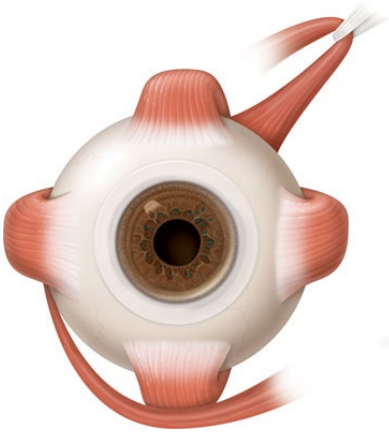

Information on Botox Injection for Squints

Botulinum toxin, more commonly known as Botox, has been used to treat patients with squints since the 1970s and is an extremely safe and effective way of changing the position of the eyes.

What is botulinum toxin and how does it work?

Botulinum toxin is a naturally occurring toxin produced by the bacteria Clostridia botulinum. **It weakens muscles by disrupting the signalling between the nerve and the muscle.**

When an electrical signal passes down the nerve to a muscle, a special chemical is released from the end of the nerve into the space between the nerve and the muscle. This chemical then attaches itself to receptors on the muscle cells and this in turn sends a signal to the muscle cells, causing them to contract.

Botulinum toxin works by sticking to these muscle receptors, so preventing the chemicals from attaching to them and as a result the muscle does not receive the signal to contract.

How long do the effects last for?

Botox starts to have an effect on muscles after **24-48 hours** and has its maximum muscle weakening effect two weeks after treatment. **The muscle will normally regain its normal function after 3-4 months**. However, after repeat treatments the effect can be longer lasting. The reason why the effect of Botox wears off with time is because the muscle cells develop new receptors, so the signalling from the nerve to the muscle is restored.

How is botox treatment carried out?

In **adults** and cooperative teenagers Botox treatment can be carried out in theatre or the clinic using anaesthetic drops to numb the eye**.** Once the eye has been anaesthetised the Botox can be injected directly into the eye muscle using a special needle connected to an electromyogram (EMG). When the needle is in the correct position the patient is asked to move the eye so that muscle contracts and the EMG picks up the signal from the contracting muscle, so the ophthalmologist knows the needle is in the correct position. A very small dose of Botox (usually 0.1ml) is then injected into the muscle and the needle is removed after 30 seconds have passed. This pause before removing the needle minimises the spread of Botox to surrounding tissues.

For children, Botox treatment is carried out under a general anaesthetic. Children will require an anaesthetic pre-assessment to ensure they are fit and healthy for a GA. Appointments for the pre-assessment clinic are arranged by phoning the Birnie Centre on 01463 704419. Sometimes telephone appointments for assessment can be arranged especially if you live at a distance from Inverness.

You / Your parent or carer will be asked to sign a **consent form** prior to the procedure.

Possible Complications

Botox is an extremely safe medication and only has an effect close to the site it is injected into. It cannot travel to other parts of the body. When the local anaesthetic drops have worn off the eye can be a little uncomfortable, but paracetamol or ibuprofen based pain killers are all that is required.

- Subconjunctival Haemorrhage

There may be some redness of the surface of the eye where the injection was given; this which will disappear in a few days.

- Ptosis

If the Botox was to pass into other tissues close to the eye muscles, it can result in a temporary droopiness of the eyelid, known as a ptosis. This may last for 2-3 weeks, but will always recover spontaneously. A

ptosis is more likely to occur with a medial rectus injection compared to a lateral rectus injection.

- Double vision

One of the most common reasons for carrying out Botox treatment is to determine whether an adult patient is at risk of developing troublesome double vision if their eyes were to be straightened by future surgery. It is not uncommon for some patients to experience a period of double vision when Botox has straightened their eyes. This double vision usually recovers as the effect of the Botox wears off.

Occasionally the Botox can weaken neighbouring eye muscles causing a new temporary vertical squint and this may also result in a limited period of vertical double vision.

- Scleral perforation

It is possible for the Botox needle to pass through the outer coat of the eye during treatment, but this is an extremely rare occurrence. Like scleral perforation during squint surgery, there is a very small risk that this could result in a retinal detachment or an infection within the eye which could cause significant vision loss if untreated. The risk of scleral perforation is higher if there is a lot of scarring from previous squint or retinal surgery, or in very myopic (short-sighted) eyes.

- No effect

Occasionally a Botox injection is ineffective and does not result in any change in the position of the eye. In that situation arrangements can be made for it to be repeated.

Follow-up

Patients are usually seen approximately 2 weeks after a Botox injection by the Orthoptist to check that their eye position has changed and to assess and treat any troublesome double vision. If you are not issued with a follow-up appointment please phone the Eye Secretaries on 01463 705360 to arrange one.