SURGERY WAS THE EASY PART
Managing Post-Surgical Corneas with Specialty Contact Lenses
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Today’s Checklist
- What might walk in my door?
- Challenges of post-surgical corneas
- Evaluating a new patient
- Choosing the first lens
- What are my contact lens options?
- Tips on fitting a post-surgical cornea
- Communicating and contact lenses
- What if MY patient needs surgery?
- Post Op Care

Filet O’Cornea...
Corneal Procedures Needing Our Expertise

What am I even looking at?
Corneal procedures
- Corneal transplant
- Radial keratectomy

Bumps in the road, literally...
Challenges of Fitting Post-Surgical Corneas

Bumps in the Road
- As centered as she gets...
- Don’t even get me started!

Where do I start?
Initial Evaluation of a Post-Surgical Cornea
- Case History
  - Indication for procedure
  - Type of surgery performed
  - Date of procedure
  - Previous experience with contact lenses
- Visual Acuities / Quality of Vision
- Topography
  - What if I don’t have a topographer?

Where do I start?
Initial Evaluation of a Post-Surgical Cornea
- Slit Lamp Examination
  - Lids: Positioning
  - Corneas: Scars, location and number of incisions, neovascularization, corneal staining
- Refraction, if able
  - Baseline and insurance purposes
- Other thoughts
  - Dexterity to handle contact lenses
Fire up the fluorescein!

Choosing the initial trial lens

SELECTING THE FIRST LENS
- Talking to the patient
- What a concept
- Topographical pattern
- Area of affected cornea
- Oblate / Prolate
- Choosing Lens Design
  - Spherical lenses
  - Reverse Geometry
  - Advanced designs

SELECTING THE FIRST LENS
- Base Curve Selection
  - Using Sim-K's
  - Manual keratometry
  - Auto refraction/keratometer
- Thoughts on Simulated Keratometry
  - Darts, anyone?
  - Fixation, tear film and funky corneas

Holy Toricity Batman!

How do I fit 15D of corneal toricity?

Answer: You don't.

Lens of Choice
- SOFT CL
- SMALL DIAMETER GP

Lens of Choice
- INTRALIMBAL DESIGN
- REVERSE GEOMETRY INTRALIMBAL

Lens of Choice
- MINI-SCLERAL GP
- SCLERAL GP

Lens of Choice
- QUAD SPECIFIC DESIGNS
- HYBRID DESIGNS

FINALLY! JUST PUT A LENS ON!

Evaluating Post-Surgical Fluorescein Pattern

www.lensdynamics.com

Specific population, O2 concerns, Unlimited options
Challenges of Fitting Post-Surgical Corneas

- Patient apprehension and frustration
  - Thought they were “cured.”
- No two are the same
  - No rules... only guidelines.
- Achieving “alignment”
  - “It’s an oblate world now!”
- Centration
  - Isn’t it always an issue?

Corneal Transplants

- 6 to 9 mm area of donor tissue
- Typically cut with a trephine
- Positives of Trephine use:
  - Clean, smooth incision
- Negatives of using a Trephine:
  - Minimal surface area between graft and host
  - Sutures left in longer

Corneal Transplants

- Corneal Transplants provide an optically clear surface!
- But, the surface is often irregular

Corneal Transplants

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Corneal Transplant Post Ops

- So the surgery is done.... Now what?
  - 1 Day Post Op
    - Epithelium is nearly gone, so patient will be in a fair amount of discomfort
    - Antibiotic, NSAID and high frequency topical steriod will be prescribed
    - Many will have oral prescriptions for pain control

Corneal Transplant Post Ops

- So the surgery is done.... Now what?
  - 1 week and after...
    - Periodic topographies
    - Taper steroid to qDay, many stay on one drop per day for one year or more
    - CL fitting anywhere between 6-12 weeks
Fitting Tips and Tricks

Corneal Transplant

- So the surgery is done... Now what?
  - Establishing a patient relationship
  - When to begin fitting?
  - What contact lens options are available?

