PATIENT
INFORMATION
LEAFLET

BEAVRS
British and Eire Association of Vitreoretinal Surgeons

SUB-MACULAR HAEMORRHAGE

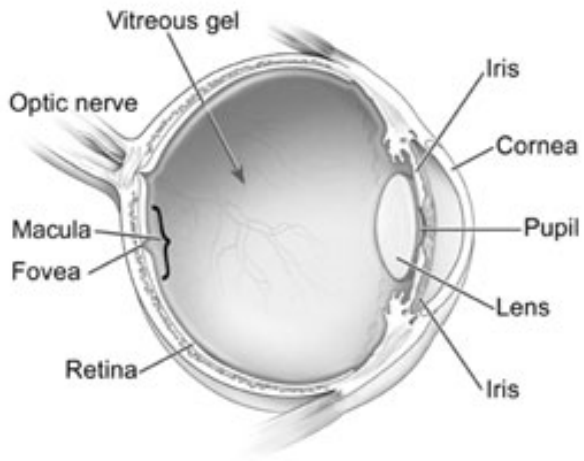


Image Source: National Eye Institute

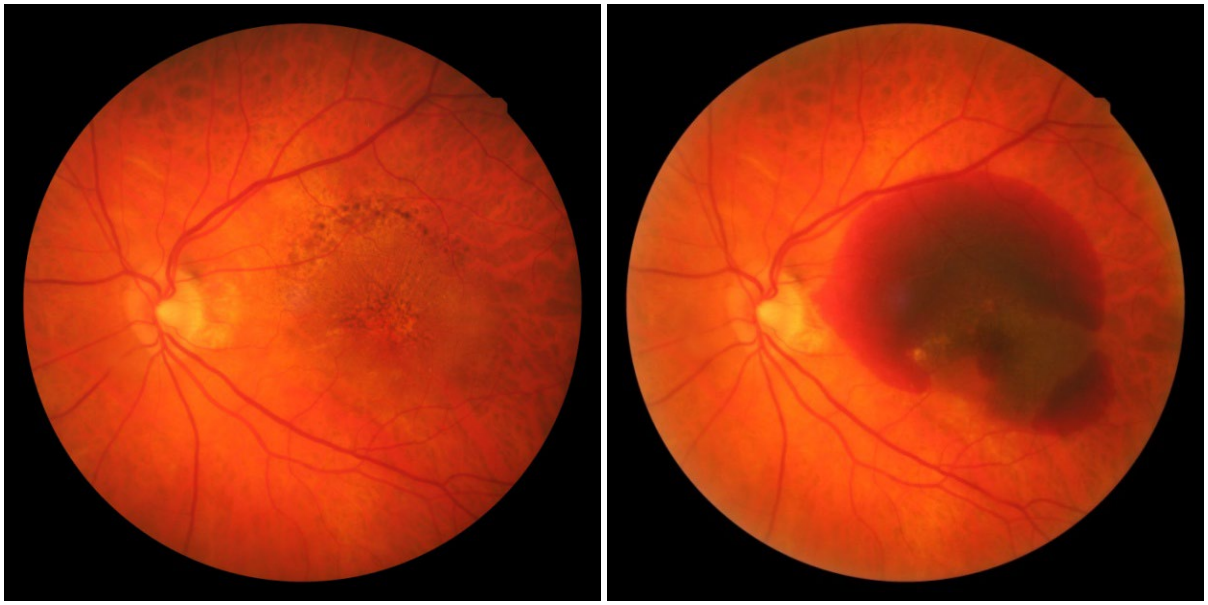
What are the retina and the macula?

The retina is the light-sensitive layer that covers the inside of the eye, allowing us to see.

The macula is in the centre of the retina, containing cells that give us our sharpest central vision for fine details.

What is sub-macular haemorrhage?

A sub-macular haemorrhage is a bleed under the macula that causes a blood clot. This can lead to severe and persistent loss of sight in the eye.



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Macula appearance before haemorrhage

Sub-macular haemorrhage

Why do I get sub-macular haemorrhage?

This is most frequently caused by wet Age-Related Macular Disease AMD.

Wet AMD is a disease where new, abnormal blood vessels grow through the macula and leak fluid or bleed. The macula should be dry to work well. If the macula gets wet, then it does not work properly and the sight is affected.
There are other rarer causes of sub-macular haemorrhage including injuries and dilated blood vessels.

Will I develop sub-macular haemorrhage in my other eye?

It is possible that your other eye could be affected. It is therefore very important to monitor for any changes in vision of the fellow eye, and report these to your eye specialist or optician urgently.

What are the treatment options and what do they involve?

