Putting Botulinum Toxins and Facial Fillers into Practice

Sirtaz S. Sibia, D.O., FAOCO
Orlando, Florida May 2013
Approach to the cosmetic patient

- Anatomic areas of concern to the patient
  - Give the patient a mirror and have them point out what bothers them
- History of previous treatment
- Document patient’s anatomy
- Educate the patient about treatment options
  - Botox Cosmetic, Dysport, Xeomin, Restylane, Perlane, Juvederm, Radiesse, etc.
Basic Physician Knowledge of Botulinum toxins

- Botulinum toxins Indications
  - Temporary improvement in the appearance of moderate to severe glabellar lines
  - Corrugator and/or procerus activity
  - Adults ≤ 65 years

- Administering physicians
  - Be well trained
  - Have knowledge of muscles controlling facial expression
  - Understand the dynamics of aging
  - Be qualified to evaluate and determine individual treatment
Botulinum Toxin Overview

- BOTOX® Cosmetic, Xeomin and Dysport are purified, natural proteins derived from the bacterium Clostridium botulinum.

- Botulinum toxins works by blocking acetylcholine impulses that trigger hyperactive muscle contractions.
Botulinum Toxin vs. The Aging Face

- Glabellar frown lines
- Horizontal forehead lines
- Periorbital lines (Crow’s feet)
- Lateral brow lift
BOTOX® Cosmetic Packaging

- Store vacuum-dried product in refrigerator (2-8°C).
- Administer within 4 hours after reconstituting product.
- Store reconstituted product at 2°C to 8°C.
- BOTOX® Cosmetic should be clear, colorless and free of particulate matter.
- Supplied in a single patient use vial.
Dysport Packaging

- Store vacuum-dried product in refrigerator (2-8°C).
- Administer within 4 hours after reconstituting product.
- Store reconstituted product at 2°C to 8°C.
- Dysport should be clear, colorless and free of particulate matter.
- Supplied in a single patient use vial.
Botulinum systemic side effects

- Rare
  - Usually not associated with cosmetic indications
- Generalized weakness
- Flu-like symptoms
- Diffuse skin rash
- Headache
Botulinum Contraindications

- Pregnancy and breast feeding
- Disorders of the neuromuscular junction
  - Myasthenia gravis
  - Myopathies
- Aminoglycoside therapy
  - May impair neuromuscular transmission and are a theoretical contraindication
Botox/Dysport Preparation

- 1 cc syringes
  - Insulin syringe with pre-attached 30 guage needle vs. separate syringe and needle
- 30 gauge needle
- Digital camera
- Consent form
- Postop instructions
Anesthesia for Injections

- None
- Ice, ethyl chloride
- Emla, ELA-Max, Betacaine
Botox/Dysport Preparation

- Botulinum toxin needs to be reconstituted with sterile, preservative free saline
- Refer to Botulinum toxin by units not volume
### Botox: Vial Dilutions

<table>
<thead>
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<th>Saline</th>
<th>U/ml</th>
<th>U/0.1 ml</th>
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<tr>
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<td>5.0</td>
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<tr>
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## Dysport: Vial Dilutions

<table>
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<th>U/0.1 ml</th>
</tr>
</thead>
<tbody>
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<td>20.0</td>
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<tr>
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</table>
Documentation of Botox treatments

- Botulinum toxin injection worksheet
- Before and after photographs
- Make good notes on how many units injected for each site to help improve results for future Botox/Dysport / Xeomin treatments
BOTOX<sup>R</sup> Injection Worksheet

Patient Name: _______________________________ DOB: _________ Date: _________

Treatment Areas: ☐ glabella ☐ forehead ☐ periorbital ☐ perioral ☐ other

BOTOX<sup>R</sup>: Lot _________ Expiration _________ Conc’n _________

☐ The risks, benefits, and alternatives of Botox injections were discussed with patient.
☐ Botox<sup>R</sup> was administered after alcohol skin prep and topical anesthesia placement.
☐ Patient tolerated procedure well and there were no complications.

Return appointment: ___________________
Key Muscles of the Upper Face

- Corrugator Supercilii
- Procerus
- Frontalis
- Orbicularis Oculi
Discussing BOTOX® Cosmetic, Xeomin or Dysport with your Patients

- BOTOX® Cosmetic/ Dysport/ Xeomin is a natural, purified protein that relaxes wrinkle-causing muscles, creating a smoothed and improved appearance.

- BOTOX® Cosmetic/ Dysport/ Xeomin is administered via a few tiny injections of purified protein into the muscle to block nerve impulses that trigger wrinkle-causing muscle contractions.

