Patient comfort

- Chill skin with ice pack before treatment or Zimmer cold air
- Relaxed environment, spa like
- Reconstituted Botox or Dysport with preserved saline
- Topical anesthetic, 32 guage needle
- Distraction
- Fewer injection sites

Extra measure for sensitive patients...

The glabella often can have large follicular orifices. Building on the idea of injecting lidocaine for local anesthesia into Follicular orifices, which can often reduce pain, why not BoNTA?

Single physician injector, 12U per patient to the glabellar complex, 20 patients

Significantly reduced pain scores (p=.046) for right corrugator and trend toward significance in procerus and left corrugator

Intrafollicular orifice injection technique for botulinum toxin type A. Lewis T, Jacobsen G, Ozog D. Arch Dermatol. 2008 Dec;144(12):1657-8

Botox® (onabotulinumtoxinA) starting doses

<table>
<thead>
<tr>
<th>Area</th>
<th>Botox (BTX-A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forehead</td>
<td>20 U</td>
</tr>
<tr>
<td>Glabella</td>
<td>20 U (males may require more)</td>
</tr>
<tr>
<td>Crow's feet</td>
<td>12 U per side</td>
</tr>
</tbody>
</table>

Higher doses give longer results

- Comparing efficacy and safety of three doses of BTX-A in females with horizontal forehead rhytides.
- Improvements at all dosages (16U, 32U, 48U) Higher dosage gave longer duration
-Highest dose 48U (24U to forehead) greater efficacy and longer duration of effect.
Dosing BTX-A vs Dysport

- **Botox® (Onabotulinum-toxinA)**
  - 1 U
- **Dysport® (Abobotulinum-toxinA)**
  - 2-4 U


Complications

- Avoid ASA, NSAIDs if possible.
- Compression > ice after injecting
- Intradermal injections to avoid venous plexus at lateral orbital rim


Management of Crow’s feet

Three “Traditional” injection sites

- Single intradermal injection
- 12 U Botox per side
- Superficial bleb


Crow’s feet

Sadick N. The cosmetic use of botulinum toxin type B in the upper face. *Clinics in Dermatology* 2004;22:29-33

Crow’s feet – Our technique

- Single intradermal injection
- 12 U Botox per side
- Superficial bleb

Survey for Prominent Veins
Superficial Injections

Careful placement of single superficial injection in the middle of the crow's feet.

Single intradermal injection 36U each side Dysport® abobotulinum toxinA for “Crows Feet”

Crow’s feet pre-treatment

Crow’s feet post-treatment — requires higher doses

Complications

• Treatment of orbicularis oculi can lead to migration to zygomaticus major and minor muscles.
• Inability to raise ipsilateral lip.

Avoiding Purpura
- Counsel patient about the potential risk of bruising. Reminder at time of appointment
- Ensure that the patient is not at “high-risk”
  - No anti-platelet medications
    - ASA, NSAIDs, coumadin, herbal or vitamins
  - No h/o bleeding disorder

Hemostasis
- Apply immediate pressure to injection site
- Have patient or assistant hold pressure for several minutes
- Consider ice-packs

Forehead

Injection Technique: Wide Brow
Forehead
- Treat 1-2 cm above orbital rim to minimize risk brow ptosis
- Less toxin to lateral forehead
- 16 U onabotulinum-toxinA (Botox®)

Forehead
- Treat 1-2 cm above orbital rim to minimize risk brow ptosis
- Less toxin to lateral forehead
- 48 U abobotulinum-toxinA (Dysport®)

Forehead - Before

Forehead - After

“Ideal” male eye brow, positioned at the supra-orbital rim with an almost horizontal shape.

“Ideal” female eye brow, with a gentle pubis-arch shape.

Elderly may compensate for blepharochalasis with frontalis muscle.
- Caution with botox near brow
- Less like to use in elderly
Complications “Nicholson/Spock”

- Insufficient placement toxin lateral forehead allows unopposed elevation lateral brow.
- Correction: 3-4U Botox or 9-12U Dysport at lateral brow.


Leonard Nimoy as “Spock” Star Trek 1966

BoTXA: Brow Lift

Glabella – “Traditional” injection sites

Glabella – Our Technique

Botox dosing glabella

• Comparison of efficacy, safety and duration of effect of four doses BTX-A in glabellar rhytids in females.
• 20-40U of BTX-A is significantly more effective than 10U for reducing glabellar lines.

