



## “ Ambulatory Neurology ”

# How to deal with blurred vision ?

*Jithanorm Surantamee, MD, FRCP(T)*  
*Clinical Professor, Neuro-ophthalmology*  
*Phramongkutklao Medical College & Hospital*



ถ้า ผป. มาด้วยอาการ ตามัว



➤ 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.



## Case.1

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.*

## Case.2

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 -

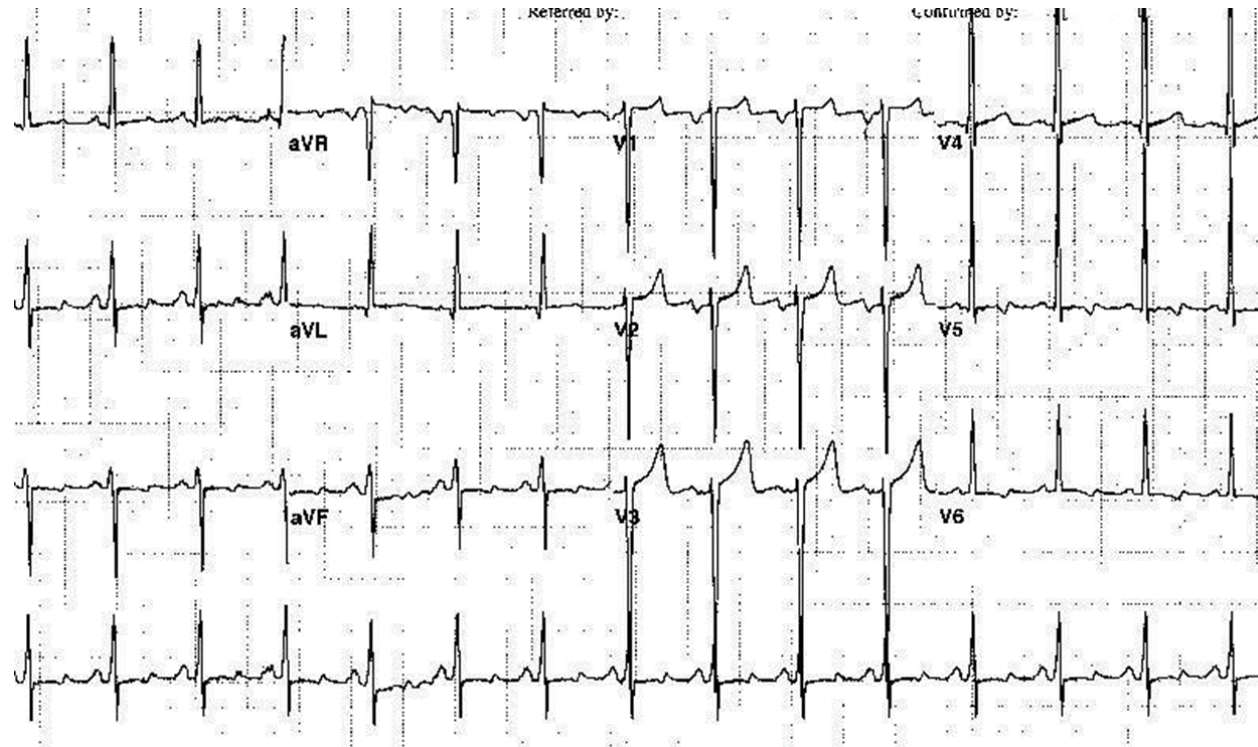
*retinal hemorrhages and exudates  
without papilledema*