- BOTOX® Cosmetic/ Dysport/ Xeomin is a simple and quick, minimally invasive treatment that delivers dramatic results with no downtime.
Discussing BOTOX® Cosmetic, Xeomin, and Dyport with your Patients

Don’t

“fixed”, “frozen”, “paralyzed”, “deaden”,
“needles”

Do

“smooth”, “relax”, “refresh”, “tiny injection”, “soften”
Botulinum Toxin Marketing

- **Internal marketing**
  - Botox/Dysport/Xeomin brochures
  - Treat office staff with left over Botox/Dysport

- **External marketing**
  - Traditional advertising
  - Spas, salons, gyms, health clubs

- **Pricing**
  - “Botox Days”
Glabellar Frown Lines

- Rhytids (wrinkles) between the brows
- Produced by
  - corrugator
  - procerus
  - orbicularis oculi
  - depressor supercilli
Before and After: Glabella
Glabellar line treatment

- 5 injection sites:
  - 1 in procerus
  - 2 in each corrugator
- Total dose:
  - Botox/Xeomin: 20 U (4U/injection site)
  - Dysport: 50 U (10 U/injection site)
Decrease in Glabellar Lines after Treatment with BOTOX® Cosmetic

Baseline

Day 30

Unretouched clinical trial photos taken while frowning before BOTOX® Cosmetic and after BOTOX® Cosmetic. Individual results may vary.
Potential complications of glabellar treatments

- Bruising
- Brow Ptosis
- Diplopia
- Eyelid Ptosis
  - Treat with Naphcon A or Iopidine, the alpha agonistic activity stimulates Mueller’s muscle which lifts the lid and compensates for the loss of the levator
Why use Botulinum in glabella vs. fillers

- Occlusion of cutaneous vessels (Zyplast)
- Blindness (Collagen, fat, triamcinolone)
- Cerebrovascular occlusion (fat)
Forehead Lines

- Rhytids (wrinkles) across the forehead
- Produced by
  - *frontalis muscle*
Before and After: Forehead
Forehead line treatment

- **Botox/Xeomin**: 2 U/site
- **Dyport**: 5U/site
  - to prevent eyelid ptosis, injections should be at least 1 cm above the supraorbital rim and away from the area above the lateral eyebrow
Potential complications of forehead treatments

- Bruising
- Brow Ptosis
- Eyelid Ptosis
Periorbital Lines (Crow’s Feet)

- Rhytids (wrinkles) radiating from the lateral canthus, especially when a person smiles
- Produced by
  - orbicularis oculi
Before and After: periorbital lines
Periorbital line treatment

- Botox/Xeomin: 3 U per site
- Dysport: 8 U per site
- Inject 1 cm away from orbital rim
- To prevent bruising in this area use intradermal or subcutaneous injections
Potential complications of periorbital treatments

- Diplopia
- Keratitis
- Ectropion
- Epiphora
- Weakness of zygomaticus muscle
Lateral Brow Lift

- Performed mainly for female patients
- Treat the lateral brow depressors so the brow elevators work unopposed
Before and After: lateral brow lift
Lateral Brow Lift Treatment

- 4 units Botox/Xeomin
- ★ 3 units Botox/Xeomin
- ◆ 2 units Botox/Xeomin

- treat just like you do the glabellar lines
- add an additional 2 units into the orbicularis oculi 1-2 cm lateral to the orbital rim and at the tip of the eyebrow
Postop Instructions

- Do not lie down for the next 4 hours
- Do not lean over for the next 4 hours
- Do not touch or massage the treated areas in any fashion for at least 4 hours
- Immediately after the injections, frown and smile repeatedly for the next 15 to 30 minutes
Fillers: Temporary, Semipermanent, and Permanent

- **Temporary Fillers**
  1. Less durable and enduring
  2. Biodegradable
  3. Bovine Collagen: Zyderm and Zyplast
  4. Human dollagen: Cosmoderm and Cosmoplast
  5. Hyaluronic acid: Restylane, Perlane, Captique, Hylaform, Juvederm Ultra
  6. Fat fillers

- **Semipermanent fillers**
  1. Slowly biodegradable
  2. Liquid Silicone: Silikon 1000
  3. Polylactic acid: Sculptra
  4. Calcium Hydroxylapatite: Radiesse
  5. Fat fillers

- **Permanent fillers**
  1. Nonbiodegradable
  2. Polymethylmethacrylate: Artefill, Artecoll
  3. Fat fillers
Collagen Implants: Zyderm and Zyplast

- FDA approved in 1981 and 1985, respectively
- Bovine collagen implant
- Pros: safe, reliable, user-friendly, contains lidocaine
- Cons: allergic reaction, redness, swelling, skin test is required, and a second skin test is recommended
- Recommended use: fine to deep wrinkles, frown lines, smile lines, crow’s feet, lip border, acne and other scars
Collagen Replacement: Cosmoderm and Cosmoplast

