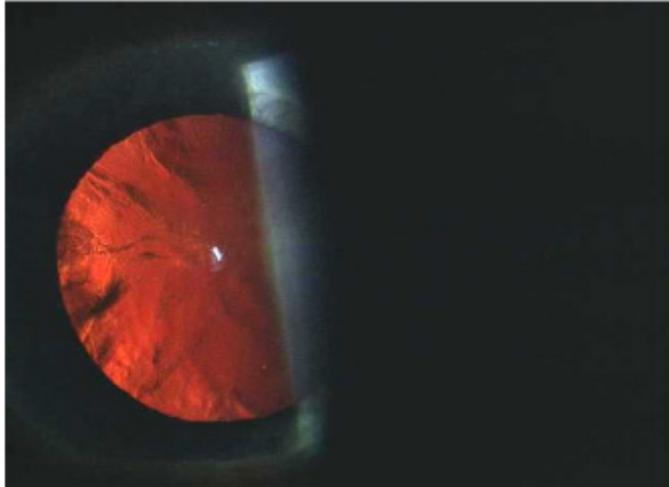


CASE 15

NOTES

A 62 year-old white male presents with the complaint of gradually decreasing visual acuity in both eyes.



Data acquisition:

Describe the findings in the photo:

Corneal guttata.

What additional history would be helpful based on the picture?

1. Is the blurred vision worse upon awakening in the morning and does it gradually clear?
2. Any time when there is sudden sharp pain and foreign body sensation? (suggesting epithelial edema with ruptured microcysts or bulla).

Diagnosis:

What is the differential diagnosis of corneal guttata?

1. Fuch's corneal dystrophy.
2. ICE syndrome – unilateral.

What additional tests might be useful?

1. Corneal pachymetry.
2. Specular microscopy.

Which of the above tests would be useful in following the disease progression?

Corneal pachymetry.

Specular microscopy is useful to demonstrate abnormal endothelial cell count and morphology, but tends to correlate poorly with patient symptoms because the absolute minimum number of corneal endothelial cells to maintain corneal deturgescence varies in each individual. A swollen cornea indicates poor endothelial function regardless of the number of endothelial cells.

Management:

How would you manage corneal edema?

1. If epithelial edema: use Muro 128.
2. If bullous keratopathy:
 - a. Bland antibiotic ointment like erythromycin

- may help minimize pain and foreign body sensation from ruptured bulla, as well as help prevent secondary infection.
- b. Add BCSL with antibiotic prophylaxis if above inadequate and awaiting corneal tissue for corneal transplant.
 - c. Full thickness penetrating keratoplasty or deep lamellar endothelial keratoplasty (DLEK).
 - d. Conjunctival flap if poor visual potential and painful in affected eye.
3. Corneal transplant indicated if bullous keratopathy or decreased visual acuity secondary to corneal edema to level that affects patient's daily functions.
 4. Treat OHT if IOP >20 mmHg.
 5. IOL exchange if older style AC IOL (ex. closed-loop).

When is a triple procedure indicated?

Visually significant cataract (either has good visual potential or need to view posterior pole) with enough corneal stromal edema to affect visual acuity, or those with epithelial edema.

In those with corneal pachymetry >640, there is a much greater chance that the cornea will decompensate, and they should therefore be considered for triple procedure if above applies.

What techniques can you use during cataract surgery to help minimize endothelial cell loss?

1. Viscoelastic: dispersive type (i.e., Viscoat) that will coat and protect endothelial cells.

2. Small incision cataract surgery: helps maintain stable anterior chamber with less anterior chamber distortion or collapse during the surgery.
3. Minimize phaco time and energy.
4. Phaco in posterior chamber, not anterior chamber.
5. Aggressive post-operative management of inflammation and intraocular pressure.

References:

1. Seitzman GD, Gottsch JD, Stark WJ. Cataract Surgery in Patients with Fuch's Corneal Dystrophy: expanding recommendations for cataract surgery without simultaneous keratoplasty. *Ophthalmol* 2005;112(3):441-445.