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## 8

# Neurotoxin Injection for Smile Lines and Crow's Feet

Difficulty: ●

Patient satisfaction: ●●

Risk: ●

## Indications

Smile lines and crow's feet are two of the most commonly sought-after areas for treatment with BoNTA. To soften or eliminate wrinkles around the lateral and inferior orbit, injection of the orbicularis oculi muscles can prevent movement-related creasing of the overlying skin associated with expression and baseline muscle tension. Neurotoxin injection will not improve static wrinkles or deep creases due to photoaging.

## Anatomic Considerations

The orbicularis oculi muscle surrounds the eye and is separated into three divisions: pretarsal, preseptal, and orbital. The orbital portion extends laterally and is intimately adherent to the overlying skin. Contraction of this muscle results in lines extending radially from the lateral canthus. As the overlying skin thins and ages, crow's feet become visible in the skin from repeated muscle contractions.

## Injection Technique

Topical anesthesia may be used and ice may be applied, though neither is necessary in

most cases. Three to four injections of BoNTA are placed radially in the area of the crow's feet. A total of 8 to 20 BU or 20 to 60 DU may be placed in each side. Care should be taken to inject 1 cm lateral to the bony orbital rim, especially above the canthal angle, as upper lid lag can occur. It is helpful to place a finger of the noninjecting hand at the lateral orbital rim as a guide.

The muscle is superficial, so the needle does not need to be placed deep into the subcutaneous tissue. Because of the wide zone of effect for BoNTA, a superficial dermal injection will minimize bruising without compromising clinical results.

## Precautions

The periocular area often has many superficial and deep venous structures that may or may not be visible through the surface of the skin. Trying to avoid them will keep the toxin from being washed away and also prevent bruising.

## Post-Injection Instructions

This is a highly vascular area, so bruising is possible. If a vessel is injured, hold firm pressure for a minute or two to minimize bruising. Ice packs used after injection may also minimize bruising, if necessary.

## Risks

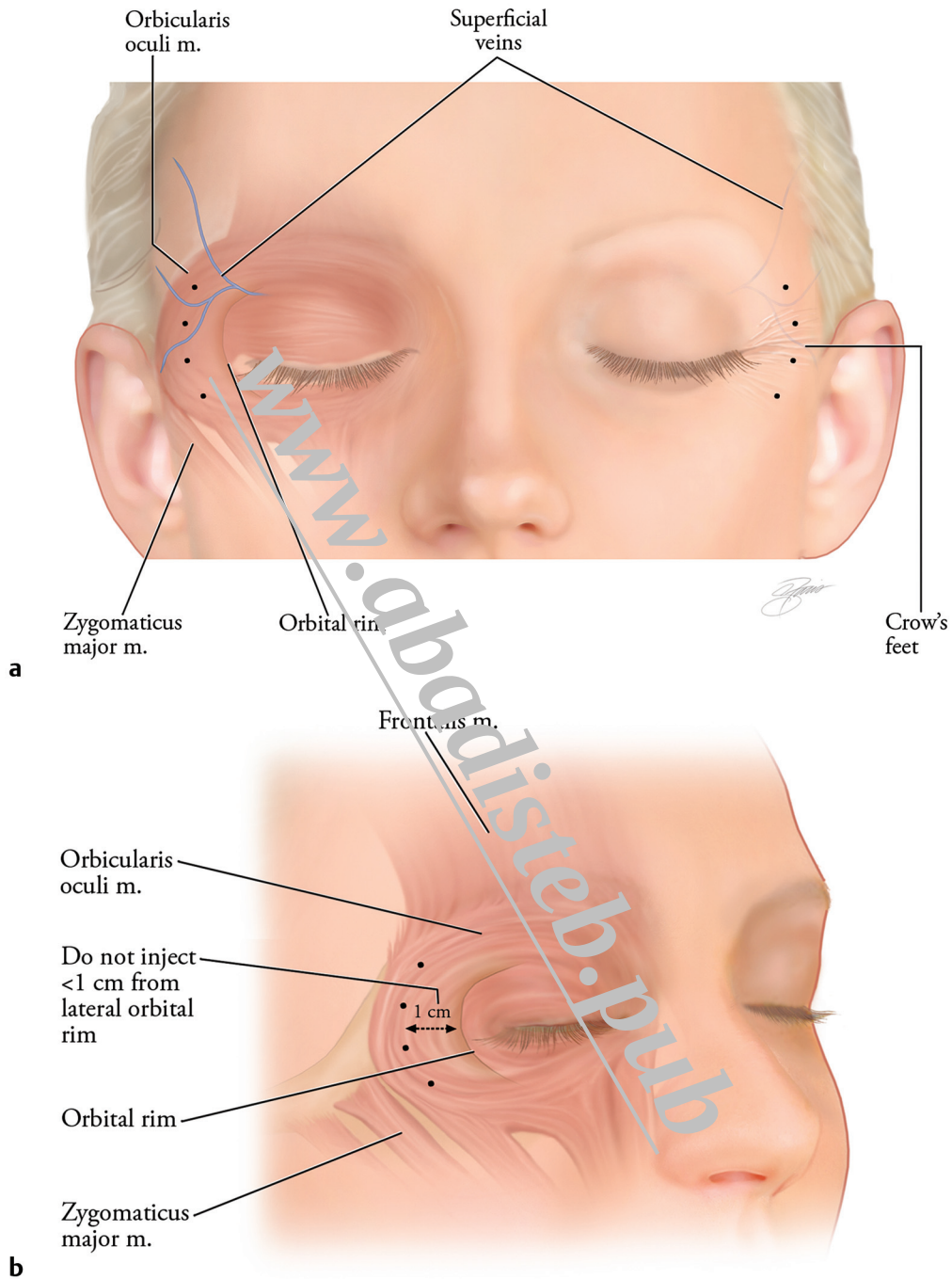
Extending the injections too far inferiorly and too deep under the orbicularis can affect the zygomaticus major muscle and result in an upper lip droop or asymmetric smile. Patients should be made aware that injections cannot be extended too inferiorly in this area. Some patients will note an accentuation of

