Sodium Deoxycholate for Contouring of the Jowl: Our Preliminary Experience

Sodium deoxycholic acid (DCA; KYBELLA in the United States and BELKYRA in Canada; Allergan Inc., Irvine, CA) is the first minimally invasive injectable treatment approved by the Food and Drug Administration and Health Canada for the nonsurgical reduction of submental fullness. When injected subcutaneously into fat, DCA causes adipocytolysis and stimulates neocollagenesis for subsequent localized reduction of adipose tissue and tightening of the overlying skin.[1,2] Early observation suggests that DCA may also be an effective treatment for prominent fat in the jowl and squaring of the jawline, a common cosmetic complaint in older female patients. Investigators have previously shied away from injecting the fatty jowl out of concern that treatment could affect marginal mandibular nerve function. This case series presents the authors' positive experience using DCA for this off-label indication in a small group of patients.

Patients and Methods

Patients with a mild to moderate fatty jowl were considered eligible for treatment. Standardized photographs were taken before and at each follow-up visit after treatment. Patients were made aware of the possibility of marginal mandibular nerve dysfunction before signing informed consent. Deoxycholic acid was injected using a needle into the subdermal fat at the registration dose of 2 mg/cm^2. The 4 patients treated by one author (J.C.) admixed 1 mg/mL triamcinolone acetonide to reduce post-treatment swelling. To increase the distance between point of injection and the location of the marginal mandibular nerve, the skin was pinched and pulled away from the bone before injection. Each patient received 2 to 5 injections per side depositing 0.2 mL per dot for a total of 0.4 to 1.0 mL per side. Patients were treated with or without concomitant treatment of the submental region with DCA and/or other treatments in the face and neck reflecting clinical practice patterns.

Results

Eighteen women and one man with mild to moderate fatty jowl were treated with DCA. Patients received 1 to 3 treatments (15 patients had a single treatment, 1 patient had 2 treatments, and 2 patients had 3 treatments). Patients were seen for follow-up between 1 and 12 weeks after treatment. Patients ranged in age from 56 to 64 years. The addition of DCA produced meaningful improvements to the jowl prominence and contouring of the jawline in all 18 patients, even after a single treatment (Figures 1 and 2). Side effects were minimal. Neither author noted any socially relevant swelling. One subject presented 1 day after DCA injection to both submental fat (SMF) and jowls with an asymmetrical smile and presumed marginal mandibular nerve injury. The asymmetry was mild, did not bother the patient, and resolved completely within 6 weeks without treatment or sequelae.

Discussion

Anatomical study of the jowl has deepened the understanding that aging across the mandibular border is a multifactorial process in which deflation of soft tissue, changes in position of fat compartments, and septal dehiscence lead to changes in contour, laxity, and the accumulation of subcutaneous fat under the jaw.[3] The fatty jowl has been traditionally treated surgically. In this small group of 18 patients, DCA reduced subcutaneous fat in the jowl and tightened the overlying skin, recontouring the shape of the jaw and providing a smoother mandibular margin without significant side effects. Deoxycholic acid has been previously avoided in the jowl due to fears of affecting the marginal mandibular nerve that crosses the mandible roughly at the position of the jowl. In this case series, only one subject developed an asymmetrical smile owing to changes in mandibular nerve function that completely resolved over time. Careful attention