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*

## Case.3

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<sup>®</sup> 5 mg daily

PE : BP 150/90 mm Hg

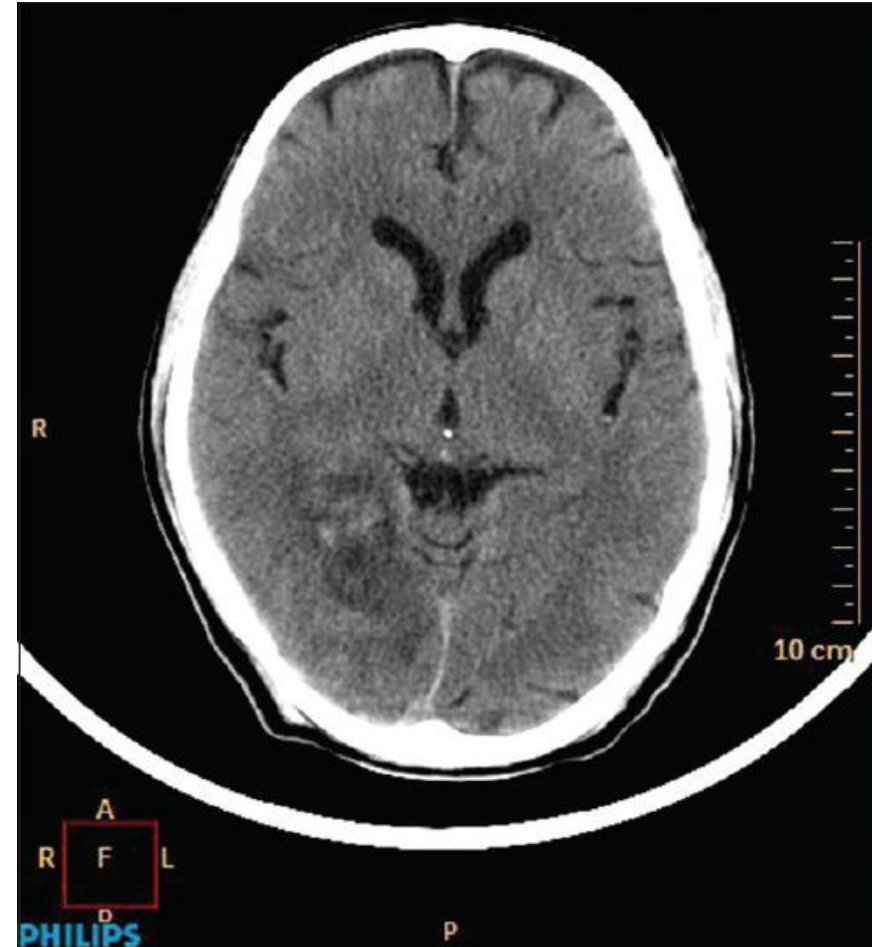
Pupils –normal, VA with gl 20/20 OU

Confrontation VF :

Left homonymous  
hemianopia



Plain Axial CT showed  
right occipital infarct



## Case.4

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,

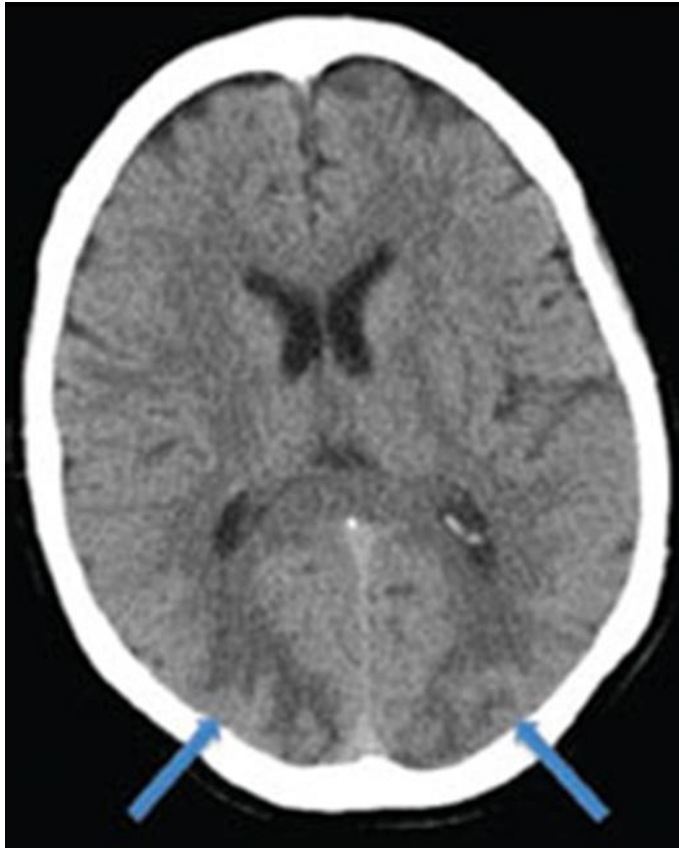
No other neurologic deficits.

