INSIGHT
Special Edition
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BOTOX™

For elimination of brow frown lines and eyelid wrinkle lines (crows feet)

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With increase age, sleeping on the side of your face or even concentrating on a task, ridges and wrinkles occur in the skin perpendicular to the underlying muscle fibers. Such skin wrinkles and folds are caused by the repeated forces generated by the muscles in the area. With time these lines become more pronounced and tend to stay despite a good nights rest. Common examples are the vertical lines between the brows (Glabellar folds) and the multiple fine lines adjacent to the eye referred to as Crows feet. Glabellar folds have been managed by a variety of techniques including: surgery (brow lift with muscle removal, direct excision, dermabrasion and chemical peels). Treatment by injection, or implantation has also been performed using such things as collagen, silicone, fat, etc., to remodel the wrinkle line. Similarly crows feet have been treated by surgical techniques (blepharoplasty) as well as chemical peels, dermabrasion, laser resurfacing and collagen injections.

Botulinum toxin type A, or Botox™ , is a neurotoxin that when injected leads to a localized weakening of the muscle injected. It has been used extensively in the past for uncontrolled and debilitating blinking disorders such as blepharospasm and hemifacial spasm *(Figure 1a & 1b)*. Botulinum toxin injections have been a major break through for people with these diseases. It has allowed a significant reduction in their blinking and eyelid spasms, allowing them to function effectively at work as well as at home. With the widespread use of this medication for these disorders, an associated decrease in facial wrinkling was also noted as a result of the decreased muscle contraction in the eyelid area. This experience led to an interest in using the toxin for unwanted hyperkinetic facial lines such as brow furrows, excessive forehead fold lines and crows feet. *(Figure 2a & 2b)*

Is Botox related to Botulism (food poisoning)?

Botox is the trade name for botulinum toxin type A, one of several different toxins produced by *clostridrium bacteria*. The bacterium is found worldwide in earth and water and is normally inactive for years, but under certain conditions it activates and produces botulinum toxin. Such is the case when vegetable or meat products are contaminated by clostridium bacteria and stored in an air tight container. The bacteria itself is what can be harmful. When the *bacteria* is ingested, food

What is Botox?

Its the trade name for botulinum toxin type A, one of several neuro-toxins produced by a bacteria known as Clostridium. The bacterium is found worldwide in earth and water and is normally inactive for years, but under certain conditions it activates and produces botulinum toxin. This toxin when injected in *minute* quantities weakens the muscle in the area of injection. As a result the overlying wrinkled skin smooths. It is currently being used by over 100,000 people annually to help, eyelid spasms, decrease frown lines and facial wrinkles.

poisoning *(botulism)* occurs as a result of the bacterium producing hundreds of thousands of toxins. It is the overdose of toxins that can produce fatal paralysis. For correction of various wrinkle lines – it is the toxin (not the bacteria), in ***minute*** quantities that is injected.

How does Botox work?

When injected, the toxin temporarily weakens the muscles underlying the unwanted wrinkles and as a result smoothes out the overlying skin. It inhibits the release of neuro-transmitters (acetylcholine) at the neuro-muscular junction, producing a weakening of the injected muscle. With less contracting ability of the muscle, the overlying skin does not fold, avoiding the unwanted wrinkle lines. (Figure 2a & 2b)

How safe is the Botulinum toxin therapy?

The process is safe because the amounts used in therapy are only several billionths of a gram. The botulinum toxin remains largely at the point of injection and does not come in contact with sensitive areas like the liver, kidney or heart.

How much of it do you inject?

For wrinkles, an average of 10 or 20 units is used per site. Depending on how many areas one has injected, the dose may be 20 to 80 units. It would take 3,000 or 4,000 units to make one feel sick.

How long does the effect last?

The muscle weakening effect comes on in 24-48 hours and lasts 3 to 6 months, occasionally longer. In lower doses (as used for facial wrinkles) the treatment can be continued indefinitely, every 3 to 6 months as desired.