lines in this region once the lateral lines have been treated.

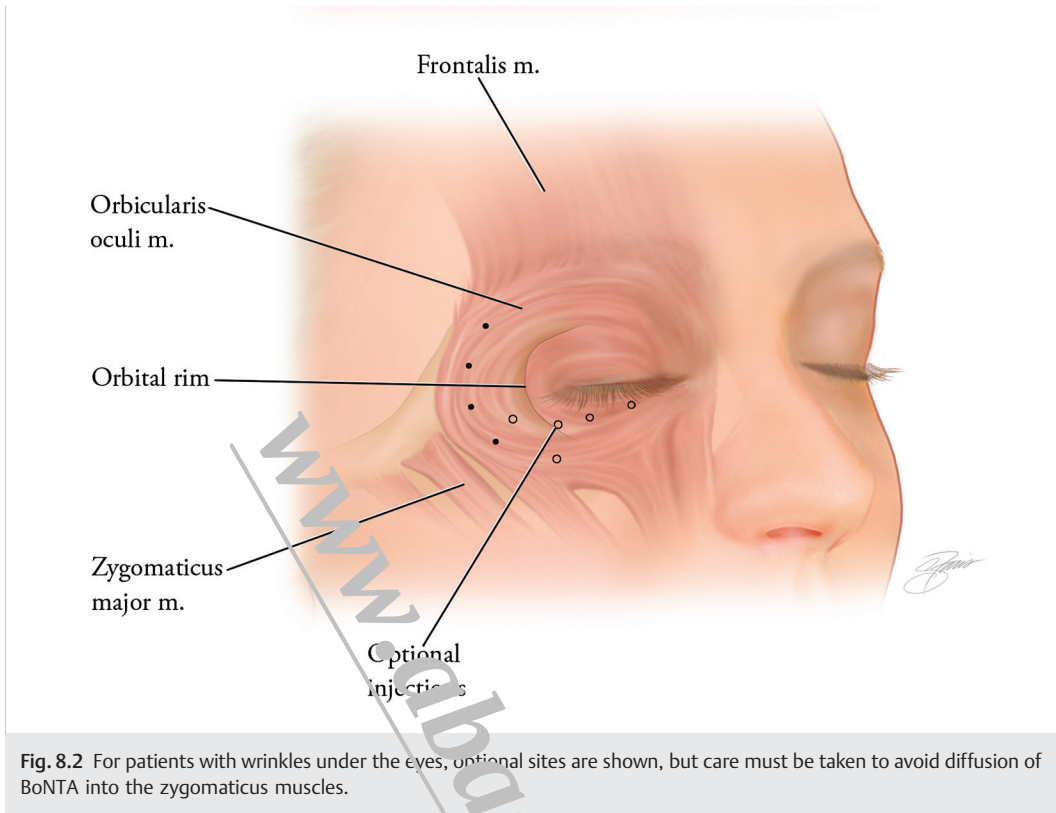
## Pearls of Injection

- It is acceptable to have some movement with full expressive action of the muscle.
- Because of the wider zone of effect, some practitioners prefer BoNTA-ABO (Dysport) in this area.

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**Fig. 8.1 (a,b)** Injections to treat the crow's feet are traditionally placed subcutaneously into the orbicularis muscle in a radial fashion 1 cm outside the lateral orbital rim. Avoid injection into the superficial veins seen in that region.



## Additional Reading

- [1] Carruthers A, Bruce S, de Coninck A, et al. Efficacy and safety of onabotulinumtoxinA for the treatment of crow's feet lines: a multicenter, randomized, controlled trial. *Dermatol Surg.* 2014; 40(11):1181–1190
- [2] Carruthers J, Fagien S, Matarasso SL, Botox Consensus Group. Consensus recommendations on the use of botulinum toxin type A in facial aesthetics. *Plast Reconstr Surg.* 2004; 114(6 Suppl):1S–22S
- [3] Kim DW, Cundiff J, Toriumi DM. Botulinum toxin A for the treatment of lateral periorbital rhytids. *Facial Plast Surg Clin North Am.* 2003; 11(4):445–451