

19th Global Ophthalmology Summit

February 26-27, 2018 | Berlin, Germany

The prognosis of keratoplasty after previous graft failures in adults

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Statement of the Problem: The present study provides insights into the contributions of indications for initial keratoplasty to repeat penetrating keratoplasty (PKP), and provides valuable prognostic information that will assist ophthalmologists and patients in making the decision as to whether or not to proceed with another attempt after graft failure.

Purpose: The purpose of this study is to determine graft survival and visual outcome after repeat PKP.

Methodology & Theoretical Orientation: Retrospective review of the medical records of patients who underwent repeat PKP between 1st January 2007 and 31st December 2011. Exclusion criteria were initial keratoplasty performed elsewhere, previous lamellar graft, a clear graft with follow-up <1 year, third and further re-grafts, and age <18 years.

Findings: Out of 226 repeat PKP performed, 85 repeat PKP (of 85 patients) were included. The median age at the time of re-graft was 59.2 years (range: 21.8-86.1). The most common cause for performing initial PKP was bullous keratopathy (35.3%) followed by keratoconus (23.5%) and therapeutic/tectonic (T/T) graft (20%). Median follow-up was 63.5 and 30 months for clear and failed graft, respectively. Failure was due to recurrence (36.5%) and rejection (49%). Secondary glaucoma ($p=0.001$) and corneal vascularization ($p=0.01$) were the most common risk factors associated with rejection. Overall five-year survival rate was 46%. The best graft survival was in eyes with an original diagnosis of keratoconus (80%) and the worst was in eyes with T/T grafts (11.8%). Visual acuity $\geq 20/60$ was achieved in 28% in the first year and 19% at five years. Poor vision <20/200 (27%) were mainly associated with the presence of glaucoma, corneal ulcer, retinal detachment, and optic nerve atrophy.

Conclusion: Although the prognosis for repeat PKP is poorer than that of initial PKP, reasonable outcomes can be obtained with repeat PKP with careful case selection.

Recent Publications

1. Nasser Al Sabaani, Salem Al Malki, Mohanna Al Jindan, Abdullah Al Assiri and Samar Al Swailem (2016) Femtosecond astigmatic keratotomies for postkeratoplasty astigmatism. Saudi J of Ophthalmol. 30(3):163-168.
2. Samar Al-Swailem, Zhenhua Xu, Lijuan Wu, Matt Hartsock, Samuel Yiu, et al. (2014) Induction of endothelial RAGE expression in pterygium. Molecular Vision Journal 20:1740-1748.
3. Ammar M Al Mahmood and Samar A Al-Swailem (2014) Essential fatty acids in the treatment of dry eye syndrome: a myth or reality? Saudi J of Ophthalmol. 28(3):195-197.
4. Samar A Al-Swailem (2014) Refractive surgery: the never ending task of improving vision correction. Middle East Afr J Ophthalmol. 21(1):1-2.
5. Ammar M Al Mahmood, Samar A Al-Swailem and Ashley Behrens (2014) Clear corneal incision in cataract surgery: review article. Middle East Afr J Ophthalmol. 21(1):25-31.

Biography

Samar Al-Swailem is a Senior Consultant in Cornea, Cataract and Refractive Surgeries. She currently holds the position of Chief of Anterior Segment Division, Chair of HE/IRB Committee at King Khaled Eye Specialist Hospital in Saudi Arabia. She is an Editorial Board Member of the *Middle East African Journal of Ophthalmology*. She participates in the training of residents/fellows and in the Scientific Organizing Committee of the World Ocean Council and Sustainable Ocean Summit. She is involved in several projects including KKESH-Johns Hopkins Clinical and Translational Researches, with a focus on keratoconus, OSD, dystrophies, deep anterior lamellar keratoplasty and tumors. She has more than 20 scientific publications and has given presentations at 33 international meetings. She has received many awards including "Exceptional Physician-Year 2015-KKESH", "Best Research-Year 2005-SOS" and "Most Productive Department Head" in taking corrective actions and preventive action towards patient safety incidents 2016-KKESH.

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