



THE COLLEGE OF
OPTOMETRISTS

Stage Two

Overarching case scenario 3

AGE AND GENDER ETHNIC BACKGROUND Female Aged 48 Caucasian

OCCUPATION AND HOBBIES Policy director for charity. Learning Spanish language at night class and enjoys independent travel in Europe as much as she can afford.

PRESENTING SYMPTOMS AND HISTORY Has had several episodes of laser treatment to both eyes over past two years, and vision decreased dramatically. Uses computer with enlargement and speech synthesis software, and CCTV in office. Needs something for reading travel books, correspondence, class notes. Very disturbed that she cannot make out the train/airport information board for journeys to work and on holiday trips.

GENERAL HEALTH AND MEDICATION Diagnosed with diabetes 16 years ago --- now controlled by Insulin injection x4 = 36 units per day. Beta-blocker for HBP and Lipostat.

PRESENT Rx, CENTRATION AND ACUITIES. CR39 Essilor Physio 3 Varifocals 2 years old

R. +0.25DS/+0.75x100 6/60

L. +0.75DS/+1.00x 90 6/60 monoc cd R32 L32

Add +2.50 R N30 L N30

PD/NCD 64/60 at 33cms

VISION 6/60 and 3/60

PINHOLE VISION RE 6/60 LE 6/60

REFRACTION RE +0.75D8 /+0.50X120

LE. +0.50DS/+0.75X90 Add +4.00

VA Distance RE 6/60 L 6/60

Near RE N18 L N18 at 20 cm

ACCOMMODATION not tested

BINOCULAR STATUS

CT with and without Rx Distance. No movement detected

Near 4 XOP slow recovery

MOTILITY appears full - smooth pursuit

CONVERGENCE 9cms

PUPIL REACTIONS Direct, Consensual and Near responses intact but slow

FUNDUS EXAMINATION see attached

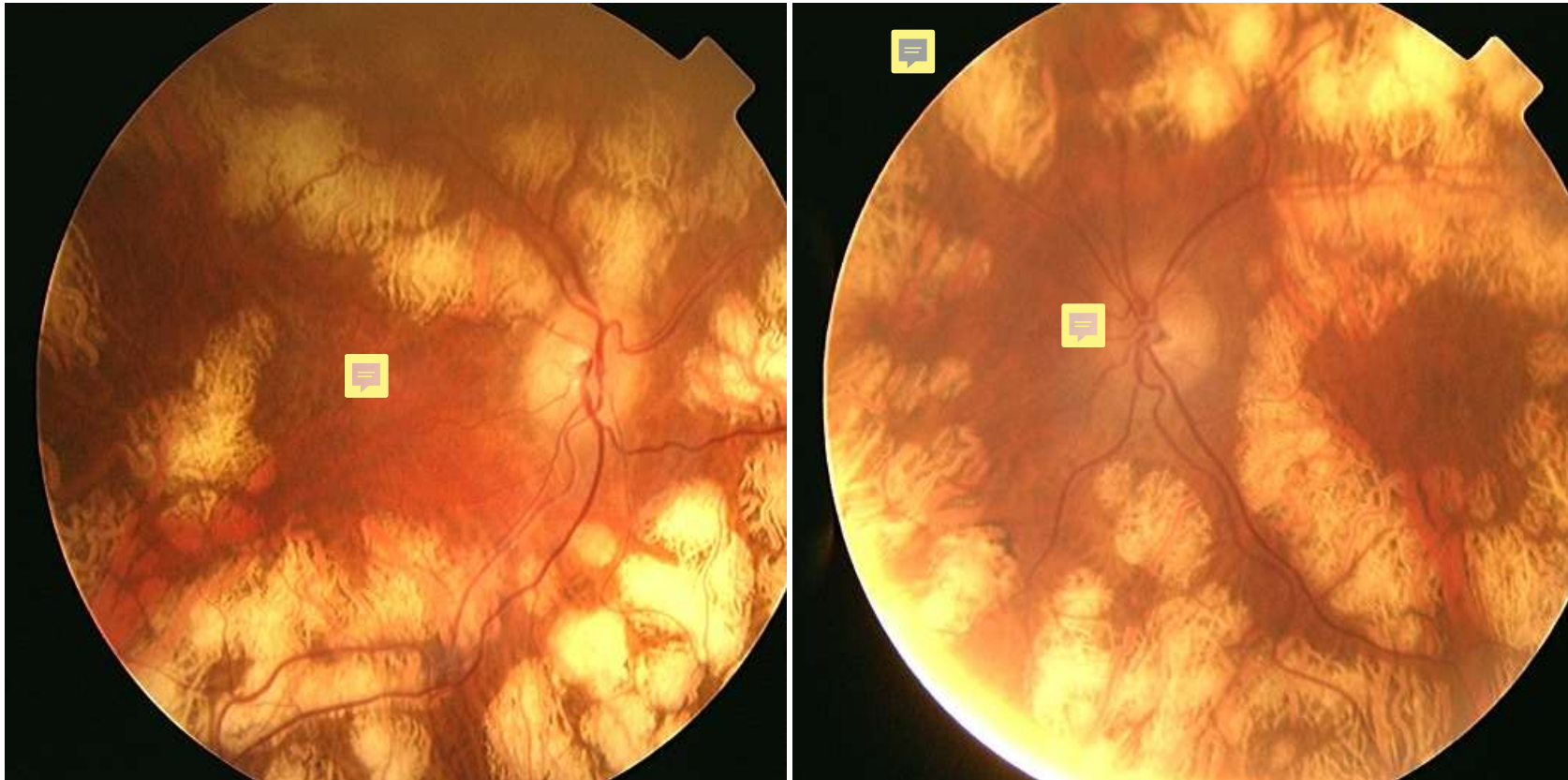
FIELDS Not tested

IOP RE 21mmHg LE 21 mmHg 5.00pm Pulsair

EXTERNAL EYE EXAMINATION : see attached

Fundus Image

What other retinal signs you may see in proliferative diabetic retinopathy?



External Eyes



Case scenario 3

Key points:

- Bilateral reduced vision with multiple laser treatments
- Uses CCTV and speech software for working on the screen
- Struggles with distance vision while travelling and near vision when reading travel books
- Poor control of diabetes – reduced vision likely due to proliferative diabetic retinopathy
- Poor best corrected visual acuity (BCVA) of 6/60

Consider the following:

- **Establish the type of laser treatment and what is it for**
- **What other questions would you ask**
- **What other clinical signs or examination would you look for or carry out**
- **How do you modify your eye test for this low vision patient**
- **Pre-empt what the patient is struggling with and how to cope with it**
- **Recommend appropriate glasses and/or low vision aids**
- **Local social services available to help her**

This is a case of a low vision patient. Based on the symptoms and fundus photos, she had proliferative diabetic retinopathy and received laser photocoagulation over the years.

How often is she being seen in the medical retina clinic?

Apart from laser, did she received other treatment, such as anti-VEGF injections to treat macular oedema. If so, how often?

Macular oedema can cause reduced vision, and refractive correction may not be accurate until it's stabilized or resolved. It's difficult to tell if she has this from the fundus, but an OCT scan will be very helpful.

Speaking of retinal changes, the extensive scarring can result in delayed light-dark adaptation. Her large pupils and slow response to light indicate she may be quite light sensitive. When dispensing, consider extra tints to help with the glare. Transitions are very subjective as some find that they **do not** turn clear quickly enough when going back indoors.

