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Comprehensive low vision rehabilitation care for oculocutaneous albinism: A longitudinal case report

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Abstract. Low vision rehabilitation (LVR) is an on-going treatment that evolves as the needs of the patient grow. This case presents a longitudinal report highlighting the evolution of goals from glare relief to driving over the course of 15 years for a patient with oculocutaneous albinism. Telescopes for distance viewing, opaque-iris soft contact lenses for glare relief, and a bioptic telescopic spectacle for driving are discussed.

Keywords: Low vision rehabilitation; Oculocutaneous albinism; Telescope; Contact lens; Driving

1. Introduction

Oculocutaneous albinism is a heterogeneous group of inherited disorders characterized by varying degrees of hypopigmentation. Acuities typically range from 20/80 to 20/400. Ophthalmic signs include nystagmus, foveal hypoplasia, iris transillumination defects, and reduced stereopsis [1,2]. Low vision rehabilitation (LVR) care is an on-going treatment that evolves as the needs of the patient grow. LVR may address goals including glare relief, reading, distance viewing, and even driving, among others. This case presents a 15-year history of LVR for a patient (ER) with OCA. It emphasizes that LVR is not acute care, and that evolving visual objectives can be met with successful outcomes.

2. Case data: 1989 ER; 6 years of age; Kindergarten

ER presented to the clinic for LVR with a diagnosis of OCA and nystagmus. ER's mother expressed concern about the close proximity with which he held reading materials

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and picture books. Other concerns included having to move close to the chalkboard and photophobia outdoors.

A trial frame refraction revealed a compound hyperopic astigmatic prescription +4.00–2.50 × 180 OD with a visual acuity (VA) ranging from 10/40 to 10/100, and +3.00–2.50 × 180 OS with an acuity ranging from 10/60 to 10/100. Near VA was 0.08 m/0.8 M, which corresponded to roughly newspaper size print. Binocular vision assessment indicated a pendular nystagmus with a null point in primary gaze. A filter evaluation indicated a positive subjective improvement with a 70% grey tint filter, which alleviated glare and minimized color distortion.

ER and his parents were counseled about accommodation and the advantage of relative distance magnification in using a close working distance for reading. The family was reassured that ER's vision was adequate for the visual demands found in kindergarten. A single vision pair of 70% grey tint full-time spectacles were prescribed for relief of photophobia. The groundwork was laid for future LVR, and the family was counseled to expect additional goals as school demands increased.

2.1. 1993; 10 years of age; Grade 4

ER presented to the low vision clinic with a chief complaint of difficulty reading the standard print size in school. He also reported increased difficulty seeing the chalkboard. ER's parents expressed an interest in knowing ER's potential for driving and independence in the future.

A trial frame refraction revealed a decreased, compound hyperopic astigmatic prescription +2.75–1.75 × 170 OD with a VA ranging from 10/60 to 10/80, and +1.50–1.25 × 005 OS with VA of 10/80. Near VA was 0.05 m/0.8 M in each eye, though ER reported a preference for OD. Push-up amplitudes of accommodation were approximately 13D for each eye, and the estimated accommodative demand for his reading ranged between 10D and 20D.

A near evaluation indicated that with a +7.00D add ER read 0.05 m/0.8 M with increased comfort and no resistance to the close working distance. A distance evaluation with a 4 × 12 Specwell Hand-held Telescope (HHTS) enabled ER to see 10/20 OD. He demonstrated good spotting, focusing, and scanning ability after training. In coordination with his teacher for the visually impaired, the HHTS was used in the classroom.

The plan included a new bifocal Rx for constant wear with a +7D add in a round segment, a 4 × 12 HHTS for distance spotting in the classroom, and a grey Encore wrap-around filters for sunny days. ER and his family were counseled that driving could be an option in the future with appropriate training in the use of a bioptic telescopic spectacle (BTS). Lastly, the family was given contact information for the National Organization for Albinism and Hypopigmentation (NOAH).

2.2. 1996; 13 years of age; Grade 7

ER presented with difficulty reading the standard print size in school after prolonged periods, and increased problems with glare outdoors. ER was an avid soccer player, and was resistant to wearing sunglasses while playing. He reported using a closed circuit television (CCTV) in the classroom. However, ER did not like the telescope nor bifocal spectacles any more, and expressed concerns about cosmesis and fitting in socially.