

## CORNEAL SEGMENT RINGS BASED ON NEW NOMOGRAMS FOR KERATOCONUS: SURGICAL TECHNIQUE

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### INTRODUCTION

The surgical treatment of keratoconus has become a refractive procedure. Past surgical options and previous intracorneal rings implantation nomograms were “blind” treatments based on axial topography and anterior curvature. The results were measured simply in terms of corneal flattening, following the “rules” of Barraquer. The past years have brought the concept of quality of vision and aberrometry.

The **new nomograms** for intracorneal segments are based on **subjective refraction, the axial curvature, the aberrometry (coma), corneal asphericity and the location of the thinnest point** – it is the *ectasia phenotype classification era*.

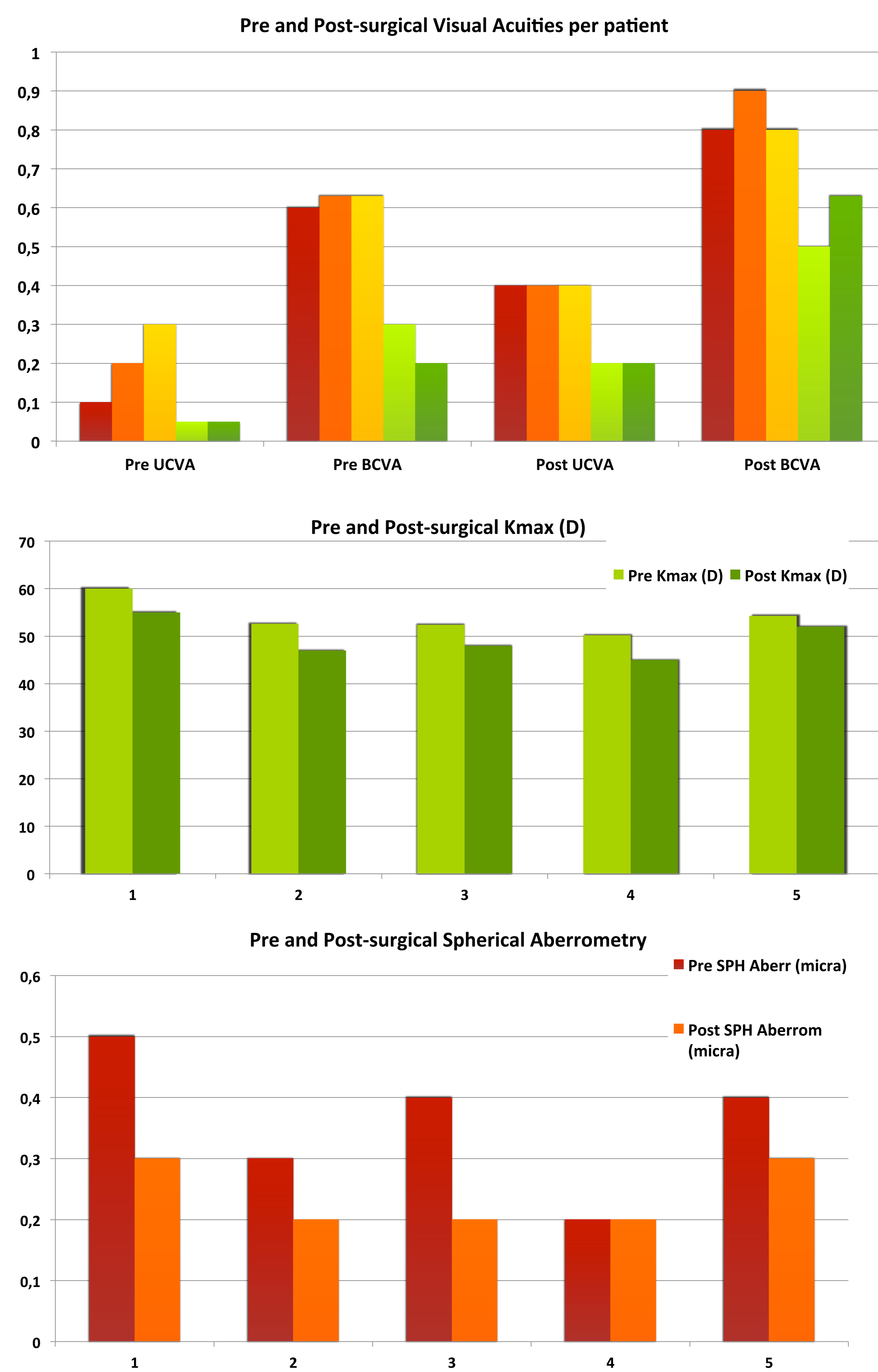
We can **combine different arc lengths and thickness** to provide the best approach depending on the ectasia phenotype.

### MATERIAL AND METHODS

Our **objective** is to present our surgical technique for intracorneal ring segments (ICRS) explanation and exchange for Ferrara® type segments; offering to patients previously treated in the past years with unimproved visual acuity the opportunity to improve uncorrected (UCVA) and corrected visual acuity (BCVA).

- Analytic, non-randomized, non-comparative, cohort and retrospective study.
- **Included** eyes: keratoconus eyes previously treated with INTACS® ICRS; previous follow-up of 12 months or more after the first surgery, no gain of BCVA after the first surgery and no progression of the ectasia.
- All eyes were **submitted** to Ferrara® ring segment implantation 6,00 mm optical zone using the previous corneal tunnels created for the Intacs SK® (6,00 mm optical zone).
- **Main Outcome:** 3 months of follow-up; pre and post-surgical UCVA and BCVA, keratometry and aberrometry parameters.

### RESULTS



### CONCLUSION

- The new nomograms for ICRS are more adequate to improvement of keratoconus stabilization and refractive results.
- Different arc lengths and thickness combination of Ferrara rings lead to a better combination based on more topographic parameters.