

Multiple-Curve Design Contact Lenses for Keratoconus in Japanese Eyes

A Study of Rose K2 NC-prescribed eyes

Miki Sakata, M.D ^{1,2,3}

Shinjuku Eye Clinic¹ / Ryogoku Eye Clinic², Tokyo / Kozawa Eye Hospital and Diabetes Center³, Mito, Japan

Purpose

Lens selection, corrected visual acuity and changes in corneal topography were examined in Japanese eyes that were prescribed with the nipple-cone type Rose K2 NC lens.

Subjects

Fifty eyes diagnosed as nipple cone type or severe keratoconus were enrolled in the study and corrected visual acuities and changes in corneal topography were evaluated. The base curve (BC), power (P) and diameter (Dia) of their previous contact lenses were also examined.

Results

- BCs of the lenses prescribed were on average 0.48mm steeper than their previous lenses and consequently P differed by -4.78D. Dia was 0.11mm smaller than their previous lenses.
- In eyes where the previous lens was the Rose K2 lens (41 eyes), BC with the Rose K2 NC lens was 0.34mm steeper, P differed by -3.63D and Dia was smaller by 0.1mm.
- LogMar visual acuities improved significantly from 0.298 ± 0.270 to 0.195 ± 0.162 and in cases with previous Rose K2 use, visual acuities improved from 0.279 ± 0.27 to 0.187 ± 0.157 .
- Corneal topography varied widely and showed no particular pattern.
- Mean keratometric values steepened by 0.19 ± 1.24 mm in eyes prescribed with Rose K2 NC lenses.
- Mean keratometric values flattened by 0.12 ± 1.24 mm in 28 eyes where the Rose K2 lenses were changed to Rose K2 NC lenses.

Conclusion

The Rose K2 NC is an effective lens in improving visual function in patients with nipple cone type keratoconus and severe keratoconus. One factor in this may be the decrease in contact between the corneal protrusion and the posterior surface of the lens thereby improving the epithelium and comfort. From our data the preliminary base curve of choice should be 0.3~0.5mm steeper than the previous lens.