Other clinical investigations

Look for rubeosis iridis, the presence of new vessels on the iris (NVI). This can be easily missed if you're not looking for it. Rubeosis can result in neovascular glaucoma and is very difficult to manage.

Check the Van herick angles, borderline IOP so good idea to see how it's like, though the optic discs are healthy.

Glasses/low vision aids for different visual tasks

Her aided and unaided distance vision is very similar, and her main struggle is looking at the train/airport information. A pair of distance glasses will not make a difference. Therefore, to enable her to see further, consider a telescope for spot seeing the flight/train information board.

As for reading travel books, a different optical aid is required.

The near VA improves to N18 with a +4.00D addition. This is likely insufficient to see travel books, which are about an N8 or N10. A handheld magnifier will be more appropriate when she wants to read travel books on the go as it is portable and light. This shall be done with the distance glasses or in this case, unaided, since she has a small distance correction, and the vision and aided distance VA is similar.

$$\begin{aligned}\text{To calculate the magnification required for a person} &= \frac{\text{What the person sees}}{\text{What the person wants to see}} \\ &= \frac{18}{8} = 2.25x\end{aligned}$$

To round it up, 2.5x magnification is required. For spot reading, this is good enough.

If she wishes to read fluently, the acuity reserve is 3:1.

Magnification = 6.76x

Remember, the higher the magnification, the smaller the field of view and more aberrations.

For classes and taking notes, sitting in front of the class and using her laptop for note taking allows her to adjust the font size, screen brightness and contrast. It also comes with enlargement and speech software. Consider requesting her lecturer to send her the study notes prior to her classes.

Varifocals can be used but due to the strong near addition and smaller reading area, it may not be very useful but it's worth a try. There is a small near exophoria with slow recovery, if

prescribing strong reading glasses, the use of base-in prisms may improve the phoria and help with convergence.

Coping with low vision & eligibility for being registered as sight-impaired

Based on the patient's VA, she is eligible to be registered as severely sight impaired.

According to the RNIB, to qualify as partially sighted, one of the following must be met:

- *VA 3/60 – 6/60 with full visual field*
- *VA of 6/60 - 6/24 with moderate reduction of VF, cloudiness in vision, or lens has been removed but not replaced with a lens implant*
- *VA 6/18 or better AND a large part of visual field gone*

To qualify as severely sight impaired, one of the following must be met:

- *VA less than 3/60 with full visual field*
- *VA 3/60 – 6/60 with severe VF reduction (such as tunnel vision)*
- *VA 6/60 or better with a reduced VF, especially if the bottom half is affected*

This is entirely voluntary but benefits her. This process is certified by an ophthalmologist. Looking at the type of optical aids that she has, she probably has access to the local social services and low vision clinic.

Modified exam for a low vision patient

Check out Stage 1 visit 1 notes