How to deal with blurred vision?

Jithanorm Suvantranee, MD, FRCP(T)
Clinical Professor, Neuro-ophthalmology
Phramongkutklao Medical College & Hospital
Define exactly what the patient means ——

Visual failure

ภาพซ้อน diplopia

ภาพเต้น oscillopsia
The main symptom of blurred vision is *foggy* or *fuzzy appearance of objects*.

Other symptoms include :- *sensitivity to light*, *floaters or spots*, *loss of peripheral vision or central vision*, *dry eyes*, *poor night vision*, *poor near vision* etc.

Accompanying symptoms depend on the underlying cause of blurry vision
History of the presenting complaint

- unilateral or bilateral.
- Onset – sudden, gradual, fluctuating or progressive?
- Whether it has happened before or had been diagnosed?
- Any associated factors - any other visual phenomena, pain (ocular pain or pain in the head), associated systemic complaints or other neurological problems
Other important factors in the history

- Other ocular Hx – previous trauma, Surgery..
- Medical Hx- HT, DLP, diabetes, OSA...
- Medication – drugs used..
- Family Hx- HT, DM, heart disease, stroke, malignancies or any hereditary syndromes. ...
- Social Hx – alc, smoking, occupations..
Examinations

➢ Neuro-Ophthalmic Exam.:

- Visual acuity
- Color vision
- Pupil size and reactions
- Fundus exam
- Visual field tests
- Ocular motility tests
** Examinations **

- **Neuro-Ophthalmic Exam:**

- Other examinations

  - full neurological exam
  - Systemic exam – VS : BP, heart- any carotid bruits
  - referral to an ophthalmologist for slit lamp exam
**Examinations**

- Neuro-Ophthalmic Exam.

- Other examinations

- Investigations *This will depend upon what is suspected*

  - Lab –
  - OCT, VEP, ERG, ...
  - Imaging – brain, orbit.
A 56 yrs old female presented to the ER with a 2 day Hx of **blurred vision**. This was severe enough to stop her driving. There was no pain or other symptoms.

Past Hx: glaucoma for 12 yrs, stable on her regular med. hypothyroidism, on levothyroxine. other drug- gabapentin & eye drops for glaucoma
PE: both eyes looked normal, no redness, clear anterior chambers pupils - normal VA - reduced in both eyes. VF - no field defect Fundoscopy - normal.

Her blood glucose was 24.4 mmol/l. Her urine dip stick showed maximum glucose & ketones).
Case of sudden painless bilateral blurred vision from sudden refractive changes associated with diabetes.
A 52-yr-old man was brought to the ER by his family for evaluation of headache, nausea, blurry vision, and confusion.

Medical Hx - HT, DLP & prediabetes.
Medication: nifedipine, chlorthalidone, and atorvastatin.
Family Hx - HT, peripheral vascular disease, TIA (father), and diabetes (mother).
PE: The pt is **obese**, drowsy & somnolent but arousable
T 98.4°F, HR 76 /min, BP **220/110** mm Hg, R 12 /min. No icteric sclerae,
abdomen is soft and nontender.
Funduscopic exam reveals -

*retinal hemorrhages and exudates without papilledema*

the rest of his neurologic exam is nonfocal.
CBC and basic metabolic findings - no significant findings.

An ECG -

Brain imaging - did not show signs of acute cerebrovascular events.
Which of the following is the most likely Dx?

1. Hypertensive emergency
2. Hypertensive urgency
3. Myocardial infarction
4. Acute decompensated heart failure

*case of sudden bilat blurred Vision & Headache*
A 75-yr-old man presented to the eye clinic complaining of **blurred vision** upon awakening this am. and giddiness.

Past Hx: HT, on Amlopine® 5 mg daily

PE: BP 150/90 mm Hg  
Pupils – normal, VA with gl 20/20 OU  
Confrontation VF:
Plain Axial CT showed right occipital infarct
A 55-yr-old woman presented to the ER with a bifrontal headache that she’d had for 1 day. She also had blurred vision and was vomiting shortly before coming to the hospital.

