Welding Arc Maculopathy: a case report

Rafael Garcia [1], Gabriella M. Mingione [2], Andréia Novelli [2], Paulo Henrique Horizonte [1], Henrique Monteiro Leber [1], Nina Rosa Konichi da Silva [3], Guilherme Daher G M Reis [4], André Marcelo V. Gomes [5]

[(1)] First year Retina and Vitreous fellowship student of Insituto Suel Abujamra; [(2)] First year resident of Instituto Suel Abujamra; [(3)] Second year Retina and Vitreous fellowship student of Insituto Suel Abujamra; [(4)] Clinical Retina fellowship student of Insituto Suel Abujamra, [(5)] Chief of Retina and Vitreous Fellowship program of Instituto Suel Abujamra.

INTRODUCTION

Photic retinopathy (PR) refers to a disorder caused by prolonged or high intensity exposure of the macula to light energy [(1)]. It can occur after staring at the sun, at laser points and because of occupational hazards, such as in welding arc workers [(2)]. This kind of light toxicity occurs due to a photochemical injury in which biochemical reactions cause destruction of the retinal tissue. It produces acute and chronic degenerative macular changes. Symptoms include blurry vision, central scotoma and metamorphopsia. They can be present within hours or even many months after the trigger event [(1)].

METHODS

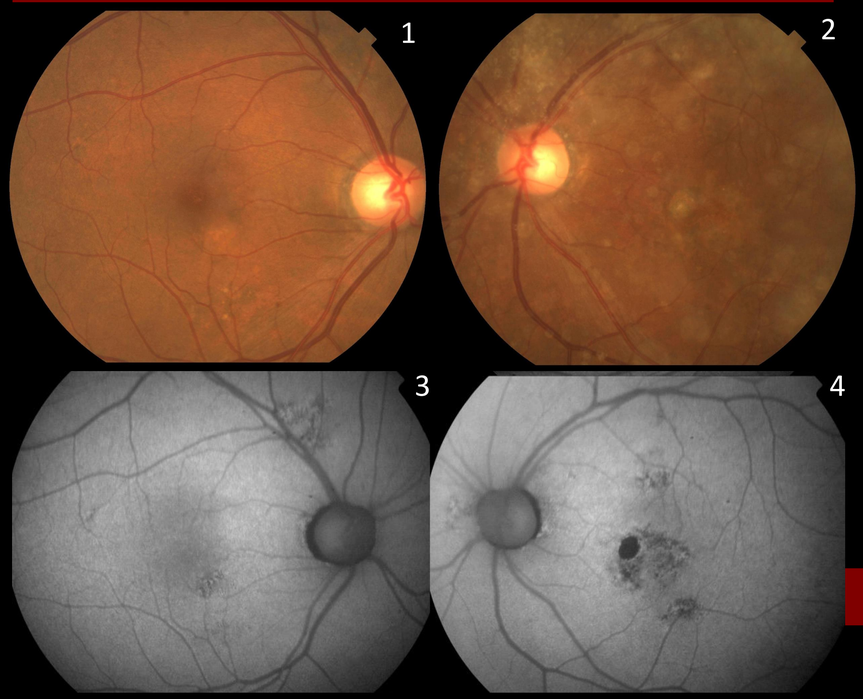
Medical records review.

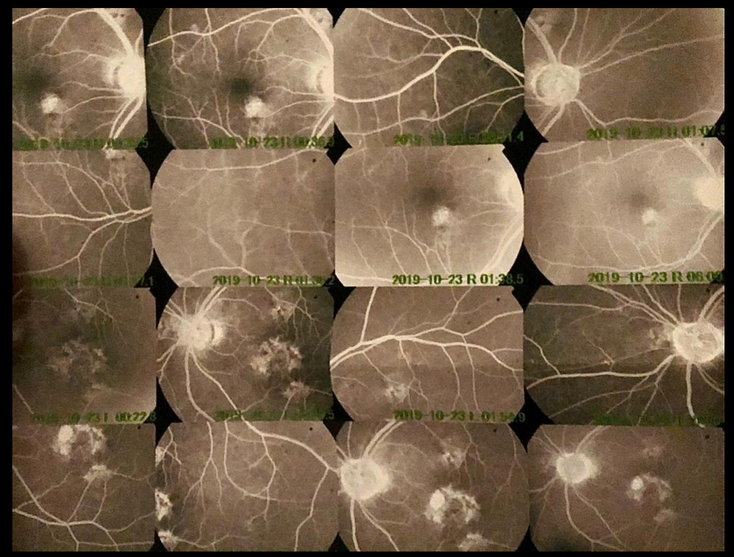
RESULTS

A 51-year-old male patient was referred to us with the complaint of longstanding and progressive vision loss in his left eye. He was otherwise healthy and was not under any medications. Family history was negative for ocular diseases. He had been working as a welder for the past 10 years, sometimes without wearing proper protective devices. His best corrected visual acuity was 20/25 in his right eye (OR) and 20/40 in his left eye (OS). Ophthalmoscopy demonstrated areas of altered macular reflex in each eye, especially in the OS, as can be seen in the retinography (images 1 and 2).

OS OCT evinced points of atrophy in the retinal pigment epithelium (RPE) and attenuation of photoreceptors in the fovea. Autofluorescence (images 3 and 4): areas of macular hipoautofluorescence related to RPE atrophy, more proeminent in the OS. Fluorescein angiography (image 5) showed staining corresponding to RPE disruption with no leakage. As the ocular findings were all chronic, we managed the case with clinical follow-up.

IMAGES





DISCUSSION

PR is diagnosed based on clinical history, retinal examination and diagnostic imaging, such as OCT and FA [(2)]. Recovery may be spontaneous in nature and can occur over the course of 3-6 months after the inciting event, though visual recovery might be incomplete and patient may suffer from permanent visual impairment and central scotoma. Thus, protective device containing appropriate lenses is essential to protect against retinal insult in welding laborers.

REFERENCES

1. American Academy of Ophthalmology. Retina and Vitreous (2007-2008). Section 12, pg 305-309.
2. Basic and Clinical Science Course 2016-2017 American Academy of Ophthalmology.