Tinted Corneal Gas Permeable Contact Lenses For A Patient With Retinitis Pigmentosa

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Background

Retinitis pigmentosa (RP) includes a spectrum of chromosomal disorders and is enlisted as the most frequent hereditary dystrophy of the retina, affecting 1 in 3000 to 1 in 4000 individuals in the world.[1, 2] Patients with RP typically prefer filters that absorb wavelengths below 550nm, emitting an amber to red filter.[2] Oftentimes, patients with RP resort to spectacle wear for convenience, however contact lenses may be beneficial to minimize reflection of peripheral light from entering the side of the glasses, and provide improvement in overall cosmesis.

Case History

Patient Demographics: 62 year-old Black Female

Chief Complaint: Interested in corneal gas permeable (GP) contact lenses

HPI: decreased contrast sensitivity and increased glare, constant

Ocular History: Retinitis pigmentosa, diagnosed 27 years ago.

CLHx: Corneal GP, however discontinued 8 years ago since she noticed an improvement in vision, contrast and glare complaints secondary to cataract extraction.

SRx Hx: Tinted spectacles – prefers the gray, amber yellow and orange tint, depending on the brightness level of the day.

Case Details

Presenting VAs sc CL	OD: 20/60 OS: 20/125
Refraction	OD: +0.25 -0.50 x 150 OS: -0.50 -1.00 x 020
Keratometry readings	OD: 43.25 / 43.50 @ 055 OS: 43.25 / 43.75 @ 105
Contrast Sensitivity	OD: 63-1 OS: 63-1
Trial corneal GP	Paragon CRT diagnostic lens: colours yellow and red

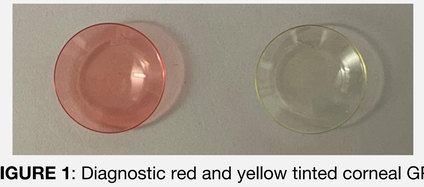

FIGURE 1: Diagnostic red and yellow tinted corneal GP lens

Assessment & Plan

- Improvement of subjective and objective contrast sensitivity and subjective decreased glare with red tinted lens
- Empirically order corneal GP lens with keratometry readings, manifest refraction, horizontal visible iris diameter with red coloured tint.

Follow-up with corneal GP

Chief Complaint: Patient returned after two months of wear, complaining of peripheral glare.

Changes made:

- Order a new set of corneal GP lenses with an increase in overall diameter from 9.3mm to 9.8mm.

	9.3mm Lens	9.8mm Lens
Presenting VAs cc CL	OD: 20/50 OS: 20/60	OD: 20/50 OS: 20/60
Contrast Sensitivity	OD: 63+1 OS: 63	OD: 63+1 OS: 50

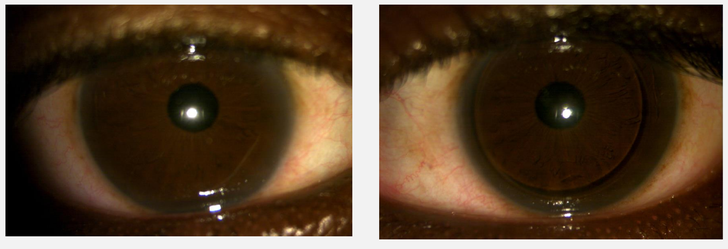

FIGURE 2: Right eye without (left) and with (right) red tinted corneal GP lens

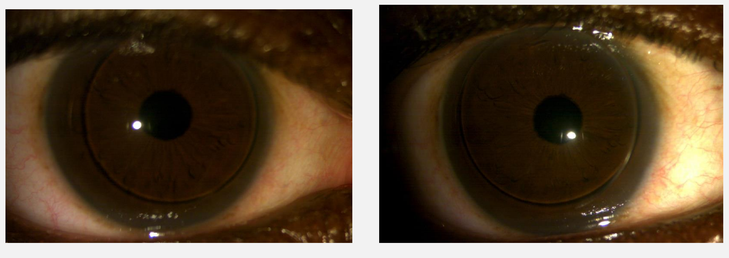

FIGURE 3: Comparison of OD with 9.3mm (left) and 9.8mm (right) lens

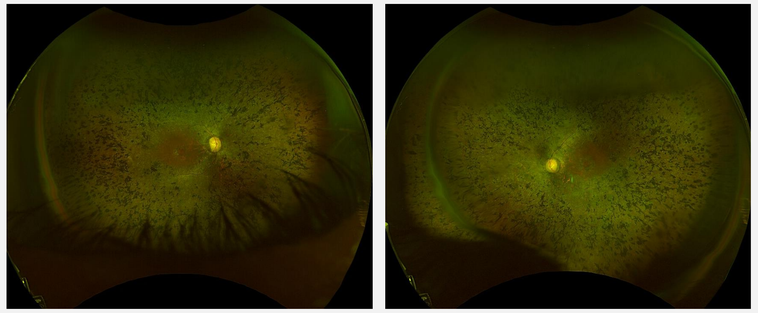

FIGURE 4: OptoMap photos of posterior pole OD (left) and OS (right)

Results

- The patient was successfully fit in a tinted corneal GP lens that improved contrast sensitivity and reduced her glare complaints.
- More coverage with a larger diameter corneal GP lens provided greater patient satisfaction and reports of subjective decreased peripheral glare.
- The patient was excited and motivated to try different coloured tints as this may meet both her functional and cosmetic expectations and needs.

Conclusion

- The use of tinted corneal gas permeable lenses may be beneficial to increase contrast sensitivity and reduce glare for patients with retinitis pigmentosa.
- Visual acuity is not the only measure that may affect activities of daily living and quality of life.
- Patients with retinitis pigmentosa may require multiple corneal GP tints to accommodate different needs.
- Tinted contact lenses may be an option for other pigmentary retinopathies with degeneration of photoreceptors.

References

1. Tsang SH, Sharma T. Retinitis Pigmentosa (Non-syndromic). Adv Exp Med Biol. 2018; 1085:125-130.
2. Carracedo G, Carballo J, Loma E, et. al. Contrast sensitivity evaluation with filter contact lenses in patients with retinitis pigmentosa: a pilot study. J Optom. 2011; 4(4):134-139.