Lab : - normal, including a basic metabolic panel,

Coagulation studies, and cardiac enzymes.

WBC 19,700/mm<sup>3</sup>, 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*

## Case.5

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*).

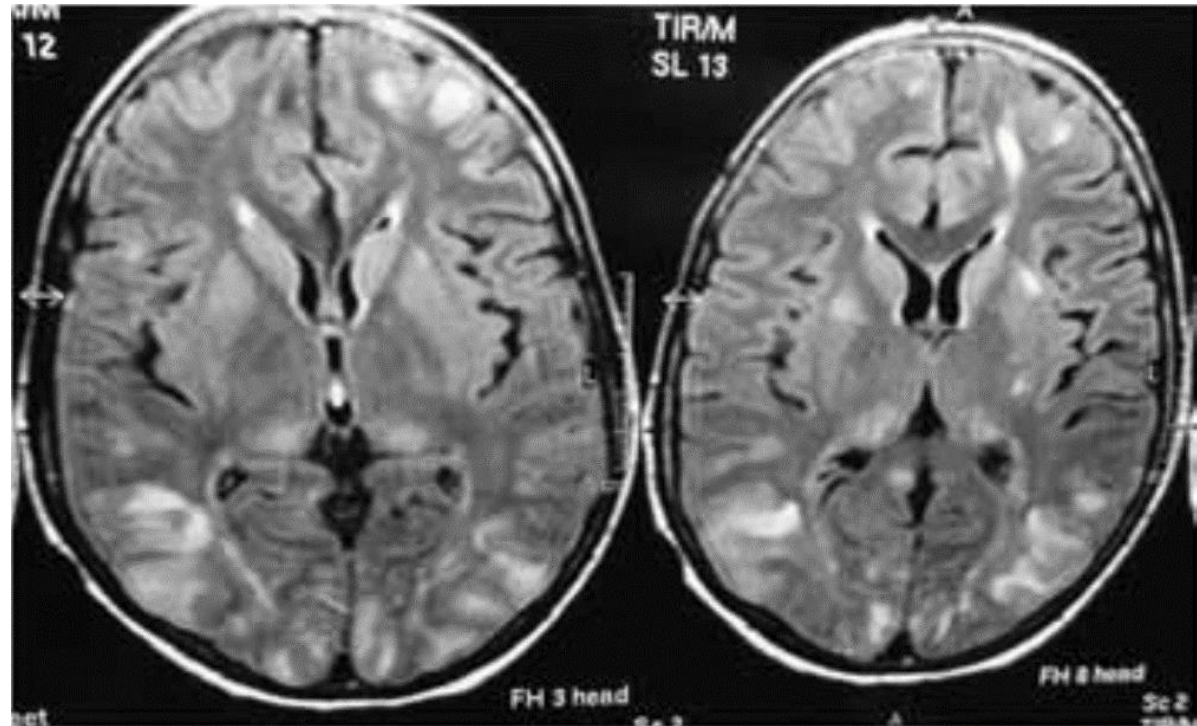
PE : BP 180/110 mm of Hg

Fundus & papillary exam. - normal

Confrontation VF - left homonymous hemianopia

MRI brain -

*Bilateral occipital  
subcortical white  
matter changes  
suggestive of PRES.*





## Case.6

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

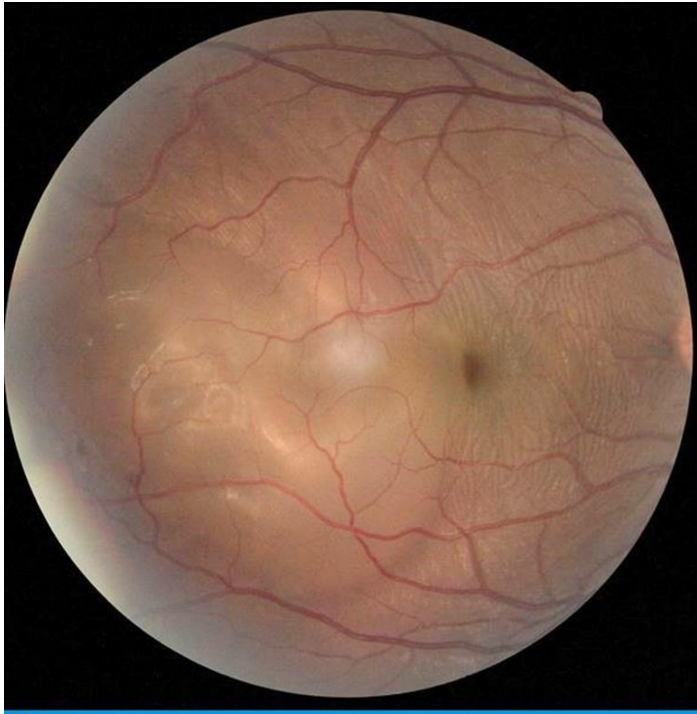
