

# A 50-year-old woman with a posterior vitreous detachment

Commentary by **JOHN A. DOWNIE** MB BS(Hons), FRANZCO

**Patients with a recent onset of flashes and floaters need ophthalmic review to exclude the presence of a retinal tear or detachment.**

## Case scenario

A 50-year-old woman presents after being diagnosed with a posterior vitreous detachment by her ophthalmologist. She requests further information about the cause, prognosis and management. What should she be told? She is not myopic and is otherwise well.

## Commentary

### What is posterior vitreous detachment and why is it important?

Posterior vitreous detachment is a normal ageing process that reflects degenerative changes in the vitreous. It is uncommon before the age of 50 years, but approximately 65% of patients over 70 years of age have a posterior vitreous detachment. It is an important condition because it can lead to the development of a retinal tear and subsequent retinal detachment in a minority of patients.

The vitreous is a gel comprising water, hyaluronate and collagen fibres that fills the central cavity of the eye and is in contact with the inner surface of the retina. It has an important role in the development of the eye, but has no role in maintaining retinal attachment or intraocular pressure after birth.

With age, the structure of the gel degenerates and the vitreous separates from the retinal surface – this is a posterior vitreous detachment (Figure 1). The process proceeds to completion rapidly, perhaps over a few hours in most cases. It may be

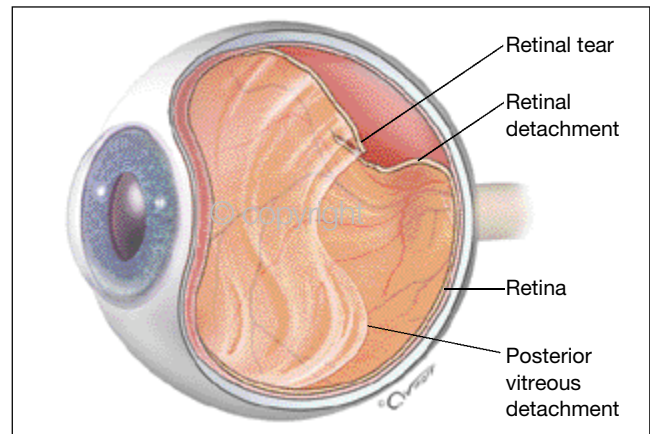


Figure 1. A posterior vitreous detachment causing a retinal tear with subsequent retinal detachment.

asymptomatic, but patients often present with the sudden onset of flashes and floaters. A floater is a vitreous opacity of aggregated collagen fibres or sometimes of blood that becomes noticeable because it is mobile with respect to the retina. Floaters may appear as floating specks, lines or a cobweb in the field of vision. Flashes develop because the vitreous exerts traction on the retina as it separates from the retinal surface. They appear as momentary sparks in the peripheral vision and tend to be most noticeable at night and are sometimes induced by eye movements. They should be differentiated from the fortification spectra of migraine.

If there is an abnormally strong site of attachment between the vitreous and retinal surface, vitreous separation at the time of posterior vitreous detachment exerts traction on the retina that can cause a retinal tear to develop and lead to retinal detachment (Figure 1). The risk of a retinal tear in a patient who presents with the sudden onset of flashes and floaters is about 10%. If a tear is present, the risk of retinal detachment within the next six weeks is 40%.

Therefore, a patient who presents with sudden onset of new flashes and floaters needs to be seen by an ophthalmologist within a few days so that the diagnosis of a posterior vitreous detachment can be confirmed and the peripheral retina examined. If there is loss of visual field or acuity (suggesting a retinal detachment) then ophthalmic review on the same day is needed.

### What should this patient be told?

When a patient presents with an uncomplicated posterior vitreous detachment confirmed by retinal examination, I provide a brief description of the condition, stressing that it is a normal ageing process, and explaining that I do not expect further problems. I also describe the origin of flashes and floaters and explain that these generally subside over a few weeks. Flashes

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## Flashes and floaters: your questions answered

### What are flashes and floaters?

Flashes and floaters are usually caused by a change in the clear gel (called the vitreous; see Figure A) that fills the centre of the eye. With ageing, this gel becomes more liquid and pulls away, or separates, from the inner surface of the back of the eye (an area called the retina). This is known as a 'posterior vitreous detachment'.

