Photorefractive Keratectomy and LASIK After Conductive Keratoplasty: Case Series

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Introduction

- Study question: Is LASIK or PRK safe and effective for patients who underwent prior conductive keratoplasty (CK)?

- Why perform LASIK or PRK following CK
  - The effect of CK regresses over time
  - LASIK or PRK offers a more permanent solution
  - Patient with remote history of CK now presenting for distance vision enhancement (astigmatism, post-IOL enhancement, etc.)

- Previous research on this topic
  - 1 case series of 20 eyes in the Philippines[1]
  - 2 case reports [2,3]
  - Both the case series and case reports suggest safety and efficacy of performing PRK or LASIK following CK

Methods

- Study type
  - Retrospective, noncomparative case series
  - Chart review
- Patient population
  - Charts of patients at a single clinic and single surgeon were examined
  - Patients who underwent CK from 2003-2012 were identified
  - Those who subsequently underwent LASIK or PRK for improvement of near vision were selected for inclusion in the study
- Primary outcomes examined
  - Visual acuity
  - Complications

Results

- 300 eyes received CK

Mean time between last CK and PRK/LASIK: 1.2 years

- 12 eyes received subsequent PRK or LASIK
  - Average number of CK treatments performed on this subset of 12: 2.85
  - 10 PRK, 2 LASIK
  - 6 right eyes, 6 left eyes
  - 5 male, 7 female
  - Average age at PRK/LASIK: 54
  - Average target of LASIK/PRK: -1.78

Results

- Follow-up time following PRK or LASIK: 5.2 months
- Major complications: No reported incident
- Ectasia: No reported incident
- Visual acuity
  - Improvement in uncorrected near vision visual acuity: 11 of the 12 eyes
  - No change in near vision visual acuity: 1 of the 12 eyes
  - Mean change in near vision visual acuity: -0.30 logMAR units

Conclusions

- Since no major complications were observed and visual acuity improved for all but one patient, the results suggest that PRK/LASIK is safe and effective following CK
- These results are consistent with prior research
- Limitations
  - Small sample size
  - No control group
  - Retrospective study
  - Short follow-up time

Citations

- 1. Felipe AF, Agahan AL, Cham TL, Evangelista RP. Photorefractive keratectomy using a 213 nm wavelength solid-state laser in eyes with previous conductive keratoplasty to treat presbyopia: Early results. *J Cataract Refract Surg.* 2011 Mar;37(3):518-24.
- 2. Klein S, Fry K, Hersh PS. Laser in situ keratomileusis after conductive keratoplasty. *J Cataract Refract Surg*. 2004 Mar;30(3):702-5.
- 3. Kymionis GD, Aslanides IM, Khoury AN, Markomanolakis MM, Naoumidi T, Pallikaris lG. Laser in situ keratomileusis for residual hyperopic astigmatism after conductive keratoplasty. *J Refract Surg.* 2004 May-Jun;20(3):276-8.