Best-corrected VA: 20/20-3 OD with **distortion**,  
20/20 OS.

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

Pupils: normal, no RAPD .

Confrontation VF : full to FC OU;

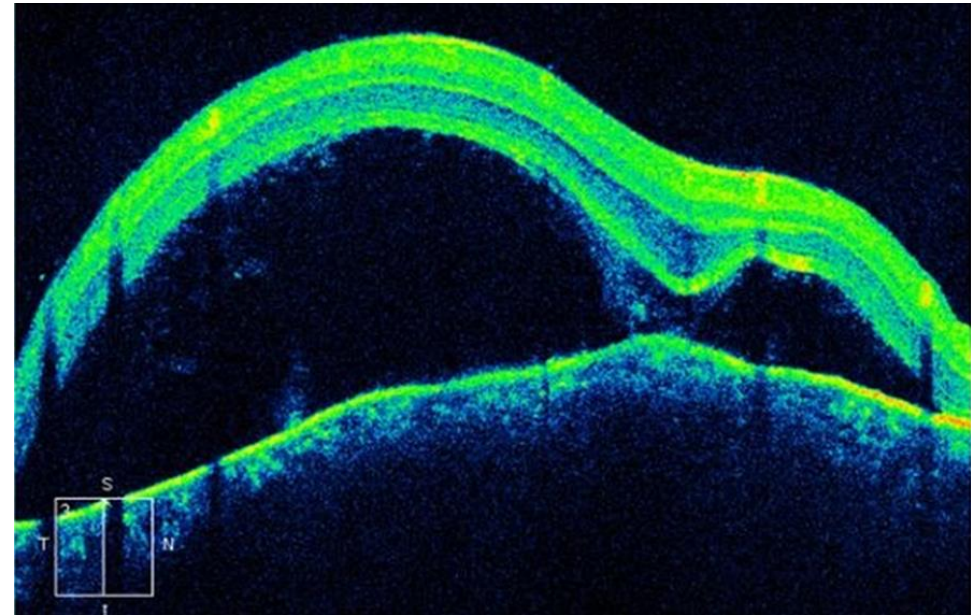
## Fundus exam :



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

*The left eye was unremarkable.*

## OCT : optical coherence tomography



*showing serous retinal detachment in the right eye*

*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.

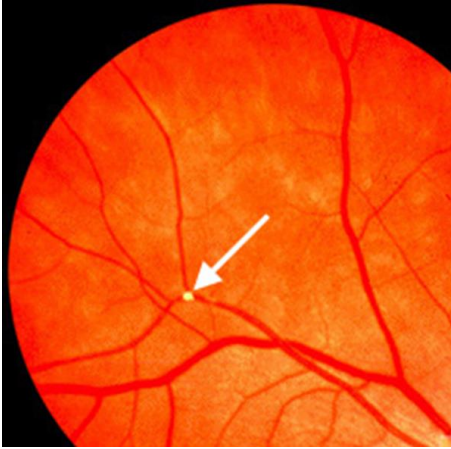
The 5-minute episodes stretched over an hr in total,  
and after each episode, his vision returned to normal.

