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Ocular rosacea associated with transient monocular vision loss: resolution with oral metronidazole

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To the Editor:

Transient monocular vision loss (TMVL) is an abrupt, temporary loss of vision. It can be idiopathic or the result of embolic, hemodynamic, vasospastic, ocular, or neurologic conditions [1]. Ischemic causes are the most common cause of TMVL, including carotid thromboembolism, atherosclerosis, emboli, large vessel vasculitis (e.g., giant cell arteritis and Takayasu disease), vascular hypoperfusion, central retinal artery or vein occlusion, and corneal endothelial dysfunction [1,2]. One study found that 28.2% of transient vision loss cases had no ischemic or embolic cause with migraine attacks being the most common etiology [2]. Nonvascular, ocular causes of TMVL have also been described, including angle closure glaucoma, spontaneous hyphema, tumors, and congenital optic disc anomalies [1]. There are no published reports describing ocular rosacea as a condition leading to TMVL.

We present a 68-year-old woman who presented to dermatology for management of chronic facial redness, acne-like breakouts, and conjunctivitis. She also noted a more recent history of TMVL of the right eye with no identifiable etiology. She reported TMVL that would spontaneously occur ~10 times per month and lasted minutes. Extensive ocular and vascular studies, including carotid artery ultrasound and MRI imaging, were normal with no evidence of ischemia or vasculitis. Fasting lipid panel testing over multiple years showed no cholesterol abnormalities. Anticoagulation therapy did not reduce her TMVL. On examination, the patient had erythematous papules with confluent erythema and telangiectasias

on the cheeks, nose, and glabella, as well as conjunctivitis. She was diagnosed with papulopustular rosacea with ocular involvement. Due to doxycycline and azithromycin allergies, oral metronidazole (250mg twice daily) was initiated. After one month, she reported ~75% improvement of her papulopustular rosacea and near complete resolution of her conjunctivitis and TMVL. Her skin remains clear with no ocular symptoms after >three months of ongoing antibiotic therapy.

Rosacea is a chronic inflammatory disorder primarily affecting the bilateral cheeks, nose, chin, and forehead. Ocular symptoms are a less common manifestation of rosacea that can present as glaucoma, dry eyes, chalazion, blepharitis, and conjunctivitis [3]. Although the pathogenesis of rosacea is poorly understood, vascular hyperreactivity with activation of transient receptor potential vanilloids 1 (TRPV1) and 4 (TRPV4) and transient receptor potential ankyrin 1 (TRPA1) may be involved [4]. These receptors are found on sensory neuron endings and are widely expressed in keratinocytes [4]. It is postulated that common triggers of rosacea (e.g., alcohol, spices, and temperature extremes) may activate TRPV1, TRPV4, and TRPA1 resulting in mixed immune cell activation and the release of vasoactive peptides, which drive the inflammatory and vascular manifestations of rosacea [4,5]. These mixed inflammatory and vascular abnormalities are also evident in skin biopsies obtained from erythematotelangiectatic and papulopustular rosacea patients [6].

The overlapping vascular and inflammatory features of TMVL and ocular rosacea, as well as the dramatic improvement of both conditions in our patient, suggests a possible mechanistic link between these two conditions. Rosacea is also associated with other conditions characterized by vascular dysregulation (e.g., cutaneous flushing and migraines) suggesting that ocular rosacea may represent a non-vascular condition which can contribute to the development of TMVL in a subset of patients. While the vascular hyperreactivity hypothesis represents a pathomechanism to explain the association of rosacea and transient vision loss, it is also possible

that rosacea-associated inflammation and ocular edema (e.g., glaucoma) may also contribute [3]. Therefore, reduced inflammation with oral metronidazole or another antibiotic may provide an explanation for the resolution of our patient's TMVL. Further studies are necessary to explore the potential overlapping inflammatory and vascular elements of rosacea and TMVL.

Potential conflicts of interest

The authors declare no conflicts of interest.

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