2014

**Congential Tritanopia: A Comparison of Two Clinical Cases**

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**Recommended Citation**
Kundart, James; Lundien, Emma; Mearsha, Ron; Pierce, Janice; and Kuhn-Wilken, Oliver, "Congential Tritanopia: A Comparison of Two Clinical Cases" (2014). *Faculty Scholarship (COO)*. 28.  
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Congential Tritanopia: A Comparison of Two Clinical Cases

Description
This poster discusses two patient cases of presumed blue-yellow color deficiency in order to help optometrists care for this rare class of patients. Since this condition is extremely uncommon at birth, and is not possible to see by looking in the eye, practitioners may miss the symptoms of this condition. Optical treatment options are also discussed.

Disciplines
Optometry

Comments
Poster file updated on 11.5.2014

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CONGENITAL TRITANANOPSIS: A COMPARISON OF TWO CLINICAL CASES
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ABSTRACT
This poster explores two cases of presumed blue-yellow color deficiency in order to help optometrists care for this rare class of patients. Since this condition is extremely uncommon at birth, and is not possible to see by looking in the eye, practitioners may miss the subtle signs and less subtle symptoms. Optical treatment options are also discussed.

SUBJECTIVE FINDINGS
Congenital tritan vision defects are an autosomal dominant genetic condition affecting 0.005% of Caucasian males. This translates to one in 20,000 patients. Two suspected blue-yellow color deficient cases are discussed below.

Patient #1 was a 32-year-old white male with a chief complaint of increased sensitivity to lights in both eyes, and headaches. Wearing sunglasses over his contact lenses was shown to reduce symptoms, but on further questioning, the patient reported substantial photophobia even with contact lenses. Ocular and medical histories were unremarkable, except the patient reported smoking less than one pack of cigarettes per day.

Patient #2 was diagnosed photophobia secondary to moderate to severe tritanomaly. This condition was presumed to be congenital, and was likely contributing to his headaches. Congenital color vision deficiencies are not expected to progress.

For patient #1, refractive testing revealed low myopia and 6th esophoria at near. A full exam and color testing was performed using the Optec 2000 and the patient scored a 3/5, and a 2/5 on repeat testing. Note that this color vision test is for red-green defects.

For patient #2, a manifest Rx: OD -5.00 -0.50 x 160 VA 20/15, OS -5.75 DS VA 20/20+1. Extracocular motilities were full, as was a screening visual field. Pupils were large, but equal, round and reactive to light, with no afferent pupillary defect. Intraocular Pressures were 15/15 @ 9:50 AM with an iCare tonometer.

Patient #2 was also tested with Short-Wavelength Automated Perimetry, also known as SWAP, or blue-yellow visual fields, which showed moderate depression in the mid-peripheral. Scanning retinal laser in the form of OCT (Optical Coherence Tomography) showed no thinning of any of the retinal layers. A retinal fundus photo and Cirrus OCT of the right eye is shown in Figure 2 and Figure 3.

CONCLUSIONS
For tritan patients, we suspect that the blue lenses acted as a neutral density (or gray) filter for the patient. This is because tritans see gray at 380 nm, which is the violet end of the visible spectrum.

For diagnosis, we recommend the following testing:
• Hardy-Rand-Rittler (HRR) testing is recommended, which includes screening and diagnostic pseudosochromatic plates for mild, moderate, and severe tritan defects.
• When available, SWAP (Short-Wavelength Automated Perimetry), or blue-yellow visual fields may yield additional information (see Figure 4, below).

For treatment, we recommend a blue tint to improve visual comfort. Blue-blocker (yellow) tints would we predicted to make their vision less comfortable, as was proven to be the case with patient #1.

LITERATURE CITED
2. http://commons.pacificu.edu/coofac/28/

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