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 unilateral blurred vision, highlights the fact that visual symptoms can be a warning sign of a cerebrovascular problem.*

*Eyes May Offer Window into Cerebrovascular Disease*



## Case.8

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.



## Case.9

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



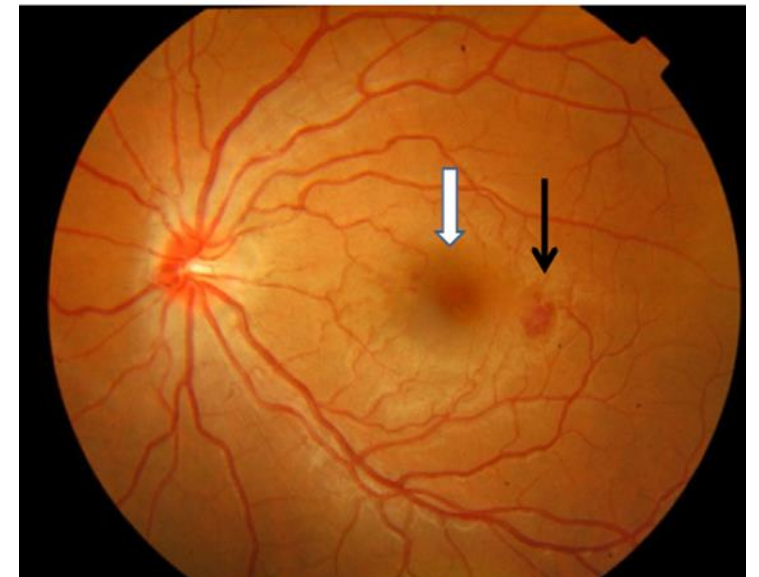
*Conjunctival hemorrhage*

Pupils normal light reflex.

VA Hm at 30 cm. OU

Fundi :

*Roth's spot (arrow) and  
cherry-red spot (white arrow).*

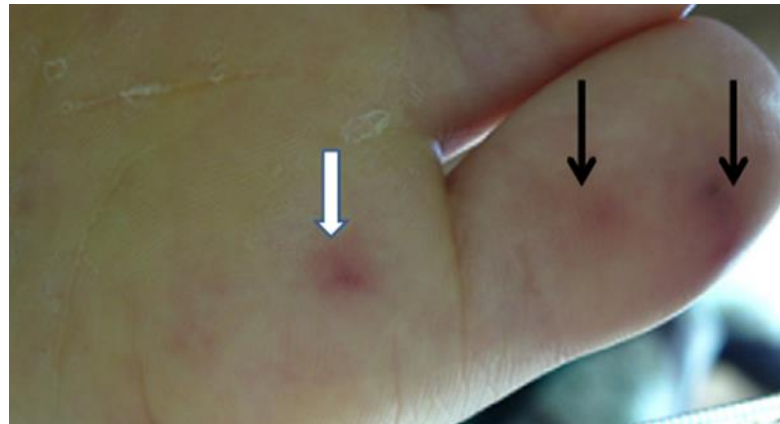




*Painless lesions on the palms (Janeway lesions); non-tender, erythematous lesions on the palms.*



