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Daniel S. MacKinnon

Thomas Jefferson University, daniel.mackinnon@jefferson.edu

Zeba A. Syed, MD

Thomas Jefferson University

Durga Borkar

Thomas Jefferson University, durga.borkar@jefferson.edu

Hannah Levin

Thomas Jefferson University, hannah.levin@jefferson.edu

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Recommended Citation

MacKinnon, Daniel S.; Syed, MD, Zeba A.; Borkar, Durga; and Levin, Hannah, "Effects of Corneal Transplant on Rates of Retinal Detachment" (2020). *Phase 1*. Paper 41.

https://jdc.jefferson.edu/si_ctr_2022_phase1/41

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SI/CTR Abstract

Effects of Corneal Transplant on Rates of Retinal Detachment

Daniel S. MacKinnon, Zeba A. Syed, MD*, Durga Borkar, MD, Hannah Levin.

Introduction: Corneal transplant remains the gold standard treatment for irreversible corneal damage. The purpose of this study is to evaluate retinal detachment rates and clinical outcomes after penetrating keratoplasty (PK) and endothelial keratoplasty (EK). We hypothesized that corneal transplants would increase the rate of RD.

Methods: This retrospective cohort study utilized corneal transplant data from all surgical visits from PK or EK between April 1, 2012 and August 31, 2018. Individual charts were reviewed from patients who had a subsequent retinal detachment. Incidence of retinal detachment following PK or EK was the main outcome measured.

Results: A total of 1,676 PKs and 2,292 EKs were performed for 3,069 patients during the study period. Fifty-four cases of retinal detachment occurred during the study period; forty-two cases occurred after PK and twelve cases occurred after EK. The rate of retinal detachment after EK (11 of 2,292; 0.5%) was significantly lower than that after PK (43 of 1,676; 2.6%) ($p = 0.01$). Additionally, the odds of developing retinal detachment after PK or EK performed in conjunction with anterior or pars plana vitrectomy were significantly higher than after either PK or EK alone (OR: 8.66; 95% CI: 2.98-25.18; $p < 0.001$).

Discussion: Overall rates of retinal detachment for individuals receiving either PK or EK were low. Rates of retinal detachment were significantly lower for EK compared to PK. These results support our hypothesis and can help patients make informed decisions on their surgical options and associated risks.