Botulinum Toxins: Complications

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Disclosures

- **Research**
  - Allergan
  - Dermira
  - Galderma
  - Evolus
  - Ulthera/Merz
  - Revance
  - Sienna

- **Advisor/consultant**
  - Allergan
  - Dermira
  - Galderma
  - Merz
  - Unilever
Multicenter prospective cohort study 3/28/11-12/30/11

7 private & 1 academic practices

23 dermatologists

Data acquisition was 3 months per center

20,399 cosmetic procedures
<table>
<thead>
<tr>
<th>Procedure Type</th>
<th>Total Procedures Performed</th>
<th>Procedures Resulting in Adverse Events</th>
<th>Rate of Procedures Resulting in Adverse Events, %</th>
<th>Total No. of Adverse Events</th>
<th>Adverse Event Rate, %</th>
<th>Most Common Adverse Event</th>
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<tbody>
<tr>
<td>All lasers and energy devices</td>
<td>9759</td>
<td>11</td>
<td>0.11</td>
<td>13</td>
<td>0.13</td>
<td>Hyperpigmentation</td>
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<td>All lasers</td>
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<td>0.09</td>
<td>9</td>
<td>0.11</td>
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<td>Pulsed-dye laser</td>
<td>2226</td>
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<td>Uceration</td>
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<td>Q-switched ruby, Nd:YAG, alexandrite</td>
<td>2174</td>
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<td>Hyperpigmentation</td>
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<td>Fractional non-carbon dioxide</td>
<td>1156</td>
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<td>2</td>
<td>0.17</td>
<td>Persistent erythema</td>
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<tr>
<td>Long pulsed</td>
<td>463</td>
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<td>0</td>
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<td>1527 nm</td>
<td>452</td>
<td>0</td>
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<td>Potassium-titanyl-phosphate</td>
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<td>Fractional carbon dioxide</td>
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<td>Diode</td>
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<td>Er:YAG</td>
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<td>Mid-Infrared</td>
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<td>1.56</td>
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<td>1.56</td>
<td>Persistent purpura</td>
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<td>Nonfractional carbon dioxide pulsed</td>
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<td>Yttrium-scandium-gallium-garnet</td>
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<td>Intense pulsed light 500-1200 nm</td>
<td>596</td>
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<td>0.34</td>
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<td>Hyperpigmentation, burn</td>
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<td>All radiofrequency</td>
<td>461</td>
<td>1</td>
<td>0.22</td>
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<td>0.22</td>
<td>Burn</td>
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<td>Monopolar</td>
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<td>0</td>
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<td>Other noninvasive radiofrequency</td>
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<td>Invasive radiofrequency</td>
<td>18</td>
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<td>5.56</td>
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<td>Bipolar</td>
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<td>Ultrasound</td>
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<td>Cryolipolysis</td>
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<td>1</td>
<td>0.39</td>
<td>1</td>
<td>0.39</td>
<td>Persistent dyesthesia</td>
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<tr>
<td>All neurotoxins and fillers</td>
<td>10,630</td>
<td>25</td>
<td>0.24</td>
<td>35</td>
<td>0.33</td>
<td>Lump, nodule, beading</td>
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<tr>
<td>All fillers</td>
<td>4430</td>
<td>23</td>
<td>0.52</td>
<td>33</td>
<td>0.74</td>
<td>Lump, nodule, beading</td>
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<td>Resylane (Valeant/Galderma)</td>
<td>1637</td>
<td>5</td>
<td>0.29</td>
<td>8</td>
<td>0.47</td>
<td>Lump, nodule, beading</td>
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<td>Juvederm Ultra (Allergan)</td>
<td>1549</td>
<td>8</td>
<td>0.52</td>
<td>8</td>
<td>0.52</td>
<td>Lump, nodule, beading</td>
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<tr>
<td>Sculptra (Valeant/Galderma)</td>
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<td>0.56</td>
<td>2</td>
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<td>Lump, nodule, beading</td>
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<td>Radiesse (Merz Aesthetics)</td>
<td>379</td>
<td>3</td>
<td>0.79</td>
<td>9</td>
<td>2.37</td>
<td>Occlusion, nacrost</td>
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<td>Juvederm Ultra Plus (Allergan)</td>
<td>343</td>
<td>3</td>
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<td>3</td>
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<td>Lump, nodule, beading; granuloma; filler migration</td>
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<tr>
<td>Perlane (Valeant/Galderma)</td>
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<td>1.23</td>
<td>1</td>
<td>1.23</td>
<td>Sign or symptom of infection</td>
</tr>
<tr>
<td>Fat</td>
<td>15</td>
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<td>0</td>
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<td>Silicone</td>
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<td>1</td>
<td>16.7</td>
<td>2</td>
<td>33.3</td>
<td>Lump, nodule, beading; granuloma</td>
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<td>Arion FILL (Suneva Medical)</td>
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<td>0</td>
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<td>None</td>
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<td><strong>All neurotoxins</strong></td>
<td><strong>6200</strong></td>
<td><strong>2</strong></td>
<td><strong>0.03</strong></td>
<td><strong>2</strong></td>
<td><strong>0.03</strong></td>
<td><strong>Hematoma, pusts</strong></td>
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<tr>
<td><strong>Onabotulinum toxia A</strong></td>
<td><strong>4624</strong></td>
<td><strong>2</strong></td>
<td><strong>0.04</strong></td>
<td><strong>2</strong></td>
<td><strong>0.04</strong></td>
<td><strong>Hematoma, pusts</strong></td>
</tr>
<tr>
<td><strong>Abotulinum toxia A</strong></td>
<td><strong>1576</strong></td>
<td><strong>0</strong></td>
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<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>None</strong></td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>20,399</strong></td>
<td><strong>36</strong></td>
<td><strong>0.18</strong></td>
<td><strong>48</strong></td>
<td><strong>0.24</strong></td>
<td><strong>Lump, nodule, beading</strong></td>
</tr>
</tbody>
</table>