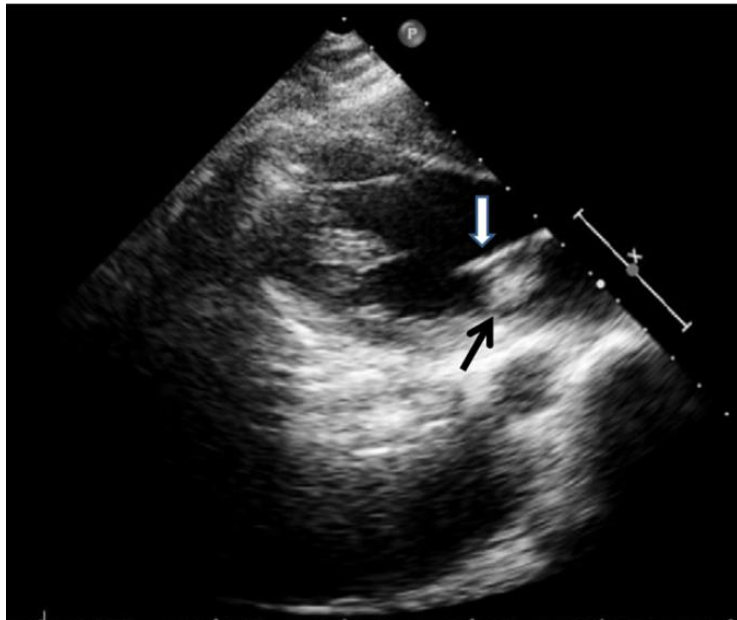
*Painful lesion on the finger pad (Osler's nodes).*



*Janeway lesions (white arrow) over sole and Osler's nodes (arrows) over toe.*

Lab : WBC 13,800/mm<sup>3</sup>, PMN 94% ..  
blood cultures - Staphylococcus aureus  
Other - unremarkable.,

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



*Echocardiography showed vegetation (arrow) over the  
anterior leaflet of mitral valve (white arrow).*

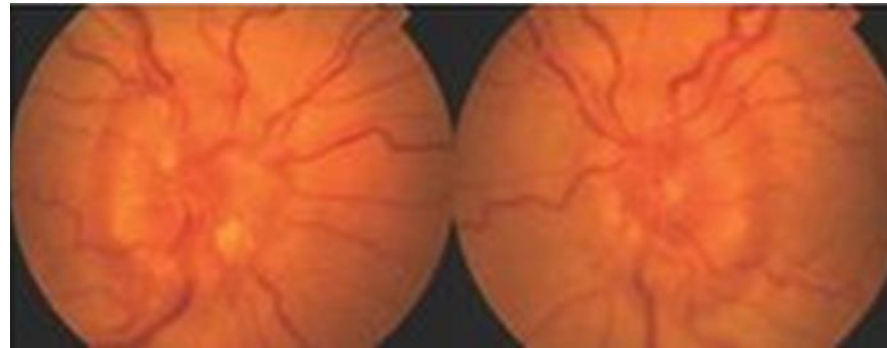
Rx : 2 g of IV oxacillin every 4 h.

Her visual acuity had totally recovered by the 5<sup>th</sup> 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.

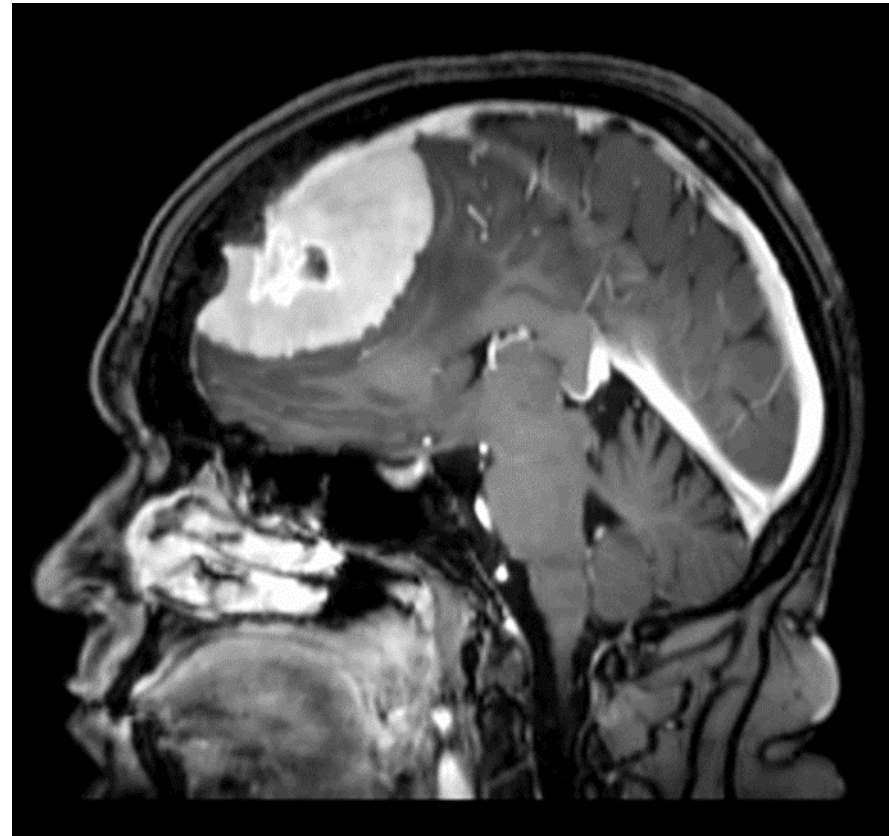
Funduscopy showed bilateral papilledema.





