## Frontalis Injection with Botulinum Toxin

127

## Jemshed A. Khan

Frontalis injection is useful in treated horizontal forehead wrinkles.

Injection sites are at least 2.0 cm above the eyebrows to avoid a ptotic or adynamic and expressionless eyebrow. Injection is delivered across the medial and lateral frontalis to avoid segmental eyebrow elevation. Two injections per side is usually a good starting point, which may be increased to ten sites depending upon patient response.

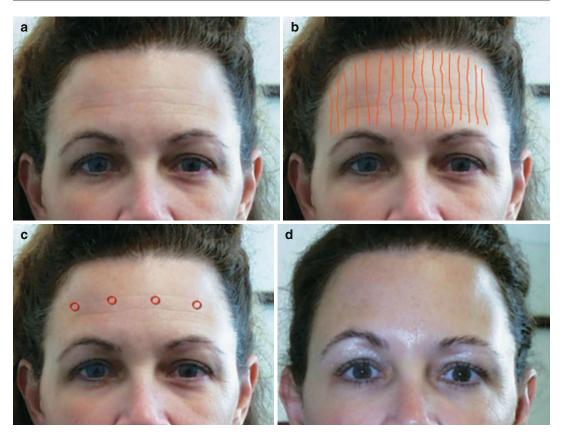
Prior to injection, search for any underlying eyelid ptosis with compensatory eyebrow elevation. Forehead injection and the resulting eyebrow depression may worsen an underlying eyelid ptosis in such patients (Fig. 127.1).

## **Frontalis Treatment Keys**

- Frontalis is a paired muscle.
- · Connected to the occipitalis muscle.
- Frontalis action raises the eyebrows and furrows the forehead.
- Emotional signal created by frontalis action is surprise.
- Usual injection dose is 1.5–4.0 units per site.
- Usually 4–10 injection sites per patient depending upon frontalis activity.
- Use proper technique to avoid brow ptosis.
- Use proper technique to avoid adynamic eyebrows.

Reprinted from Chen WPD, Khan JA, McCord, Jr, CD. *Color Atlas of Cosmetic Oculofacial Surgery*. Philadelphia, PA: Butterworth Heinemann/Elsevier; 2004. With permission from Elsevier.

J.A. Khan, MD Department of Ophthalmology, Kansas University School of Medicine, Kansas University Medical Center, Kansas City, MO, USA



**Fig. 127.1** (a) Note horizontal forehead furrows prior to injection. (b) *Red lines* depict the frontalis muscle location. (c) Four injection sites of 1.5–4.0 units per site is a

safe beginning dose. ( $\mathbf{d}$ ) Smooth forehead appearance 2 weeks following injection