Cataract surgery in patients with Salzmann’s Nodular Degeneration, Pterygium, and Anterior Basement Membrane Dystrophy

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Disclosures

• Consultant: Bausch + Lomb
Case Presentation

- 65 year old man wishes to correct his high astigmatism
- He has early stage cataract and pterygia OU
- MRX: OD -3.25 + 3.75 x 70
  OS -3.25 + 4.00 x 95
Case Presentation
Case Presentation

- What procedures are advised?
- In what order are the procedures performed?
- How long do you wait in between procedures?
Case Presentation

• Pterygium results in high corneal astigmatism, which typically decreases to an acceptable level following excision

• Yaycioglu et al. : Astigmatic values decreased from $3.47 \pm 2.50$ D to $1.29 \pm 1.07$ D

• Changes in astigmatism significantly related to the preoperative size of the pterygium

Case Presentation

• Pterygium surgery is associated with significant changes in the front and back corneal surfaces
• Front corneal astigmatism decreased from 3.97 +/- 4.49 D preop to 1.23 +/- 1.88 D post op
• Back corneal astigmatism decreased
• Refractive cylinder reduced significantly

Case Presentation

- The “with-the-rule” astigmatism induced by the pterygium may become “against-the-rule” astigmatism after removal
- Successful pterygium surgery reduces corneal astigmatism and improves topographic irregularity

Case Presentation

- Pterygium removal may largely reduce ocular aberrations.

- Ocular aberrations were all found to be higher in patients with pterygia compared to normal subjects.

Cornea. 2011:30(1) 24-29
Case Presentation

• Pterygium excision OU is first procedure
• Healing is typically 6-8 weeks before refractive stability is achieved (may be longer)
• An unpredictable amount of astigmatism may persist after pterygium removal and impact IOL power
ABMD

- The anterior cornea surface is an important refractive interface
- Corneal opacities and irregularities can cause substantial vision loss
- The lesions may appear disarmingly mild but cause a substantial loss of vision
The decrease in vision is from irregular astigmatism and abnormal tear film breakup that is induced by epithelial irregularity in the dystrophic area.
ABMD
ABMD
ABMD

• Treatment of ABMD often involves both superficial keratectomy and either diamond burr polishing (DBSK) or PTK
• Both PTK and DBSK can result in either a hyperopic or myopic shift
• Epithelial debridement alone changes the topographic profile of the cornea altering astigmatic values
• Treatment of ABMD should be done PRIOR to cataract surgery to get accurate IOL calculations
SND

- Bluish-white nodules raised above the cornea surface
- Idiopathic, associated with hx of inflammation, hx of pre-existing cornea disease
SND

- Treatment involves removal of the nodules
- Nodules may be located centrally or peripherally in the cornea
- A change in refractive sphere and cylinder will occur with removal
- Cataract surgery performed AFTER nodule removal (wait 1-3 months for IOL calcs)
Summary

• Corneal pathology may significantly impact IOL power

• Patients with corneal pathology should have the pathology addressed prior to cataract surgery for a more accurate IOL selection