The floaters are blood and debris in the gel that are produced during this process; they become visible once they are free to move around in the eye. They may be like specks, insect-like dots, or cobwebs. Flashes develop as the gel tugs on the retina as it separates from the retina. They are sparkles that are seen in the outermost area visible to the eye (the peripheral field of vision) and are most often seen in dim conditions. The sudden onset of flashing lights and floating spots in one eye is common in people aged between 40 and 80 years.

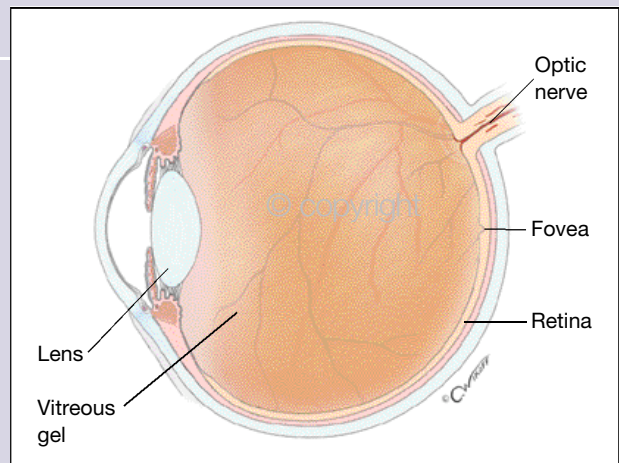
### How do retinal tears and retinal detachments develop?

Separation of the vitreous gel from the retina (posterior vitreous detachment) is a normal event, but it can occasionally cause a tear in the retina. A retinal tear lets fluid pass into the space under the retina, breaking down the slight suction force that keeps the retina in its normal position. This results in the retina coming away from the back of the eye, which is known as a 'retinal detachment'.

A retinal detachment causes loss of vision. The first sign of this is usually a shadow that is seen in the outermost field of vision. This loss of vision continues until the shadow reaches the centre of the field of vision – at this stage reading vision is lost. Without surgery, a retinal detachment will cause complete and permanent loss of vision.

### If I have flashes and floaters, what should I do?

If you experience the sudden onset of flashes and floaters, it is important that an eye doctor (an ophthalmologist) examines you within a few days. If you also have decreased vision or a loss of



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Figure A. Anatomy of the eye.

part of the field of vision you should be seen on the same day. This is best arranged by visiting your GP.

### What will the examination involve?

Apart from checking your vision and eye pressure, the eye doctor will dilate your pupils using eyedrops and examine the vitreous and retina. The doctor will check to see whether you have a posterior vitreous detachment, and whether there are any tears or areas of retinal detachment in the outermost area of your retina. It is important that retinal tears and detachment are detected early to prevent any loss of vision.

Generally, if no problems are detected, special follow up is not needed. However, it is important that you return urgently to the eye doctor if your symptoms change – that is, if the flashes or floaters suddenly worsen, or a shadow develops in the outermost field of vision.

If a retinal tear is found, this can usually be treated with laser to prevent a retinal detachment developing and any loss of vision occurring. If a retinal detachment is present, specialised surgical treatment will be required.

This patient handout was prepared by Dr John Downie.

usually abate completely, but most people are left with background floaters that are not usually troublesome. No restrictions on physical activity are required.

Retinal tears usually develop at the time of onset of a posterior vitreous detachment, not afterwards. Therefore, repeat examination is not generally required, unless examination reveals some worrisome changes in the peripheral retina or intravitreal blood. However, I warn all patients that they must present urgently if they experience an increase in flashes or floaters, loss of the peripheral field of vision (in any quadrant),

or decline in central vision. These are the symptoms of retinal detachment. The patient handout appearing on this page may be useful in patient education. **MT**

### Further reading

1. Downie J. Retinal detachment: what the GP should look for. *Med Today* 2003; 4(6): 54-61.

DECLARATION OF INTEREST: None.