

# Case notes

## Retinal hole

### Patient details

**Initials:** KJ

**Age:** 61 years

**Gender:** Male

**Refraction:** RE: -4.75DS, LE: -5.25DS

**Distance Acuity:** RE: 6/5, LE 6/5

**Reading add:** RE & LE: +2.00D

**Near acuity:** RE: N5, LE: N5

**General health:** Good

**Medication:** Atorvastatin

**Ocular history:** Nil

**Trauma:** Nil

**Headaches:** Nil

**Family history:** Nil

### Reason for visit

Vague flashes of light left eye  
for 3 days

Some floaters for around a  
week, unsure which eye

### Examination

#### Slit lamp & undilated Volk 90D

##### Right eye

Clean

Clear

No cells/flare

Grade 3

Clear

0.25

Healthy

Well-defined

No holes/

tears/detachment

##### Structure

**Lids & lashes**

**Cornea**

**AC**

**van Herick**

**Lens**

**C:D ratio**

**NRR**

**Margins**

**Periphery**

##### Left eye

Clean

Clear

No cells/flare

Grade 3

Clear

0.25

Healthy

Well-defined

No holes/

tears/detachment

#### Fundus photograph left eye through undilated pupil





## Learning points

1. Patient KJ's retinal hole was not visible with undilated fundus photography and undilated indirect ophthalmoscopy
2. Pupil dilation and/or wide-field imaging were necessary to detect KJ's retinal hole
3. Posterior vitreous detachment (PVD) is a common cause of retinal detachment when a retinal hole develops in a location where there is strong adhesion between the retina and the vitreous - a retinal detachment then occurs due to ingress of fluid beneath the retinal tear
4. A Weiss ring is a ring of glial tissue from around the optic disc margin that is avulsed during PVD
5. Prevalence of PVD increases with age and axial length of the eye
6. Up to 1 in 6 PVDs causes a retinal break and 1 in 25 a retinal detachment<sup>2</sup>
7. Vitreous haemorrhage is associated with a 70% chance of a retinal break<sup>3</sup>
8. Tobacco dust in the anterior vitreous correlates with a 90% chance of a retinal tear<sup>4</sup>
9. To check for tobacco dust, focus the slit lamp just behind the patient's lens, then ask the patient to look up and down a few times to agitate any pigment cells that have been released following a retinal tear
10. If a patient appears to have undergone an uncomplicated PVD, document on your record that you have given them verbal and written safety-netting advice.

## Further examination

**Pupil dilation with 1% tropicamide  
Volk 90D & wide-field imaging**

Right eye	Structure	Left eye
No tobacco dust	<b>Vitreous</b>	Tobacco dust
No floaters		Weiss ring
No holes/ tears/detachment	<b>Periphery</b>	Retinal hole
		Small haemorrhage

### College of Optometrists' Guidance<sup>1</sup> on examining patients who present with flashes and floaters

If you suspect a retinal break or tear, you should, as a minimum:

- a. take a detailed history and symptoms, looking for particular risk factors
- b. examine the anterior vitreous to look for pigment cells
- c. perform a dilated fundal examination, using an indirect viewing technique
- d. give appropriate advice to the patient, which you back up with written information.

1: College of Optometrists (2021). <https://www.college-optometrists.org/clinical-guidance/guidance/knowledge-skills-and-performance/examining-patients-who-present-with-flashes-and-fl>

2: Patel *et al* (2023). <https://www.sciencedirect.com/science/article/abs/pii/S2468653022005759>

3: Sarrafzadeh *et al* (2001). <https://pubmed.ncbi.nlm.nih.gov/11733270/>

4: Tanner *et al* (2000). <https://bjo.bmj.com/content/bjophthalmol/84/11/1264.full.pdf>