Cataract Surgery in the Setting of Corneal Disease

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Dysfunctional Tear Syndrome
Epithelial Basement Membrane Dystrophy (EBMD)
Pterygium/Corneal Nodules
Upper Eyelid Chalazion

Maybe she's just dry because of dilating drops...
Goal: Prepare ocular surface for IOL calculations and sustain a healthy surface

- Slit Lamp Exam
- Tear break up time
- Placido imaging
- Tear Osmolarity/MMP-9
- Meibography

Courtesy of Elizabeth Yeu, MD
Goal: Prepare ocular surface for IOL calculations and sustain surface

**Treatment**

- Preservative free drops
- Lid hygiene/thermal pulsation/omega 3
- Steroid pulse in preparation for:
  - Cyclosporine 0.05%-0.1% BID
  - Lifitegrast 5%BID
- Consider nighttime ointment if exposure pattern of stain
- Recheck 2-4 weeks
If recalcitrant...consider a self retaining amniotic membrane

Before

After

46.85

43.44

Courtesy of Elizabeth Yeu, MD
The heartbreak of the cataract evaluation
Epithelial Basement Membrane Dystrophy (EBMD)

HPI:
- 67 year old surgeon having difficulty operating

Exam:
- BCVA 20/60 OU
- SLE:
  - 4+NS OU
  - EBMD in the visual axis!!!!!

Plan: Superficial Keratectomy with Diamond Burr +/- Self Retaining Amniotic Membrane v BCL

Do I really need to “scrape” the cornea?

Pre-Superficial Keratectomy

Post-Superficial Keratectomy

20.0D rec & 2D of Cyl

19.5 D & 0.75D of Cyl

Why did I look under the lid?
HPI
• Told she would need a Toric IOL

Exam
• SLE:
  • 2+ MGD
  • Salzmann’s nodule
  • Rapid TBUT
  • Fluctuating vision

Salzmann’s Nodules
Superficial Keratectomy

Wait 6-8 weeks for cornea to stabilize prior to IOL calculations.
Pre-op Topography
5D astigmatism

Post-op Topography
0.75D astigmatism
“Doc... can you just do the cataract?”

Minimal Topographic Changes
Consider cataract surgery alone

Flattening on Topography
Sequential removal of pterygium and wait 3 months until surface is healed and then proceed with cataract surgery

Remember…not all nodules are benign…

Watch out for temporal pterygiums and r/o conjunctival intraepithelial neoplasia (CIN)
1. Use SLE and Placido imaging to evaluate ocular surface disease contribution

2. Use at least two tools to confirm axis and magnitude (Topography, Biometry, etc)

3. Don't stay in denial!!! Speed to surgery does not equal success
Cataract Surgery after 12 cut Radial Keratectomy (RK)
Cataract Surgery and Radial Keratotomy

Preop considerations
- Repeat Measurements
- Take flattest K
- Time of day
- ASCRS calculator
- 4 cut=aim -0.75
- 8 cut= aim -1.50
- 12 cut=aim -2.00
- 16 cut= aim -2.50

Intra op considerations
- Caution with intraoperative aberrometry
- Trypan blue
- Mark cuts prior to incisions
- Caution with femto- watch for skip areas on capsulotomy

Post-operative considerations
- hyperopic initially (corneal edema and flattening
- wait for topography to return to pre-op prior to final refraction
72 y/o female with Fuchs Dystrophy and 3+ nuclear sclerotic cataract

BCVA 20/80
pachy 753 microns
3+ NS; RAM 20/40
confluent guttae; 3+ Descemet’s folds
Pre-Operative Consideration

History

• Morning blur

• Tolerance of staged surgery
Pre-Operative Consideration

Key Exam Elements

- Anterior Chamber Depth
- Pachymetry
  - 650 microns cutoff
- Extent of guttae
  - Central/Confluent
  - Diffuse/scattered
- Extent of bullae and corneal edema
  - Can you see to do the cataract surgery?
  - Will the IOL calculations be reliable?
Preoperative: Corneal Topography

Surgical Plan: Phakic DMEK
Phakic DMEK
Post-DMEK: Corneal Topography

Plan: CE/PCIOL SN6AT6
Pre-DMEK

Pachy 750 microns

Plan:
CE/PCIOL
SN6AT9

Post-DMEK

Pachy 534 microns

Plan:
CE/PCIOL
SN6AT4
Visually significant cataract and Fuchs Dystrophy

Morning Blur? "normal pachy"

Yes

No

Pachy > 650 microns with edema

K’s may not be reliable

Diffuse

Central and confluent

Consider staged CE/PCIOL or combined DMEK/CE/PCIOL

Consider CE/PCIOL alone with proper counseling

Consider Phakic DMEK or combined DMEK/CE/PCIOL aim more myopic -1/50 rather than -0.75

combined DMEK/DSEK with CE/PCIOL

consider primary descemetorhhexis followed by CE/PCIOL

Extent of Guttae
Thank You!

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