

## **INTRAVITREOUS INJECTIONS**

The intravitreal use of therapy is a rapidly growing area of treatment in ophthalmology. The vitreous is the jelly-like substance that fills the back part of the globe of the eye. Injecting substances directly into the eye, into this jelly (intravitreal injection), allows the delivery of a drug in high concentrations to the area where one wants to achieve the greatest action of the drug, usually the retina lining the inside of the eye. Hence it is a very potent form of treatment but, as with any surgical invasive activity, it also carries with it some risks, but is generally considered a reasonably safe treatment. Your ophthalmologist will need to discuss with you the relative risks and benefits of such treatment and alternatives. As with any treatment, your condition may not get better, or could become worse, despite this intervention.

### **THE TECHNIQUE:**

The eye is numbed with local anaesthetic drops. The procedure is done using an aseptic technique. The eyelids are held open with a small speculum (clip) and the eye is cleaned with a strong antiseptic. This is a very important step in preventing the introduction of infection into the eye.

Once this has been done, the injection is performed using a very fine, disposable needle, through the white wall of the eye. The procedure is an outpatient one done in the rooms and the whole procedure takes less than 10-minutes.

Immediately after the treatment antibiotic ointment is put in the eye. The strong antiseptic used to ensure maximum safety can cause a transient chemical conjunctivitis and, hence, once the local anaesthetic drops wear off, the eye will usually feel gritty and irritable. There is usually a stinging sensation and the eye will often be watery, this may cause the nose to run as well. These effects usually only last a few hours and usually do not require any special treatment and wear off, certainly by six to 12 hours. It is

probably best to take a mild pain tablet and try and rest until the eye settles down.

One must not rub the eye while the local anaesthetic drops are still working, nor rub the eye immediately afterwards, as one can cause a corneal abrasion or scratching of the eye which then subsequently will be extremely painful and may take 12 to 36 hours to heal over. No permanent damage is done but it is certainly extremely uncomfortable until it heals over, so this should be avoided.

The eye will usually appear bloodshot and sometimes may have a bright red area on the white of the eye at the site of the injection, of a variable size. This is due to a very small bleed under the superficial conjunctival lining of the eye, at the site of the injection, while this looks startling, it is completely harmless and resolves totally in anything from one to seven days.

Often intravitreal injections do need to be repeated, particularly when treating ongoing conditions. Your doctor will be able to inform you if this is the case and what a likely course of treatment may entail.

### **DRUGS USED:**

Some intravitreal injections are done in relation to vitreo-retinal surgery and include air and various expansile gases to help re-position the retina. When drugs are injected inside the eye they are often used in “off-label” fashion, as most drugs have been approved for general use in the body not for use inside the eye, but have been shown to be effective and relatively safe to use inside the eye in appropriate doses.

Some of these drugs include various antibiotics, anti-viral agents and anti-fungal drugs. Methotrexate has also been used inside the eye as well as Cortisone (Triamcinalone). Drugs used in relation to age-related macular degeneration include Macugen, Lucentis and Avastin. The first two drugs have been designed to go inside the vitreous, whereas Avastin is used in an “off-label” fashion. The “off-label” use of drugs is well accepted, where appropriate in medicine.

## **POSSIBLE SERIOUS COMPLICATIONS:**

With any surgical intervention such as this, there is always a possibility of a serious complication, although the incidence of this type of problem is very rare. You and your ophthalmologist must weight up the potential risks and benefits of intervention.

**Endophthalmitis:** this is infection inside the eye and is certainly a very serious vision-threatening complication. The incidence of this occurring is in the region of 1:3000 or less. Generally, such infection will respond to treatment but sometimes does not and the sight of the eye can be permanently lost.

**Retinal Detachment:** the chance of this occurring is in the region of 1:5000 or less. More than 90% of such retinal detachments are successfully repaired with surgery but, once again, this is a serious condition with the possibility of losing some or all of the sight in the eye.

**Traumatic Cataract:** the chance of this occurring is probably less than 1:5000. Once again, it is usually treatable with surgical intervention, but not always.

**Vitreous Haemorrhage:** the chance of this occurring is in the region of 1:3000 but the bleed inside the eye is generally small and resolves spontaneously. Even a large bleed will normally clear spontaneously with time, but certainly be a nuisance until it does so.

Patients will often experience some vitreous floaters and possibly other transient visual disturbances and, rarely, sterile inflammation in the eye requiring treatment. This is very rare.

**Raised intraocular pressure:** the injection may cause an immediate, brief rise in the intraocular pressure, but this is not usually a problem.

Hence, as can be seen, an intravitreal injection is not undertaken lightly because of these risks but, using modern techniques it is a relatively safe procedure and even when major complications occur they can generally be managed. Nevertheless, there is always a possibility that intervention can result in severe, permanent loss of vision.

You will be given written instructions on how to contact your doctor or an emergency service and what to expect after your injection, as, if there is a complication, early intervention is very important.