

BOTOX AND FACIAL NERVE DISORDERS

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General Information about Botox

How does it work?

Botulinum Toxin (Botox) works by blocking the transmitters between the motor nerves that innervate the muscle. The result is temporary weakening of the muscle, which returns slowly over several months. The skin over the muscle tends to relax and appear smoother once Botox takes full effect.

Where can it be used?

Areas of treatment include; the glabellar area (the 11's/frown lines between the eyes), frontalis muscles (forehead lines), crow's feet, chin dimples, radial lip lines (smoker's lines) and nose lines. It may also be used in the neck and face of patients where facial nerve problems are causing abnormal movements or facial tightness/painful spasming.

Botulinum Toxin can also be used to reduce the muscle mass in the masseters (jaw line) for treatment of bruxing (teeth grinding) and TMJ pain.

What happens at the time of injection?

Receiving Botulinum Toxin doesn't require anesthesia or down time. The injections are made using a very fine needle and are virtually painless.

Generally, results are visible within two to ten days. To reduce the possibility of bruising/swelling, it is recommended to avoid alcohol for at least 24 hours and aspirin/anti-inflammatory medications prior to the procedure. As always, consult your physician before stopping any medications.

What are the side effects?

The most common side effects of Botulinum Toxin injections are bruising, redness, and swelling. Other, rare side effects are possible and will be reviewed by the treating physician. To avoid adverse reactions/results, do not manipulate the treated area for 2 hours after injections and maintain an upright position.

The effects of Botulinum Toxin typically last three to six months. As the treated muscles regain movement, lines and wrinkles will begin to reappear and require retreatment. Over time, these lines and wrinkles should appear less noticeable due to training the treated muscles to relax.

Specific problems with facial palsy and the role of Botox

Crocodile tears

This is a rare sequelae of facial nerve paralysis, when the facial nerve tries to grow back but loses its way and grows along the wrong channels. In so doing the nerve fibres that are destined for the salivary glands grow into the tear gland (lacrimal gland) instead. As a result patients may have watering of the eye when they eat or even think of food. The treatment is

Botox injections into the tear gland. The main risk of this procedure is failure to improve, ptosis (drooping of the eyelid), and rarely, double vision – but if these occur, they are temporary.

Eyelid spasm ‘blepharospasm’- Aberrant regeneration of the facial nerve to the eyelid closing muscle

The regeneration of the nerve along the wrong pathways can also cause involuntary closure of the eyelids with movement of the lower and mid face. These patients may also require Botox injections to weaken the eyelid closing muscles.

Frey's Syndrome; ‘Gustatory Sweating’ – Aberrant regeneration of the facial nerve to the skin of the face after parotid surgery

What is Frey's Syndrome?

Frey's Syndrome is a syndrome that includes sweating while eating and facial flushing. It is caused by injury to the auriculotemporal nerve, typically after surgical trauma to the parotid gland. This nerve, when it heals, reattaches to sweat glands instead of the original salivary gland (which had been removed during surgery).

This means that when you are supposed to salivate, you sweat instead. Redness and sweating appear when the affected person eats, sees, dreams, thinks about, or talks about foods which produce strong salivation. The patient has flushing and sweating over the temple, cheek, and upper neck areas.

What are my treatment options?

Medical treatments include:

- Topical anticholinergic ointments (scopolamine, glycopyrrolate)
- Topical anti-perspirants (deodorant)
- Topical α agonist (clonidine)
- Botulinum toxin injections

Botulinum toxin appears to be the easiest and safest method. It provides the longest period of symptom relief with the lowest complications. However, none of these treatments allow a definitive cure; relief is only temporary.

For permanent treatment, reconstructive surgery is the only option. This includes a face-lift type incision in the skin, lifting it up, and placing fat or another substance to act as a barrier under the skin to reduce the chance the nerves will regrow back into the skin. For more information please discuss this with your surgeon.

References

Facial Palsy UK; <http://www.uhs.nhs.uk/Media/Controlleddocuments/Patientinformation/Eyes/FacialPalsy-patientinformation.pdf>

American Academy of Facial Aesthetics; <https://www.facialesthetics.org/patient-info/botox/>

Osbourne Head and Neck Institute; <https://www.parotid.net/freys-syndrome-treatment/>