MRI of the brain -

revealed a large frontal  
durally based lesion  
involving the superior  
sagittal sinus, causing  
mass effect and  
vasogenic edema.



## Case. 11

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.*

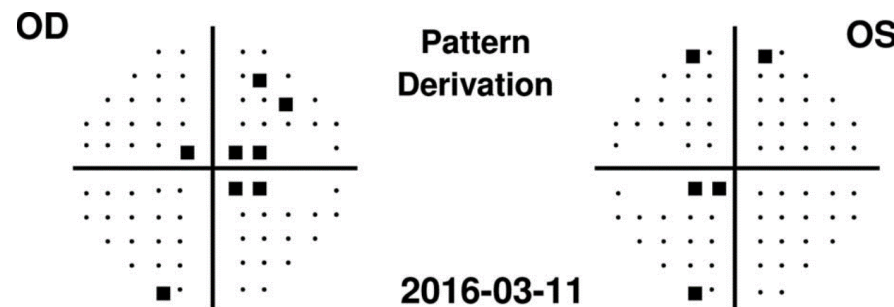
- Certain anticholinergics
- Some antihypertensives
- Some antipsychotic drugs
- Oral contraceptives
- Cortisone
- Some antidepressants
- Some heart medications

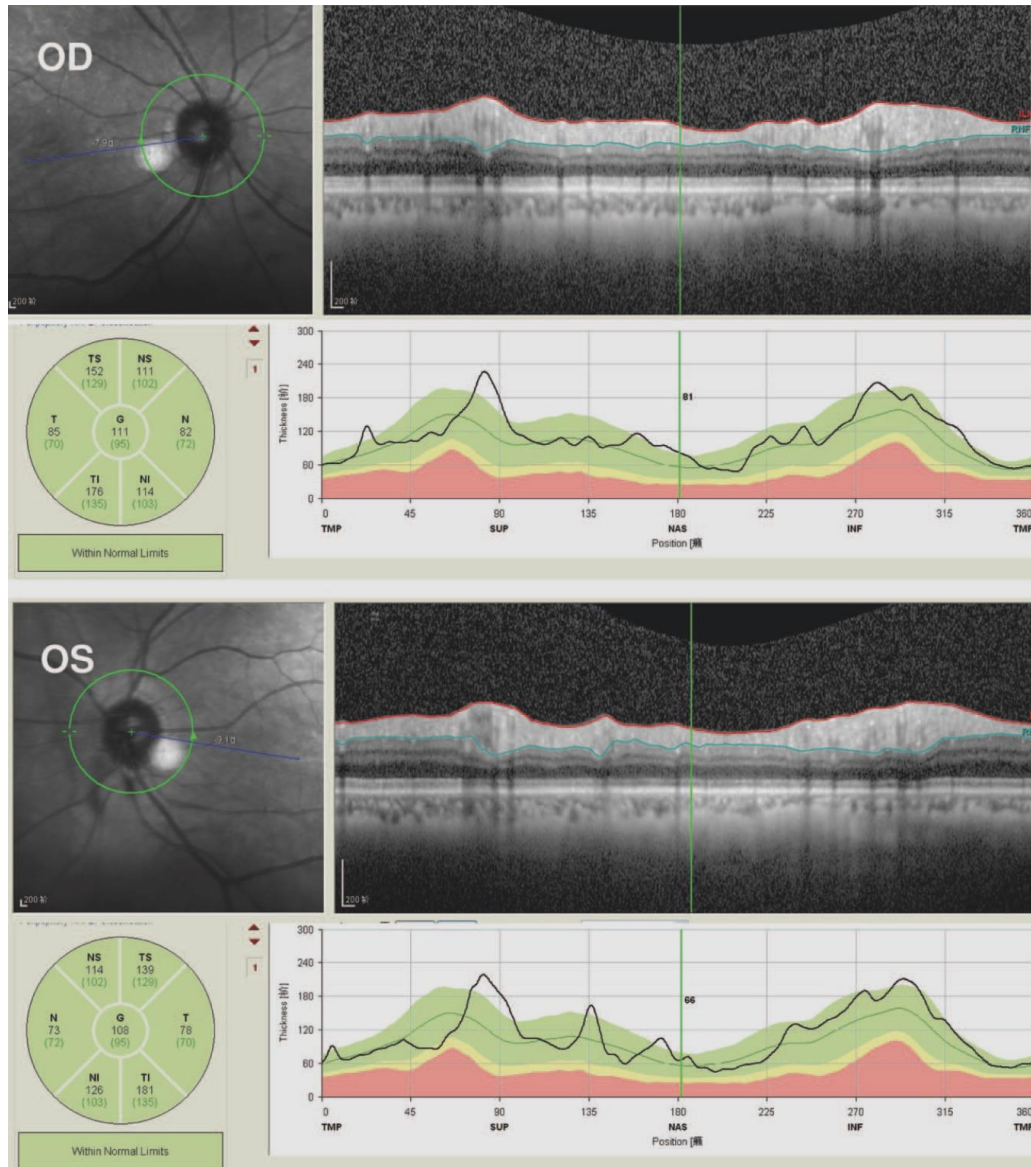
## Case.12

A 75-year-old Chinese man , complaining of mistiness of vision for 1 month PTA

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

PE : only bilat cecocentral scotoma,  
(Automated perimetry)





