

Mild to Moderate Dysphagia Following Very Low-dose Abobotulinumtoxin A for Platysmal Bands

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ABSTRACT

Onabotulinumtoxin A (Botox) can be a safe and successful off-label treatment of vertical platysma bands of various severities. Due to risk of the botulinum toxin diffusing to the underlying anatomic structures such as the deglutition muscles, the larynx, and the neck flexors, a maximal dose of 100 units has been suggested and there have been no known reports of untoward effects with doses less than 60 units. We present a case of mild to moderate dysphagia in a patient after very low doses of Abobutulinumtoxin (60 units, equivalent to 20 units of Onabotulinumtoxin using a 3:1 conversion ratio). We speculate that the adverse effects noted may be due to several possibilities, such as diffusion, injection technique, or intravascular injection. Thus, although botulinum toxin-A is generally considered a safe off-label treatment for vertical platysma bands, readers should still be aware of the possible side-effects even with low dose use, as supported by our case report of mild to moderate dysphagia with relatively conservative doses of Abobotulinumtoxin A.

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CASE REPORT

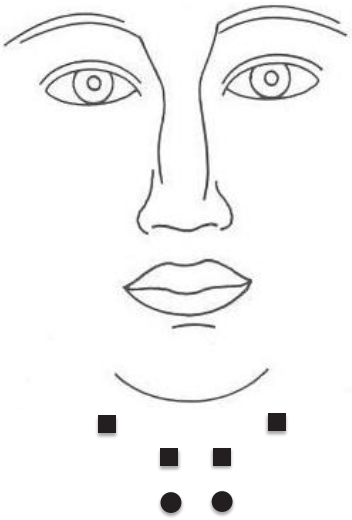
Onabotulinumtoxin A (Botox) can been a safe and successful off-label treatment of vertical platysma bands of various severities,[1] using between 30-100 units and 250 units for moderate to severe platysma bands, respectively. Apprehension exists in using higher doses of botulinum toxin in the thin platysma muscle, since diffusion of the neurotoxin can occur to the underlying anatomic structures such as the deglutition muscles, the larynx, and the neck flexors. Carruthers et al. reported side effects of dysphagia and weakness in neck flexors with using above 75 units of Onabotulinumtoxin A,[2] as well as one case report of severe dysphagia requiring nasogastric tube feeding for 6 weeks after only 60 units of Onabotulinumtoxin platysma injection.[3] While a multidisciplinary French consensus suggests a maximum of 100 units of Onabotulinumtoxin even for severe platysma banding,[4] many use 30-50 units of Onabotulinumtoxin per treatment session[5] and suggestions are that a dose of less than 30 units is not associated with significant adverse effects.[6] In our practice, we use comparably conservative doses of Abotulinumtoxin A (Dysport), anywhere from 24 units to 72 units (equivalent to 8 to 24 units of Onabotulinumtoxin A, respectively, based on a 3:1 unit dose conversion ratio).

We report a case of a 60-year-old female treated with Abobotulinumtoxin A in the anterior and lateral vertical platysma bands with a total of 60 Abobotulinumtoxin A units at a dose equivalence of 3:1 units to Onabotulinumtoxin A (equivalent to 20 units of Onabotulinumtoxin A). A 300-unit vial of Abobotulinumtoxin A was diluted with 2.5 mls of sterile, preservative-free saline. Six injections were made into the upper portion of the platysma muscle (Figure 1) by grasping the muscle between the thumb and index finger and inserting a 31G insulin syringe halfway to the hub of an 8mm needle: one 12-unit (4 units of Onabotulinumtoxin A) injection for each lateral band, and one 12-unit and one 6-unit injection along the anterior vertical bands spaced 1-1.5cm apart. About two weeks after the injection, the patient reported mild to moderate dysphagia with swallowing food but more so with large sips of liquid. Her symptoms included not being "able to eat fast" and the need to "gulp to swallow". On examination, the patient was able to talk and smile normally as well as swallow her saliva without difficulty. Her platysma bands were diminished greatly. By 1 month out, the symptoms had improved slightly but were not fully resolved.

Until this case, we commonly used low dose Abobotulinumtoxin A for platysma banding in our practice with no significant side effects and it has not been reported in the literature at such low equivalent doses of Onabotulinumtoxin A.[6] We speculate that the adverse effects noted may be due to several possibilities: diffusion, injection technique, or intravascular injection.

It is possible that Abobotulinumtoxin A has a greater diffusing capacity (or field effect) compared to Onabotulinumtoxin A, as has been described by some authors at a 2.5:1 dilution ratio.[7] Furthermore, the field effect may even be greater since we are using a 3:1 unit conversion ratio, which according to some practitioners may be too strong of a dilution ratio. Nonetheless, even if we used the 1.7:1 unit dose conversion ratio as

FIGURE 1. Injection pattern.



suggested by Rystedt et al.,[8] the equivalent Onabotulinumtoxin A units utilized in our patient is still only around 35 units, which is significantly below the acceptable maximum 100 Onabotulinumtoxin A units recommended in the neck and still less than the upper limit of units used by many authors.

Another possibility is that our technique of injecting into the muscle belly instead of using a "bleb" technique, as done by other specialists, may cause increased diffusion to deeper structures. However, we pinch the muscle as we inject it, thus lifting it away from deeper structures making this less likely as an explanation.

Lastly, inadvertent intravascular injection and subsequent spread may be a mechanism that most likely accounts for the side effects in this patient. In prior studies of Rimabotulinumtoxin B for axillary hyperhidrosis[9], 7 of 20 subjects (35%) experienced mild to moderate dry mouth lasting from 2 to 38 days. Furthermore, 5 of 20 subjects (25%) experienced dry eyes lasting 2 to 128 days. The distant nature of the side effects from the treatment sites may be suggestive of systemic diffusion rather than local diffusion.

Although botulinum toxin-A is generally considered a safe off-label treatment for vertical platysma bands, one should still be aware of the possible side-effects even with low dose use, as supported by our case report of dysphagia with relatively conservative doses of Abobotulinumtoxin A.

DISCLOSURES

The authors have no conflicts.

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