Patient relationship
- Expect some anxiety
- Stay loyal to the surgeon - we are a team!

Outline the process
- Fitting
- Exchanges
- Go for the best vision while maintaining the 'healthiest fit'

Contact lens options for corneal transplants
- Reverse geometry GP's
- Mini-Scleral and Scleral

Corneal Transplants

- It's an oblate world now!

Reverse Geo GPs
- Gas Permeable Corneal lenses
- No rules! Only guidelines.
- Relatively comfortable for those already adapted for GPs (keratoconus patients)

Fitting sets work great, many sets have different amounts of reverse curvature
Larger in diameter than corneal GPs for normal corneas

Scleral lenses
- No longer the new kid on the block
- Often a front runner in lens choice due to large amount of irregularity in corneal shape
- Excellent choice for those who struggled with GP comfort prior to surgery

Bumps in the Road

The same, but different
Call it alignment, call it a day...

Systemic Scleroderma
Corneal Transplants

It’s an oblate world now!

3 Step Evaluation

- Apical relationship
  - Goal is complete corneal clearance
- Limbal clearance
- Landing curves and scleral alignment
  - Impingement / blanching
  - Edge lift

Scleral Lens Fitting

Apical Relationship

How much clearance?

Scleral Lens Fitting

Limbal clearance vs. limbal touch

Corneal Transplants

Healthy Scleral Lens Wear

Must Haves

- Complete clearance of graft and host tissue
- Proper solution/saline use
- Appropriate wearing time

DO NOT SACRIFICE HEALTH FOR VISION OR COMFORT!

Scleral Lenses and Delicate Corneas

Post-Refractive Surgery

Corneas after RK:
- Often oblate in shape with a shallow/sunken central cornea
- CL fits can get messy!

Consider reverse geometry and scleral contact lenses to help with centration and stability.

Reverse geometry SCLs are available.

Post-Refractive Surgery

Like I said… these fittings get messy!

Reverse Geo GPs:

Clinical Pearls

- Larger optic zones help lens centration by ‘reaching’ past irregular and sunken areas
- You will rarely achieve ‘alignment’ – just minimize areas of harsh bearing

RK patients experience vision fluctuations during the day due to diurnal changes in IOP. Vision changes are negated or minimized with scleral lenses due to the tear layer compensating for corneal changes.

Thoughts on Post LASIK presbyopia and Post LASIK regression lens fitting

- Set Expectations
- There may be some frustrations
- Several lens options: Soft lenses, custom soft lenses, Gas Perm (more reverse geometry), hybrid, scleral lenses
- All are available in a multifocal design
- Centration and Stability is key!
Post-Refractive Surgery

Post LASIK Ectasia

Post 1 year later

She ended up having a transplant done
with a femtosecond laser... and had
amazing results.

- Use of Riboflavin (Vitamin B2) drops in combination
  with UV-A light
- Goal is to increase the strength of the corneal tissue
to decrease the risk of progression of KCN
- Numerous studies showing effectiveness, still waiting
  FDA approval in USA
- Many centers are performing the procedure and
  gathering information for more studies

Corneal Cross Linking and Contact Lenses

- Two procedures:
  - Epithelium On and "Epithelium Off"
  - What’s the difference?

- Epi-Off Procedure:
  - Need to wait until cornea is fully re-epithelialized
  - Procedure carries similar risks of PRK
    - Corneal haze
    - Slower healing
  - May want to check CL fit about 6 weeks post-op to
    see if any changes need to be made
  - Some flattening may occur

- Epi-On Procedure:
  - We recommend to our patient to wait 3-4 days
    before wearing their habitual CL's
  - Again, should be watched over the course of 6 weeks
    and then yearly for refitting needs
Other Surgical Options

Intacs

Goal: Add support to the thinned and steepened area of the cornea, to decrease irregular astigmatism.

Why CLs after Intacs?
- Great vision, sometimes even with soft torics!

Why wouldn’t we do contact lenses?
- It’s a complex fit
- May need a piggy back system for comfort
- More sensitive?

