-month telephone follow-up, the patient stated that his vision was near-normal.

## **DISCUSSION**

This case was of particular interest to us as CSR was not a condition with which we or any of our emergency physician colleagues were familiar. A review of Rosen’s and Tintinalli’s emergency medicine textbooks did not identify any mention of CSR,<sup>1,3</sup> and a literature review did not reveal any publications on this topic in emergency medicine journals, although many references to it exist in the ophthalmology literature.

CSR (also called central serous chorioretinopathy) was first described in 1866 as central recurrent retinitis and the term CSR was first used in 1967.<sup>4</sup> CSR is an idiopathic disorder that usually affects males between

the ages of 20 and 50 years in which a retinal pigment epithelial defect causes fluid collection under the retina, leading to a serous detachment.<sup>5</sup> The only published population-based study of this entity found the incidence of CSR to be 5.8 per 100,000 persons and a sixfold higher incidence in males.<sup>6</sup>

Patients with CSR typically present with acute vision loss, which is bilateral in up to 40% of cases.<sup>4</sup> Patients may also complain of a scotoma, decreased colour saturation, and loss of contrast sensitivity.<sup>5</sup> Examination reveals a decreased visual acuity with normal pupillary function. Fundoscopy may reveal a subretinal fluid blister.<sup>7</sup> The diagnosis is confirmed with optical coherence tomography or fluorescein angiography.

Several poorly understood risk factors have been identified for the development of CSR. Type A personality, and resulting high stress, was one of the first risk factors identified, and it has been hypothesized that high circulating levels of cortisol and epinephrine in such individuals contribute to the disease. This hypothesis is supported by the fact that there is an association between corticosteroid use and CSR.<sup>5</sup> CSR has also been associated with pregnancy, alcohol use, smoking, antihistamine use, hypertension, and family history. The most commonly affected groups are whites and Asians.<sup>4</sup>

Treatment is not generally required for CSR. Reducing levels of stress and discontinuing any potentially contributing medications are advised. If CSR is unresolved after 3 months, treatments such as focal photocoagulation, photodynamic therapy, and other laser therapies may be indicated.

## **CONCLUSION**

Central serous retinopathy is an idiopathic, self-limited disorder that causes unilateral or bilateral acute visual loss. Awareness and recognition of CSR by emergency physicians could avoid unnecessary ED investigations in such patients. Prompt referral to Ophthalmology is indicated in suspected cases, and outcomes are typically good.

**Competing interests:** None declared.

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