Handling End-Stage Vision Loss

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We see patients all the time that have suffered some level of permanent vision loss
• Vision loss affects more than 6.5 million people in the United States aged 55 and over
• It can occur from any number of causes including trauma, proliferative diabetic retinopathy, end-stage glaucoma, and hereditary retinal disease among others
• It can be unilateral or bilateral
• How do you manage it?

The role of the primary eyecare provider in managing patients with end-stage vision loss?
• Determining cause
• Is the end-stage vision loss in only 1 eye or both?
• What is the visual potential?
  – How aggressive do you need to be to keep/maintain vision
• What are the patient’s expectations?

Handling End-Stage Vision Loss
• Though any level of vision loss can be significant
• It becomes more significant when vision loss affects the quality of life
  – Being able to drive a car
  – Keeping/maintaining a job in order to pay bills
  – Being able to read a newspaper or recognizing the face of a friend
• How do you manage vision loss in a patient (or an eye) that manages just fine?
  – Unilateral vision loss and other eyes is perfect

What level of vision matters?
• What about the patient who only has (profound) vision loss in one eye but the fellow eye is normal?
  – 20/20 in the good eye and 5'/200 in fellow eye
  – 20/20 in the good eye or FC in the fellow eye

Mark Dunbar: Disclosure
• Optometry Consultant/Advisory Board for:
  – Allergan
  – Carl Zeiss Meditec
  – Regeneron
  – Genentech

Mark Dunbar does not own stock in any of the above companies
What level of vision matters?

- How aggressive should you be in preserving the vision in the affected eye?
  - How diligent/compulsive should the patient be
  - Especially if it means taking multiple drops and/or needing surgery

The Primary Obligations in Managing a Patient with End-Stage Vision Loss

- Determine the best visual potential
- Is it feasible to have them in the best optical visual correction
  - Monocular precautions in vision loss is monocular

The Primary Obligations in Managing a Patient with End-Stage Vision Loss

- Make sure they have the best medical therapy for their condition
  - Chronic steroid use to maintain comfort
  - Glaucoma therapy to keep IOP low
- Make sure they understand the disease and why it's being treated/followed
  - Understand the ramifications of not following/being treated
- Make sure patients are aware of Low Vision Services and/or occupational rehabilitation services (Light House)

What level of vision matters?

- Sight is precious
- All vision matters - period, exclamation!!

How much vision do you need to have for it matter?

- To read

How much vision do you need to have for it matter?

- To drive a car...
  - Florida: If worse eye is 20/200, better eye must be at least 20/40
  - If worse eye 20/100, better eye must be at least 20/70

Florida: vision is legal standard for driving
All vision are required to have the best possible vision improvement
20/70 ———— In either eye, or both eyes together may pass with or without corrective lenses, if vision improves is required, because worse eye is at least 20/100.
20/200 ———— The worst eye must be at least 20/200.
The eye of anyone loses in which vision standards is not recognized in Florida.
89 yo Hispanic Female
- Severe POAG OU with history of glaucoma drainage implant
- Pseudophakic bullous keratopathy (PBP) RE (DMEK RE)
  - Persistent corneal edema -> 20/20
- Cataract LE -> 20/40

Brings a DMV Form to Fill Out
Has no interest in driving

89 yo Hispanic Female
- It’s important to keep the IOP low
- She is on a topical steroid for her corneal edema RE
- Do you consider a CE/IOL LE?
- DMV form filled out – NOT letting her drive

87 yo Hispanic Female: No Longer Feels Comfortable Driving at Night... but still drives to the store

WHO Classification of Visual Impairment
- 20/50 to 20/60 is considered mild vision loss, or near-normal vision
- 20/70 to 20/160 is considered moderate visual impairment, or moderate low vision
- 20/200 to 20/400 is considered severe visual impairment, or severe low vision. In the United States, a person with 20/200 in the BETTER eye is considered legally blind.
- 20/500 to 20/1,000 is considered profound visual impairment, or profound low vision
- Less than 20/1,000 is considered total visual impairment, or total blindness.
- No light perception is considered total visual impairment, or total blindness.

WHO Classification of Visual Impairment
- 20/30 to 20/60 is considered minimal vision loss, or near-normal vision
- 20/70 to 20/160 is considered moderate visual impairment, or moderate low vision

- Function very well with increase add’s for near
  - Able to read news print or adjust font in electronic devices
  - Often still able to drive a car and still feel independent

(Best-Corrected Vision in the best seeing eye)
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- less than 20/1,000 is considered near-total visual impairment, or near total blindness
- no light perception is considered total visual impairment, or total blindness.