What are the potential side effects?

There are no persistant side effects. If the injected Botox seeps into the surrounding muscles, a muscle weakening effect could be seen ex. temporary eye lid droop can occur if the Botox injected into the brow furrow lines seeps below the eyebrow and hits the muscle that elevates the lid. This is quite a distance for the toxin to travel and is extremely rare (<1%). If the eyelid did drop, it is a temporary effect and starts to resolve in a matter of weeks. Botulinum toxin has been used extensively since 1985 for a variety of blinking disorders such as hemifacial spasm and blepharospasm. There are no known long term complications associated with it.

How much does it cost?

It runs from $250 to $500 per problem area. That's expensive, but no more expensive then collagen injections and with less risk of allergic reaction.

Would you use it on yourself or your spouse?

Yes, I have personally used it for 5 years in hyperkinetic brow furrow lines and am delighted with the results.

If you have any questions regarding the topic of this newsletter, please contact: Dr. David R. Jordan by telephone (613) 563-3800, fax (613) 563-1576 or e-mail at drjordan@magma.ca

Figure 1a – Patient with severe uncontrolled eyelid spasms (blepharo spasms).

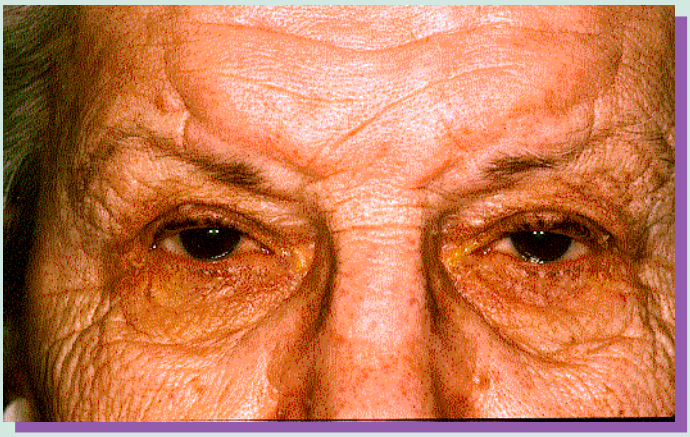

Figure 1b – Post Botox injection - ellimination of eyelid spasms.

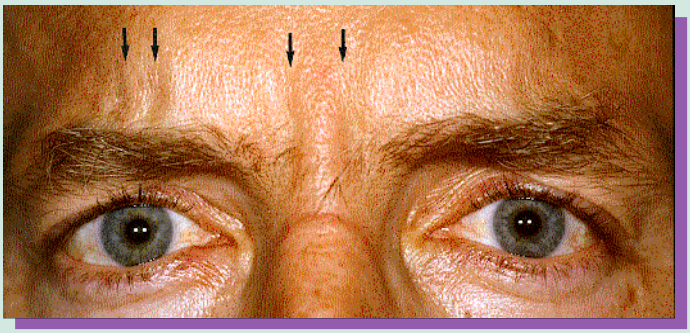

Figure 2a – Pre injection: unwanted frown lines (arrows).

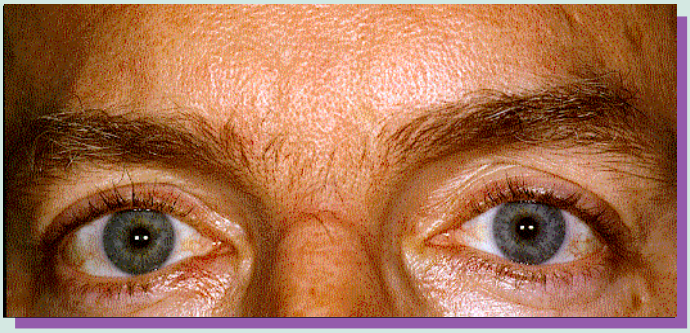

Figure 2b – 3 days post injection - absence of frown lines.