Modified Ruiz procedure for reducing high astigmatism after penetrating keratoplasty.

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Abstract

PURPOSE: To evaluate the refractive, keratometric, and visual outcomes of a modified Ruiz procedure in patients with high astigmatism after penetrating keratoplasty (PKP).

METHODS: Retrospective cohort study with 26 eyes of 24 patients. A modified Ruiz incision pattern was used. Two paired arcuate incisions, centered on the preoperative cylinder axis, were performed over 2 o'clock hours (60 degrees) within the graft. The median optical zone was 4.5 mm (range, 3-5 mm). Subsequently, 4 radial cuts were made. The depth of all cuts was 90%-95% of the central corneal thickness. The follow-up time was 3 months.

RESULTS: The mean preoperative subjective cylinder was 8.75 +/- 3.05 D, decreasing to 5.31 +/- 3.12 D postoperatively. Three months after the procedure, 53.8% of the eyes had <5.0 D of refractive astigmatism and 47% of eyes had <5.0 D of keratometric astigmatism. For the refractive data, the mean correction index was 1.95; the mean index of success was 1.27. The mean reduction in spherical equivalent was 1.95 D (60.5%). The mean best-corrected visual acuity (BCVA) was 0.61 and did not change significantly. Three eyes gained 2 or more lines of BCVA, and 1 eye lost 2 or more lines of BCVA. There was no difference in subgroup analysis of eyes treated with 4- (13 eyes) or 5-mm (12 eyes) optical zones.

CONCLUSIONS: The modified Ruiz procedure is an effective method to reduce high astigmatism after PKP. However, the results were widely scattered, and the patients need to be informed about the unpredictable outcome and its consequences.

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