New Frontiers in Corneal Transplantation

Corneal Transplantation: Where we’ve been, where we are, and where we’re going
Mark A Terry, MD

Reasons for corneal transplants in US
Problems with the endothelium with swelling:
  • Fuchs’ corneal dystrophy
  • Pseudophakic Bullous Keratopathy
  • Failed Corneal Transplant with Failed Endothelium
Problems with shape or scarring:
  • Keratoconus
  • Corneal Scars
  • Other
Penetrating Keratoplasty – full thickness surgery
  • Procedure
  • Complications
The Evolution of Endothelial keratoplasty
  • DLEK >> DSAEK >> DMEK >> DMAEK
Current Status
DLEK
  • Procedure
  • Results
  • Limitations
DSEK/DSAEK
  • Procedure
  • Results
DMEK
  • Procedure
  • Results
  • Contraindications
Quality of Vision after Lamellar Keratoplasty
Cristina Schnider, OD

Corneal Topography & HOAs (higher order aberrations) in lamellar keratoplasty
- PK
- DALK
- DSAEK
Corneal scatter

Corneal Donor Button Considerations in Corneal Transplantation
Loretta Szczotka, OD

Previous NIH funded trials in Corneal
- Collaborative Corneal Transplantation Studies (CCTS)
  - Donor recipient histocompatibility matching
- Cornea Donor Study (CDS)
  - Donor Age examined
- Cornea Preservation Time Study (CPTS)
  - Examined effect of length of time in corneal preservation medium

CPTS STUDY
- Non-inferiority study
  - Hypothesis: donor corneas stored between 7-14 days are just as viable as
donor corneas stored between 0-7 days
    - Outcomes
      - graft failure
      - endothelial cell density
  - 1330 surgeries across 40 clinical sites
  - CWRU-Jaeb Clinical Research Center Collaboration
- Baseline findings
- Eye Bank Impact Study Findings
- Pre-CPTS Corneal Surgeon Survey Findings with regards to attitudes on Corneal
  Preservation Time
Contact Lens Management of the Ectasias
Louise Sclafani, OD

PRIOR TO CORNEAL SURGERY
- Indications
- Lens Options
- Alternative Treatment
  - Cross-Linking
  - Intacts
  - Pharmaceutical

POST-OPERATIVE Treatment with LENSES
- Timing
- Management of Astigmatism
- Lens Options based on Procedure Performed

Corneal Transplantation: rejection & inflammation – how/why/how often it happens, how to recognize it, what to do about it.
Victor L Perez, MD

Outline:
- Review of the Immunology of Corneal Allo-transplantation.
- Update on Immune mechanisms of corneal transplantation
- Risk factor for corneal transplant rejection.
- Diagnosis of corneal allograft rejection: basic clinical concepts and novel diagnostic modalities.
- Treatment and Prevention of Corneal Transplant Rejection: From the bench to the bedside. Use of standard and novel therapies.