Past Hx: Healthy, No HT, migraine, Sz, autoimmune disorders, or cerebrovascular disease.

PE: BP 114/63 mm Hg, others were normal,
PE: revealed subjective vision loss. She was only able to see objects moving on a horizontal plane, but peripheral vision was limited on her left side. Pupillary reflexes, EOM - normal, No other neurologic deficits.

Lab: - normal, including a basic metabolic panel, Coagulation studies, and cardiac enzymes. WBC 19,700/mm³, no source of infection was found.
A CT scan of her head without contrast showed:

low-density, patchy areas in the subcortical regions of the parietal and occipital lobes bilaterally, with relative sparing of the cortex.

(vasogenic edema)
The next day, MRI brain without contrast (FLAIR sequence)

- posterior vasogenic edema in the subcortical WM of the parietal & occipital lobes with a predilection for the watershed territories, typical of **posterior reversible encephalopathy syndrome (PRES)**
Case of acute bilat blurred vision with headache & vomiting
A 30 years old pregnant female with history of preeclampsia on day 3 after uneventful delivery, presented with new onset headaches and difficulty in vision.

She denied blindness and made up visual sequences [confabulations].
She was feeling persistence of images after removing her gaze from objects (palinopsia).
She was seeing flashes of lights (photopsias) and saw relatives in front of her, in their absence (formed visual hallucinations).
PE: BP 180/110 mm of Hg
Fundus & papillary exam. - normal
Confrontation VF - left homonymous hemianopia

MRI brain -

Bilateral occipital subcortical white matter changes suggestive of PRES.
A 21-year-old woman,

C/C: Sudden blurred vision upon awakening 4 days PTA, & 1 episode of horizontal diplopia also seeing a flash of light in her right eye.

PI: 1 wk earlier - right temporal headache which radiating to the back of her head, waking her from sleep.

Ocular history is unremarkable.
**PE:** BP 160/98 mm Hg right arm sitting

Best-corrected VA: 20/20-3 OD with **distortion**, 20/20 OS.

Color vision: 13/14 plates OD, 14/14 plates OS Ishihara test.

Pupils: normal, no RAPD.

Confrontation VF: full to FC OU;
Fundus exam:

numerous choroidal folds throughout the entire posterior pole with a raised area temporal to the foveola.

OCT: optical coherence tomography

showing serous retinal detachment in the right eye

The left eye was unremarkable.
case of sudden unilateral blurred vision with distortion & headache
A 20-year-old woman,

C/C: Sudden **blurring of vision** in her left eye.

PI: She had fever for the past 8 days, but no rash or any other systemic manifestation and test +ve for dengue.

PE: Fundi – There was inflammation of blood vessels in the retina, retinal thickening, few splinter-shaped hemorrhages at the macula, an oval-shaped pigmented area near the center of the retina.

Rx: Oral steroid. Her vision is back to normal in 5 days.
Case.7

77-year-old man,
C/C: 3 short episodes of *blurred vision* in his RE.
The 5-minute episodes stretched over an hr in total,
and after each episode, his vision returned to normal.

PI: DLP, on statin drugs for 5 yrs

PE: Eye exam showed that his vision was good,
IOP was normal

Dx: "amaurosis fugax,"
Fundus exam: dilated

Cholesterol emboli (Hollenhorst plaques)

His right internal carotid artery was 80 % blocked because of atherosclerosis.

12 months after carotid endarterectomy, he had no eye problems.
This case presents with acute unilat blurred vision, highlights the fact that visual symptoms can be a warning sign of a cerebrovascular problem.

Eyes May Offer Window into Cerebrovascular Disease
A 30-year-old woman presents to the ER complaining of sudden blurred vision in her RE. The blurred vision ('seeing as if through fog') and deteriorated over 2 days to the point that she was unable to see at all. Also retro-ocular pain & pain with any movements of her RE.
PE: VA 20/200 OD, 20/20 OS
Pupils 4+ RAPD OD
Color 0/14 OD
VF:

The right optic disc appears normal

The remainder of the ophthalmological and neurological exam - normal.
A previously healthy 23-year-old woman.