Ambulatory Vision

- 20/500 - 20/1000 Ambulatory Vision: good enough to see large objects at close range
- Enables the basic ability to move around in a familiar environment

Causes of End-Stage Vision Loss

Glaucoma: leading cause of blindness
- 10% of people with glaucoma will have vision loss
- In the U.S., more than 120,000 are blind from glaucoma, accounting for 9% - 12% of all cases of blindness
- 19% of all causes of blindness in African Americans
- Lowering IOP important especially in end-stage vision loss even if the fellow eye is not affected
  - Delayed diagnosis
  - Compliance is a significant issue
74 yo Male: Exfoliative Glaucoma in the LE
Glaucoma Drainage Implant LE and is on Travatan and Cosopt OU

Recommended Follow up: q 4 months
Visual Fields every visit

“Why do I even need to bother with the LE?”
For the unilateral severe glaucoma patient – how aggressive do you need to be to keep IOP low?

Causes of End-Stage Vision Loss

Proliferative diabetic retinopathy
- Most common cause of legal blindness in the working population
- 35% of individuals with diabetes develop diabetic retinopathy – around 7% develop PDR

“The Thrill of Victory... ...The Agony of Defeat”

25 y/o AA Female: Type I DM
Handeling End-Stage Vision Loss from PDR

- Often occurs during the most productive working years
- PDR after treatment often remains stable
  - Still needs to be follow at least q 6mo
- Often dealing with other diabetes co-morbidities
  - Providing Low Vision – or referring for low vision
    - Letting them know there are Low Vision options
    - Light house
  - Discuss mental health options

Causes of End-Stage Vision Loss

Infection

- Endophthalmitis: incidence of endophthalmitis after cataract surgery has been reported to range from 0.03% to 0.2%
- Post surgery: retinal detachment or anterior segment

The Story...85 yo Female

- Had cataract surgery in the LE by an OMD community
- She developed endophthalmitis LE – HM vision
- I had never seen her yet she calls my office and leaves an angry voice mail
  - Notify the schedulers to make an appointment for the doctors who managing her endophthalmitis
- Ends up on my schedule and I finally see her as a patient
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How do we manage her?

- What are our obligations for this patient?

How do we manage her?

- Treat the glaucoma in the RE
  - Probably need to be aggressive
- But she is still angry and emotionally traumatized from the LE
- Make sure the LE is comfortable
  - Do you have any concerns about keeping a patient on a topical steroid LE indefinitely?

Advanced GL in her “good eye and endophthalmitis in the LE (HM)

- Started Latanoprost and Cosopt
- Continue with PF LE
- Long discussion on prognosis of LE
  - Very depressed and very angry
  - Talks about suicide
  - Notify social works and they try to reach her (phone is broken)
  - Discussed options for managing depression

Veronica: 53 yo BF, History of CMV OU

- History of CMV Retinitis OU
- Optic atrophy
- Aphakic: +9.50
- VA 20/80
- TA 48/19
- Med
  - RE: PF
  - LE Latanoprost/Cosopt
How should she be managed?

- Do you worry about the IOP in the RE (48)?
- Is the IOP in the LE low enough
- She is trying to qualify for STS but was denied
  - Letter written petitioning for benefits
- Recommend Low vision and referral to Light House for the Blind

Vision Loss from Hereditary Retinal Disease

- Inherited retinal diseases are a group of rare eye disorders caused by an inherited gene mutation and can result in vision loss or blindness.

50 yo Hispanic Male with long history of reduced vision in both eyes. Currently the LE is better

Works as a bank manager, wears soft CL's (+3.00), able to drive

Feb 2019
RE: 20/200
LE: 20/70 → Manifest +3.00 – 0.50 X 95 20/40

DMV Form filled out,
Restricted to daylight driving only

By May 2019 he feels the vision is getting worse
VA: 20/80

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VA: 20/80

Discussed option of Low Vision as well as going to the Miami Light House

52 yo Hispanic Male, Best’s Disease

Called asking for a doctor’s note. He’s moving to a new complex where pets are not allowed, unless there is a medical necessity for it. He says the dog helps him at night when he’s walking outside his home
50 yo Bank Manager with Best’s Disease

- We always had him in his best optical correction
- He used simple resources to help him function in job
  - Increase font sizes
- Over and over he was offered opportunities for Low Vision services as well as referral to the Miami Light House for the blind
- He was functioning so well – until recently – that he didn’t feel like he needed to utilized those resources

Causes of End-Stage Vision Loss

**Trauma**

- Most common cause of vision loss under 18
  - 2/3 trauma, 1/3 sports related injuries
  - Usually unilateral
Dealing with the Pthisical Eye

• Denotes end-stage eye disease
  – LP -> NLP
• Characterized by shrinkage and disorganization of the eye
• Will have small squared off shape
  – Opaque and thickened cornea
  – Thickened sclera
  – NVI, cataract, cyclitic membrane and retinal detachment

When to keep a patient on topical steroids long-term

• Pthisical/Pre-pthisical eye
• Blind eye
• Penetrating keratoplasty
• Filtering surgery

Management of the Pthisical Eye

• Keep it comfortable
  – Usually includes a topical steroid
• Optimize cosmesis
  – Scleral shell
  – Enucleation
• Protect the good eye (if there is one)

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