*Some procedures resulted in more than 1 type of adverse event.*
Asymmetries

Crows feet
2699 photos
1392 subjects

**Full-fan Pattern:** Lines that project from the lateral canthal area and extend into both the superior malar area and the tail of the brow

**Lower-fan Pattern:** Lines predominantly confined to the lateral canthal area and the superior malar area

**Central-fan Pattern:** Lines predominantly confined to the lateral canthal area and not extending into the superior malar area or lateral third of the brow

**Upper-fan Pattern:** Lines predominantly confined to the lateral canthal area and extending toward or into the lateral third of the brow

Kane M et al. Heterogeneity of Crow’s Feet Line Patterns in Clinical Trial Subjects. Derm Surg 2015;41:447-56
Asymmetries

Figure 2. Distribution of CFL fan patterns at maximum smile and at rest. Full fan, lower fan, and central fan were the most commonly observed patterns at almost equal proportions.
Asymmetries

Figure 5. Relationship between gender and CFL fan patterns at maximum smile and at rest. Males predominantly exhibited lower fan, and females exhibited almost equal distribution among lower fan, full fan, and central fan.
Blepharooptosis

- Inferior corrugator injection
- Weaken superior tarsal (Müller) & levator palpebrae superioris
- Apraclonidine BID- TID
  - (α-adrenergic agonist)

Glaser
Persistent Blepharoptosis

- Retrospective review 7 patients
- Referred for significant ptosis post BTX-A
- Lasted 6 weeks – 13 months
- 6/7 treated with apraclonidine drops -- was “initially ineffective at significantly improving eyelid position”
- Was effective a few weeks before ptosis resolved

Blepharoptosis

38 yo 6 days post 25 units BTX-A
In forehead and along eyebrow

4 month
Improved
Responsive to apraclonidine

9 month visit
MDR1 2.5 mm each side
?slight ptosis still right


Glaser
Blepharoptosis

54 yo at consultation
Had filler and BTX-A at another office

1 week returns with bilateral ptosis

Apraclonidine started helping at 2 months
Resolved at 3 month visit

Steinsapir KD et al. Persistence of Upper Blepharoptosis after cosmetic BTXA.
Derm Surg. 2015;41:833-40
Complications

- Headache 1% ¹
  - 11% BTX & 20% placebo treated subjects²
  - Mild, OTC analgesics

- Double vision-Lateral Rectus
  - Improves 7-10 weeks
  - Ophtho consult-eye patch, prismatic lenses

1. Alam M et al. Severe intractable headache. JAAD 46;62-6, 2002
Complications

- Incompetent mouth
- Dysphagia or voice changes
  - Monitor for airway competence
  - Rec’d total dose 40-60 u ona per neck treatment

Preventing Complications

- Know anatomy
- Observe patient
- Photograph
- Review risks before treatment
- Stop bleeders
- Have patient return to optimize outcomes