OCT = optical coherence tomography.

The results indicated that bilateral RNFL thickness was within the normal range.

Dx : Ethambutal optic neuropathy

## Case.13

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 had his  
eyes examined for many yrs.  
HT, DLP, type 2 DM, chronic renal impairment  
and peripheral vascular disease.

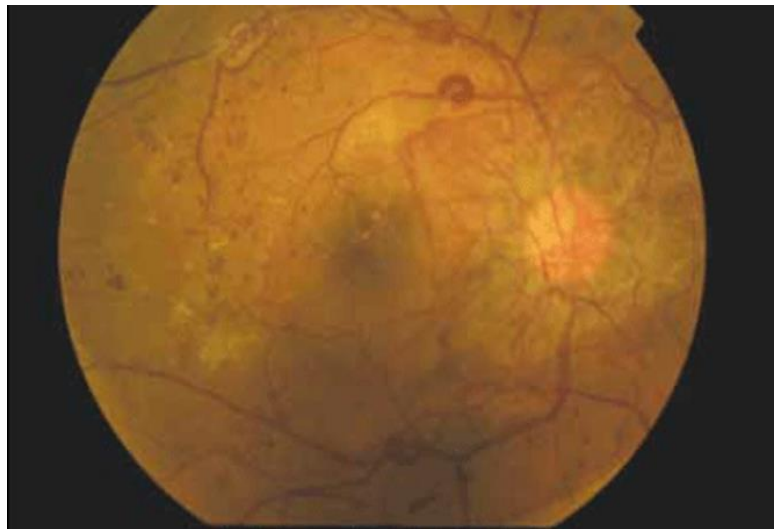
PE : VA 6/18 OD, 6/12 OS.

no improvement with a pinhole.

Early cataracts bilaterally

Pupils - equal , reactive, no RAPD.

Fundus : *severe proliferative diabetic retinopathy (DR) both eyes.*



## Case.14

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  $\beta$ -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