C/C: *progressively* blurred vision for the prior 3 days.

Her vision was initially mild but soon disturbed her daily life.

Mild intermittent low grade fevers without discomforts in any other parts of the body.
PE: T 37.5°C, HR 105 /min, BP 97/79 mm Hg.
Heart – NSR, with a systolic murmur.

Conjunctiva

Conjunctival hemorrhage

Pupils normal light reflex.
VA Hm at 30 cm. OU
Fundii:

Roth’s spot (arrow) and cherry-red spot (white arrow).
Painless lesions on the palms (Janeway lesions); non-tender, erythematous lesions on the palms.

Painful lesion on the finger pad (Osler’s nodes).

Janeway lesions (white arrow) over sole and Osler’s nodes (arrows) over toe.
Lab: WBC 13,800/mm³, PMN 94%..
blood cultures - Staphylococcus aureus
Other - unremarkable.,

Echocardiography showed a 1 × 1 cm vegetation on the atrial side of the anterior mitral valve.

Echocardiography showed vegetation (arrow) over the anterior leaflet of mitral valve (white arrow).
Rx: 2 g of IV oxacillin every 4 h.

Her visual acuity had totally recovered by the 5th day of admission.

Case of infective endocarditis with initial presentation of bilateral, progressive blurred vision.
A 44 year old woman, C/C: *progressive* blurred vision for 10 wks. She had no headaches or nausea.

Funduscopic showed bilateral papilledema.
MRI of the brain -

revealed a large frontal durally based lesion involving the superior sagittal sinus, causing mass effect and vasogenic edema.
A 15-year-old female, presented with a 2 months Hx of *progressive* *blurred vision* in both eyes.

**PI:** She was Dx of SLE 8 months PTA, and was on hydroxychloroquine 400 mg / day since.

**PE:** Fundus exam showed bilateral absent reflexes with retinal pigmentary changes.

**Dx :** Retinopathy secondary to hydroxychloroquine toxicity.
progressive blurred vision in both eyes from drugs.

- Certain anticholinergics
- Some antihypertensives
- Some antipsychotic drugs
- Oral contraceptives
- Cortisone
- Some antidepressants
- Some heart medications
A 75-year-old Chinese man, complaining of mistiness of vision for 1 month PTA

Last year, he received Rx of ethambutol (1500 mg/day) for 9 months because he suffered from tuberculosis.

PE: only bilat cecocentral scotoma,
(Automated perimetry)
The results indicated that bilateral RNFL thickness was within the normal range.

OCT = optical coherence tomography.

Dx: Ethambutal optic neuropathy
A 60 yrs old male, was referred by his GP, with 3 month Hx of **blurred vision** in the left eye.

Past Hx: He had decreasing vision in both eyes over the preceding 6 months, but never had his eyes examined for many yrs. HT, DLP, type 2 DM, chronic renal impairment and peripheral vascular disease.
PE: VA 6/18 OD, 6/12 OS.
no improvement with a pinhole.
Early cataracts bilaterally
Pupils - equal, reactive, no RAPD.
Fundus: severe proliferative diabetic retinopathy (DR) both eyes.
This 41 yr old woman had longstanding blurry vision OD. She reports a brief episode of diplopia at onset, but none since, and denies any episodes of optic neuritis. She has an 18 yr Hx of MS, with slow chronic progression of imbalance and leg weakness for the last 10 yrs. She is taking β-interferon & baclofen.

One-eyed blur in multiple sclerosis
PE: VA 20/200 OD, 20/30 OS.
Color 4/14 OD, 13/14 OS. PIP
Pupils - no RAPD.
Fundoscopy showed bilateral mild optic disc pallor.
EOM:

Dx: Acquired pendular nystagmus.
SUMMARY

Blurred vision can be defined as a type of visual impairment that affects the sharpness or focus of an image.

- Clarify what the pt means
- Details Hx of symptoms
- Appropriate investigations
- Causes varies from mild..to potentially sight-/ life threatening
- Rx-with prevention