Intacs: When should they be used?
- Optimal patients:
  - Low myopes (spherical equivalent)
  - Visual Acuity through a GP lens worse than expected based upon the clarity of the cornea and stage of disease
- Less than optimal:
  - Hyperopes (will make them more hyperopic)
  - High Myopes (will not benefit from mild reduction in myopia)
  - Those with 20/20 BCVA with a GP lens

Contact Lens Options for Intacs
- Soft Toric lenses
- Custom soft toric lenses
- Corneal GPs
- Scleral Contact Lenses
- How do we choose?

JUST PUT A LENS ON!

Breaking Down the Fluorescein Pattern

- “Apical” relationship
  - Bearing and bubbles
- Mid peripheral and peripheral clearance
- Centration
- Movement
- Just keep trying…

JUST PUT A LENS ON!

Breaking Down the Fluorescein Pattern

- Mid peripheral and peripheral clearance
  - Is the lens resting on a central raised region?
  - Is there a “sunken” part of the topography?

JUST PUT A LENS ON!

Breaking Down the Fluorescein Pattern

- Centration
  - My first adjustment is a diameter change
  - Usually go bigger, then steeper BC / PC’s
  - Pay attention to lid interaction forcing decentration

JUST PUT A LENS ON!

Breaking Down the Fluorescein Pattern

- Movement
  - Often goes with centration
  - Bigger OAD and steeper BC to decrease movement
  - Smaller OADs and flatter BC to increase movement and facilitate tear exchange
**JUST PUT A LENS ON!**

After determining best trial lens

- Over Refraction
- Lens Stability
- Lid interaction
- Time for a phone call…
  
  **“1 – 800 – CONSULT”**

**Communicating and Contact Lenses**

- Talking to your consultants
  - Understand their terminology
  - Become friends!

- Talking to your patients about contact lenses and the fitting experience
  - Adaptation, it’s the lid! Choose your words wisely!
  - Health
  - Caring and Handling – annual, expensive lenses
  - Follow ups – see ya next week!

**What if MY patient needs surgery??**

- Who might need it?
  - Good and bad candidates
  - Be the RIGHT source of information (vs the internet)
  - Stay current!

- When is the right time?
- Where do I send them?
  - Options are a good thing: insurance, bedside manner

**ULTIMATELY:** It’s a decision made together!!

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**What if MY patient needs surgery??**

- Who might need it?
  - Good and bad candidates
  - Good Candidates
    - Patient with decreased BCVA in a GP lens
    - Interrupting daily activities like driving and work
    - Healthy patients
    - Have a support system at home
    - Will need transport for a while…

**ULTIMATELY:** It’s a decision made together!!

**What if MY patient needs surgery??**

- Who might need it?
  - Good and bad candidates
  - Not So Candidates
    - Good VA in CLs – patient is “just tired of wearing them”
    - Many patients still end up in CLs (as we’ve seen)
    - Concurrent Retinal Issues / Amblyopia
    - Is the gain in peripheral VA worth the cost, discomfort and time?

**ULTIMATELY:** It’s a decision made together!!

**What if MY patient needs surgery??**

- When is the right time?
  - Depends on the surgery
    - Transplant vs Cross Linking

- How quickly is the patient changing?
  - Are you suspicious? Keep them on a short leash.

- Binocular vs Monocular Vision Changes

**ULTIMATELY:** It’s a decision made together!!

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**ULTRA-OPERA-TIVE CARE**

- Recent Surgery?
  - When is it?
  - What medications are being used and how often?
  - Is the cornea stable enough to select a CL design?

- Not-so-recent
  - Ready for CLs
Post Operative Care

- Contact Lenses and Surgical Corneas
  - Delicate tissues
  - Don’t mess with graft-host junctions
  - Adequate O2 is a must
  - Especially with PKP’s wearing sclerals
  - Corneal rejection possibilities

Post-surgical corneas

- "My heart’s beating fast..."
- "I can’t sleep..."
- "Am I in lodover?"

- "Tell you later..."
- "Tell your contact lens doctor..."
- "Tell your doctor..."