

## **PAIRED ARCUATE KERATOTOMY INCISIONS TO CORRECT HIGH POST-KERATOPLASTY ASTIGMATISM**

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**Purpose:** To evaluate the outcomes of paired arcuate keratotomy incisions to correct high astigmatism after penetrating keratoplasty. **Methods:** In this prospective interventional case series, 24 eyes of 23 patients operated between October 2011 and January 2015 were included. Paired arcuate incisions at a 80-90% depth, and arc lengths of 60 to 90 degrees were performed with a diamond knife. Incisions were placed within the corneal graft. Results were analyzed at the third month. **Results:** Mean age was 48.6. Eleven were male and 12 female. Primary indication was keratoconus in 14 eyes, stromal dystrophy or leucoma in 8 and bullous keratopathy in 2. Macroperforation requiring suturing occurred in 1 eye. Mean topographic astigmatism decreased from  $7.6 \pm 3.3$  (3.4-12.0) D to  $6.0 \pm 3.3$  (0.9-10.3) (P=0.124). Mean flat K increased  $40.8 \pm 3.9$  (32.0-48.0) D to  $43.8 \pm 4.0$  (37.6-51.7) postoperatively (P=0.023). Mean steep K decreased from  $48.8 \pm 3.3$  (42.8-56.6) D to  $48.3 \pm 3.6$  (42.2-55.3) (p=0.981). Mean preoperative central corneal thickness was  $554 \pm 48.9$   $\mu$  (485-700). Mean spherical equivalent increased from  $-2.7 \pm 2.1$  (-6.5 - 1.5) D to  $-3.2 \pm 3.4$  (-8.5 - 1.0) (p=0.509). Mean uncorrected visual acuity improved from  $1.1 \pm 0.3$  (0.5-1.5) logMAR to  $0.9 \pm 0.4$  (0.3-1.5) postoperatively (P=0.009). Best spectacle-corrected visual acuity improved from  $0.6 \pm 0.3$  (0.0-1.2) logMAR to  $0.5 \pm 0.20$  (0.1-1.0) (P=0.092). **Conclusions:** Although some improvement achieved in uncorrected vision, paired arcuate keratotomy incisions were resulted in undercorrection of postkeratoplasty astigmatism. Better surgical strategies are needed to achieve intended correction. **Financial Disclosure:** No.