Glabella – Our Technique

• Single injection into each corrugator
• 20U Botox or 60U Dysport average dose in females

Glabella – Our Technique

• Single injection into each corrugator
• 20U Botox or 60U Dysport starting doses in females
Glabella – Before 20U onabotulinum toxinA

Glabella – After 20U onabotulinum toxinA

Glabella – Before 24U onabotulinum toxinA

Glabella – After 24U onabotulinum toxinA

- Males may require more toxin due to larger corrugator muscle

Glabella-post treatment


Complications
- Eyelid ptosis
- Prevention-inject 1 cm above orbital rim


Glabella – needle direction
- 30 patients total (15 placebo), 10U to each corrugator
- 15 placebo patients crossed over to receive BTX.
- Injection delivered upward & lateral-(1/10) 10% ptosis,
- Injection delivered downward & medial-(2/5) 40% ptosis


Blepharoptosis
- Blepharoptosis in 5.4% (11/203) of patients.
- 4 cases of moderate blepharoptosis with average duration 40 days.
- No cases of complete ptosis.

Blepharoptosis
- Open label phase 3 clinical trial of 1200 subjects receiving new BTX-A (Reloxin) over 13 months.
- 45 subjects had a total of 55 events of ptosis during the study after 4,214 treatments with BTX-A (1.3%).


Treatment lid + brow ptosis
- Apraclonidine 0.5% or phenylephrine 2.5% ophthalmic solution, 1-2 drops to affected eye TID.
- (Apraclonidine 1% also available: may consider increased dose and/or frequency.)
- Alpha-adrenergic receptor agonist
- Müller muscle: upper eyelid smooth muscle innervated by sympathetic nerves producing 1-2 mm eyelid elevation

Treatment of eyelid ptosis

- 48y/o female with eyelid ptosis after Botox-A.
- History of allergic reaction to alpha-adrenergic eyedrops.
- 60 mg oral pyridostigmine with 4-8 hours of relief of ptosis
- Slows breakdown of acetylcholine in neuromuscular junction
- Caution with S.E. of hypersalivation, N/V, diarrhea.


Botulinum toxin and the facial feedback hypothesis: can looking better make you feel happier?

Given: BoNTA treatments of the face can dampen negative expressions

Facial feedback hypothesis: "facial expressions ... can themselves create the internal and biologic experience of emotions."

Therefore: alterations that lead to more positive facial expressions may induce certain positive emotional states

Also given: Emotional contagion is when one person's emotions can be transmitted to another person

Conclusions: positive facial expressions aided by BoNTA lead to more positive internal emotions + happiness in those around the patient, and may result in improved mood and quality of life

Alam M, Barrett KC, Hodapp RM and Arndt KA JAAD 2008; 58: 1061 review

Conclusions

- Botox or Dysport work equally well
- Patient satisfaction hinges on results and comfort, perception, listening
- Avoid complications by preventing bruising, less injections and knowing the anatomy
- Dosage can affect how long it lasts and complications
- rmoy@ucla.edu

Advances in facial rejuvenation: botulinum toxin type A, hyaluronic acid, dermal fillers, and combination therapies--consensus recommendations.

Group of 20 experts, in review article format, examined:

- any treatment paradigms led to combination HA and BoNTA on different facial zones examined rejuvenation in different ethnic groups

Pearls:

- 80% of the consensus group now use HA fillers (malar augmentation) in combination with BoNTA in the periorbital region.
- Group recommends using filler in the temporal hollow with BoNTA in the tail of the time to enhance normality. Broadening skin over skin organ can result in 20 units BoNTA can flatten mentalis and HA can smooth transitions.

Carruthers JD Glogau RG Blitzer A Plast Reconstr Surg 2008; 121:5s

Treatment of crow’s feet

- Counsel patients on the potential risk of bruising at the time of appointment
- Survey for prominent veins
- Place injections superficially and use one injection site
- Immediate pressure post-injection
- Ice packs

Botulinum toxin A can positively impact first impressions.

Photos of botox patients were taken in smiling and relaxed Poses both before and after BoTNA treatment

Significant increases in first impression scores were seen in the BoNTA treated group for dating success, attractiveness and athletic success, but not occupational success

Conclusion - Without BoNTA, I can still look ugly and be successful at in my practice?

The effect of botulinum toxin type A on full-face intense pulsed light treatment: a randomized, double-blind, split-face study.

Randomized, double blind, split face study of 8U in 8 injections of BoToA to one cheek and saline to the other side after full face IPL (560nm)

Wrinkles and fine lines improved in cheeks treated with both modalities. Trend (not reached significance) toward improvement in erythema in side treated with both modalities. Neurovascular neuropeptides?

Carruthers J & A similar study on crow’s feet treated with Btx and full face IPL in Derm Surg 2004 show better response to treatment when both modalities used.

Khoury JG, Sainju R, Goldman MP
Dermatol Surg 2008; 34:1062

Improvement in both Raynaud disease and hyperhidrosis in response to botulinum toxin type A treatment.

Potential - the rationale of botulinum toxin type A in hyperhidrosis treatment. Off-label use of BoNT/A to one hand with the other being a negative control

• The mechanism of BoNT/A reduction in hyperhidrosis was a significant improvement in Raynaud symptoms.

• BoNT/A-treated hand had reduced excitation, color change, and pain versus control hand.

• Improvement in Raynaud symptoms had some results.

• BoNT/A mechanism of Raynaud disease?