There are 4 main treatment options:

1. Observation
2. Injection of anti-VEGFs alone
3. Injection of gas displacement along with tPA and anti-VEGF

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4. Surgery

1. Observation

It is possible to observe smaller and thinner sub-macular haemorrhages as they might gradually resolve on its own. This is however only suitable for a minority of people with this condition.

Benefit
The benefit of observation is that no injection or surgery is involved.

Risks
The haemorrhage can persist and cause long lasting retinal damage, scarring and permanent visual loss.

2. Injection of anti-VEGF alone

The current main treatment for wet AMD is with injections in the eye called "anti-VEGF" injections. Anti-VEGF injections reduce the leakage and bleeding so that the macula can become dry again. However, it might take some time for the blood to clear on its own.

Benefit
The procedure is usually less than 10 minutes and you would not need to do any face down posturing after injection.

Risks

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Injections into the eye are generally safe. Common side effects include red, sore, gritty eye and floaters. Sometimes it can also cause cataract, increase in eye pressure, detached retina and bleeding in the eye.
The most significant risk is severe infection in the eye that can lead to loss of vision. Fortunately, this is a very rare occurrence (1 in 1000).

3. Injection of gas displacement along with tPA and anti-VEGF

tPA, also known as "clot-busting" medicine is used to break up blood clots. It can be injected into the eye (as an off-licensed treatment) to help dissolve the blood clot.
A gas bubble is then injected into the eye to push blood away from the macula. Following these injections, you may be asked to lie on your tummy for a few hours, followed by face down for 3–4 days.

Benefit
The procedure is usually less than 20 minutes. Combination of these injections and gas can help to shift the blood clot away from macula, reducing macula damage and scarring.

Risks
The risks of injection are as discussed above. Additional risks of tPA include potential toxic effect to the retina and higher chance of bleeding.
With a gas bubble in the eye, you must not fly in an aircraft, going to high altitudes (tall mountains) or go for deep sea diving whilst the bubble is there - usually a few weeks.
You will also have to follow posturing advice by your doctor.

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4. Surgery (Vitrectomy, subretinal tPA and anti-VEGF)

This is a form of keyhole surgery performed under a microscope, using small incisions in the white of the eye for insertion of very fine instruments. Firstly, the vitreous gel is removed (vitrectomy). tPA is then injected directly to the blood clot to break it up, followed by anti-VEGF. The eye will be filled with a temporary gas bubble, which presses against the macula to help push the blood clot away.

Benefit
This is the most effective option to achieve the aim of shifting blood clot away from macula.

Risks
The risks are as mentioned above.
Additional risks of surgery include a small risk of retinal detachment and a high risk of cataract.
This is also the longest procedure of all options and it would require you to lie flat for around 30 to 60 minutes.

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Do I need to have a general anaesthetic for the treatment above?

Injections to the eye is done under local anaesthetic with numbing eyedrops to minimise discomfort. You will be awake for the procedure.

Vitrectomy surgery can be done with you awake (local anaesthetic), or asleep (general anaesthetic), often as a day case procedure.
Most patients opt for a local anaesthetic, which involves a numbing injection around the eye so that no pain is felt during the operation. This is sometimes supplemented with medication to reduce anxiety (sedation).

Am I able to travel after treatment?

You must not fly or travel to high altitude on land whilst the gas bubble is still in the eye (up to 12 weeks but usually 2-3 weeks).

If ignored, the bubble will expand at altitude, causing very high pressure resulting in severe pain and permanent loss of vision. In addition, if you need a general anaesthetic whilst gas is in your eye, then it is vital that you tell the anaesthetist this fact so they can avoid certain anaesthetic agents which can cause similar expansion of the bubble.
None of these exclusions apply once the gas has fully absorbed; or if no gas is injected.

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Will I have to take any drops or medication after the treatment?

After injections, you will sometimes be given antibiotic drops to use for a few days.

After surgery, you will usually be prescribed up to three drops: an antibiotic, a steroid and a pupil-dilating agent for a few weeks.

When will I need to be seen again after the treatment?

Follow-up will depend on the extent of the sub-macular haemorrhage and treatment performed. You will be reviewed regularly to monitor for any improvement or progression.

What will happen next?

We must seek your consent for any procedure or treatment beforehand. Staff will explain the risks, benefits, and alternatives where relevant before they ask for your consent. If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to ask for more information.

Scientific Evidence

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The advice in this booklet is based on a variety of sources, including latest research published in peer-reviewed scientific journals. It has also been scrutinised by a panel of experts from the Britain & Eire Association of Vitreoretinal Surgeons ("BEAVRS"). If you require further information about this, please ask your surgeon.
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