- FDA approved in 2003
- Pros: immediate results with no down time
- Cons: short-lived correction
- Recommended use for Cosmoderm: superficial papillary dermis for correction of wrinkles and acne scars
- Recommended use for Cosmoplast: mid to deep dermis for correction of wrinkles and acne scars
Synthetic Calcium: Radiesse

- FDA approved in 2006
- Volume composition made up of 70% carboxymethylcellulose and 30% calcium hydroxylapatite
- Pros: no allergy testing, long shelf life, longevity once injected
- Cons: nodules common, especially in lips, mistakes no easily forgiven
- Recommended use: nasolabial folds, depressed scars, oral commissures
Synthetic Poly-L-Lactic Acid: Sculptra

- FDA approved in 2004
- Synthetic poly-L-lactic acid
- Pros: long-lasting, long safety record as an implant/suture material
- Cons: approved for HIV lipodystrophy only; granulomas have been reported
- Recommended use: filler for HIV lipodystrophy-related atrophy; and mild volume loss
Polydimethylsiloxane: Silikon 1000

- FDA approved in 1997
- Purified polydimethylsiloxane
- Pros: low biological toxicity potential, inert material
- Cons: approved for retinal tamponade during vitreoretinal surgery only, requires multiple treatments
- Recommended use to treat facial lipoatrophy in patients with HIV
PMMA/Bovine Collagen: Artecoll and ArteFill

- FDA approved in 2006 (Artefill)
- Made up of 20% precision-filtered polymethylmethacrylate microspheres and 80% purified bovine collagen
- Pros: long-lasting, must be injected correctly
- Cons: skin testing required, contraindicated with allergies, thin skin surgical excisions required for removal, multiple treatments required
- Recommended use: nasolabial folds
Hyaluronic Acid: Captique

- FDA approved in 2004
- Bacterial fermentation-derived hyaluronic acid
- Pros: safe, reliable, user-friendly, predictable results, no allergy testing
- Cons: rare allergic reactions, post-injection swelling, pain
- Recommended use: moderate to severe facial wrinkles
Hyaluronic Acid: Restylane

- FDA approved in 2003
- Bacterial-cultured stabilized hyaluronic acid
- Pros: safe, reliable, user-friendly, predictable results, no allergy testing
- Cons: rare allergic reactions and particles may lead to uneven distribution
- Recommended use: superficial defects, lips, lines, contouring for moderate to severe wrinkles
Hyaluronic Acid: Perlane

- FDA approved in 2007
- High-viscosity bacterial-cultured hyaluronic acid
- Pros: excellent for deeper folds requiring a thicker filler, fills deep folds with less material than Restylane
- Cons: rare allergic reactions
- Recommended use: shaping facial contours, defining cheeks, eliminating deep folds and enlarging lips
Hyaluronic Acid: Juvederm Ultra and Ultra plus

- FDA approved in 2006
- Bacterial-cultured stabilized hyaluronic acid
- Smooth-consistency gel
- Pros: safe, reliable, user-friendly, no allergy testing
- Cons: temporary injection-site redness and tenderness
- Recommended use: lips, lines, contouring moderate wrinkles
Importance of HA fluid retention

- Hyaluronic acid is a naturally occurring polysaccharide(sugar).
- The most important characteristics of hyaluronic acid relevant to its performance as a dermal filler is its fluid retention, i.e., water binding capabilities.
Possible side effects and complications with fillers

- **Early**
  1. Bruising
  2. Swelling
  3. Pain
  4. Herpes
  5. Overcorrection
  6. Undercorrection
  7. Necrosis
  8. Hematoma

- **Late**
  1. Allergic reaction
  2. Asymmetry
  3. Scarring
  4. Nodules
  5. Granulomas
  6. Elevations
  7. Migration
  8. Lumping
Before and After Fillers
Filler for tear troughs
Before and After Fillers in Lips
Before and After Fillers in Lips
Before and After Fillers in Lips
Removal of Fillers from Lips
Removal of Fillers from Lips
Removal of Fillers from Lips
Latisse for hypotrichosis

- Latisse is FDA approved to grow eyelashes, making them longer, thicker and darker.
- Applied at night to the upper eyelid margins at the base of the lashes.
- Patients with a history of abnormal intraocular pressure need to be supervised by their ophthalmologist.
Latisse: Side Effects

- May cause darkening of the eyelid skin.
- May cause increased brown pigmentation of the iris.
- May cause itching sensation or redness of the eyes.
- May cause dry eyes.