Aspheric Keratoconus Design with a Piggyback for Comfort

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CASE HISTORY
LK a 40 year old male presented to the office stating: “I’m looking for a pair of contact lenses that fit good and feel good.” He stated that he was diagnosed with Keratoconus 3 years prior and felt like his eyes were allergic and itchy to RGP’s.

PERTINENT DATA
LK was wearing Preference Toric XR lenses
Visual Acuities:   OD: 20/40
                    OS: 20/50
Refraction:    OD:-4.50-3.75X075  20/40
                  OS:-6.00-1.75X098  20/30
Topography was performed and revealed inferior steepening OU
K-Values:    OD: 51.00@122 /46.37@032
              OS: 48.87@010 / 47.12@100
Slit Lamp was remarkable for vertical folds and staining in the inferior cornea OU.

DIAGNOSTIC FITTING SET
Valley I-Kone (Valley Contax Springfield, OR)
Standard Diameter: 9.6mm
Base Curves: 44.00-70.00 Diopters

CORNEAL TOPOGRAPHY

RESULTS
LK was fit with the Valley Contax (Springfield, OR) I-Kone lens. He was able to achieve the visual acuity that he desired but returned to the office due to comfort issues. A piggyback lens fitting was performed using low powered Acuvue Oasys (Vistakon, Jacksonville, FL) soft lenses under the Valley Ikone lenses previously fit. The patient returned to the clinic stating that his comfort had improved and that he was able to see better than his initial lenses. Final visual acuity was OD: 20/20 and OS: 20/20. He reported improved comfort and vision with the I-kone lens along with the soft piggyback lens.

FINALIZED LENS COMBINATION

OD:  
-12.50  
51.62D(6.54mm)  
9.6mm  
7.80mm, 9.00mm  
Boston XO

Valley I-Kone
Power
9.00mm

OS:  
-4.25  
49.25D(7.14mm)  
8.8mm  
7.80mm, 9.00mm  
Boston XO

Acuvue Oasys: -0.50/8.4/14.0

CONCLUSIONS
Aspheric keratoconus designs such as the Valley I-kone offer the ease of fitting and exceptional vision for keratoconus patients. Piggyback contact lens fitting has traditionally been a modality used as a last resort due to hypoxia from low Dk hydrogel lenses. With the addition of silicone hydrogel lenses into the market place, piggyback fitting should be considered for patients that are satisfied with their visual clarity, but discouraged with comfort issues.