Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/mjafi

Letter to the Editor

Use of red contact lens in dyschromatopsia

Colour perception is an important component of vision, more so in the armed forces, due to the exacting occupational requirements. Consequently, colour vision screening is meticulously carried out before entry is granted into the various branches of the armed forces. We recently came across a case of substandard colour perception who had been declared unfit at the initial medical examination, and had presented to us for re-evaluation (appeal medical board) for entry into armed forces as an officer. On preliminary evaluation at our centre, he could pass the initial screening test (Ishihara). This brought up the possibility of impersonation of candidates, which was ruled out based on photograph and signature of individual. The candidate was able to give many correct responses on Martin lantern test (MLT) at 1.5 m though he was unable to consistently identify the green targets.

On torchlight examination, the mystery was solved when a red coloured contact lens was found in his left eye. This was a soft contact lens on which a red colour was impregnated in the central area covering 4 mm with a clear peripheral zone (Figs. 1 and 2). On removal of the contact lens, the candidate was unable to correctly identify the plates on Ishihara chart as well as MLT and was thus classified as CP IV.

The incidence of congenital red–green colour disturbances in males is approximately 8%,¹ whereas it is less than 1% in females. Various grades of defective colour vision are found in the general population, which are a continuum; in essence, no two colour defectives are alike.² Therapeutic interventions for treatment of dyschromatopsia in the form of coloured contact lenses have been tried in the past.³ Our patient was wearing what looked like the Chromagen contact lens, though other details could not be elicited. The fact that the individual could pass the Ishihara test using this lens has led us to believe that there may be a case for exploring this therapeutic option further. This may potentially aid in functional rehabilitation of those personnel who are already trained and have joined service based on an erroneous initial medical evaluation and are later detected to have substandard colour perception not meeting the occupational requirements.

This case highlights the importance of a thorough ophthalmic examination when dealing with candidates who will make every effort to gain entry into the armed forces. Ophthalmic evaluation under good illumination and magnification is a must at the level of initial examination to avoid any errors.

This case also underlines the need for medical examiners to remain abreast with the current therapeutic modalities available to our dependent population.

Fig. 1 – Red contact lens.

Fig. 2 – Slit lamp image of contact lens.

REFERENCES

1. Shah A. Prevalence of Red–Green color vision defects among muslim males and females of Manipur, India. *Iran J Public Health*. 2013;42:16–24.
2. Squire TGRC, Evans ADB, Barbur JL. Color vision test for aviation: comparison of the three lantern test and the anomaloscope. *Aviat Space Environ Med*. Dec 2005;76:421–429.
3. Swarbrick HANP, Nguyen T, Pham P. The ChromaGen contact lens system: color vision test results and subjective responses. *Ophthalmic Physiol Opt*. 2001;21:182–196.

Gp Capt D. Joshi
Professor & Head (Ophthalmology), Command Hospital (Air Force),
Bangalore 560007, India

Sqn Ldr Avadhesh Oli*
Assistant Professor (Ophthalmology), Command Hospital (Air Force),
Bangalore 560007, India

*Corresponding author. Tel.: +91 (0) 9686634002 (mobile).
E-mail address: olieye@rediffmail.com

20 May 2014

Available online 24 November 2014

0377-1237/\$ – see front matter
© 2014, Armed Forces Medical Services (AFMS). All rights reserved.
<http://dx.doi.org/10.1016/j.mjafi.2014.07.009>