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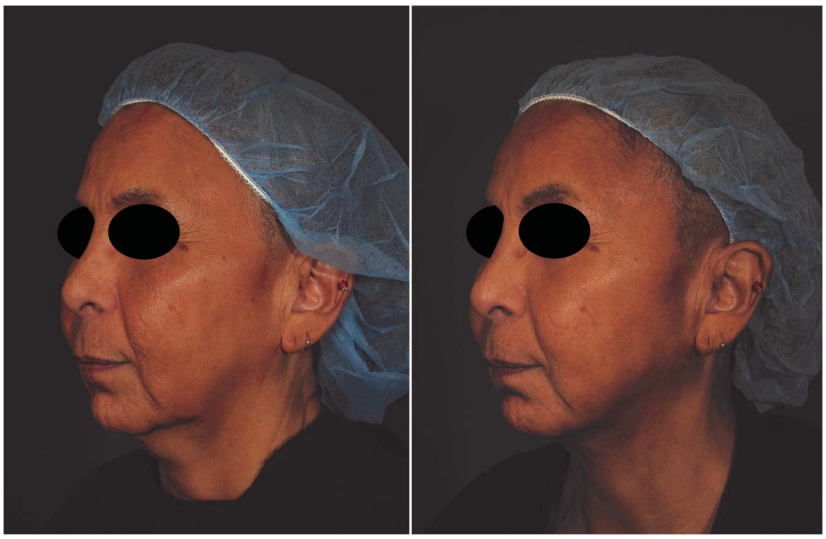

Figure 1. Sixty-two-year-old woman before and 8 weeks after, 2 treatments (1 SMF only and 1 SMF and jowls), total 11 mLs DCA (12 lb weight gain). No concomitant treatments were performed. DCA, deoxycholic acid; SMF, submental fat.

to injection technique, in which the skin is pinched and pulled back from the bone to increase the distance between the nerve and the point of needle entry, may reduce the risk of inadvertent injection. We believe that the conservative dosing in the jowl region may contribute to the low incidence of motor-nerve injury. Interestingly, despite conservative dosing, all our 18 patients were observed to have some clinical improvement after even a single treatment.

To date, the authors have treated more than 230 subjects over 400 sessions with DCA. However, its integration into clinical practice for submental fullness has been tempered by treatment-related swelling and downtime, the need for multiple treatments, and cost which relates to total dose. In this small group of patients, treatment of the jowl with DCA resulted in minimal swelling, and all patients required fewer treatment sessions with very small volumes to produce meaningful improvements, which effectively addresses primary objections to DCA for SMF.

The results of these early observations are promising and may encourage a higher adoption rate of DCA into a combination strategy for the lower face. Deoxycholic acid in the jowl is not a stand-alone procedure but is more effective when integrated into a multimodal approach to contour the jawline, submental region, and neck as recommended by the current treatment paradigm for facial rejuvenation.[4] Combination interventions for best results include hyaluronic acid fillers along the jawline, skin-tightening procedures to the lower face and neck, such as radiofrequency or microfocused ultrasound, and

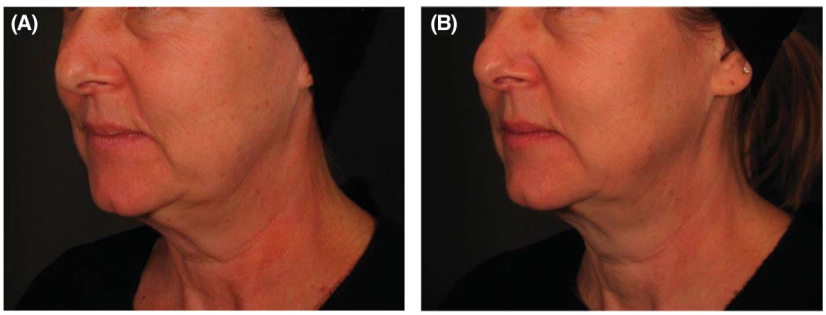

Figure 2. (A and B) Fifty-six-year-old woman before and 8 weeks after, 1 treatment (SMF and jowls), 4.8 mLs DCA (no weight change). DCA, deoxycholic acid; SMF, submental fat.

neuromodulators to the platysma and depressor anguli oris.

Conclusion

In this small case series, DCA led to meaningful improvement in the appearance of the fatty jowl with minimal side effects and minimal downtime. The use of DCA in this region represents an important addition to jawline contouring. These early observations of an off-label treatment require vigorous clinical trials to further characterize dosing, response rates, and safety profile.

Please note as of April 27, 2018 the authors have performed 78 jowl treatments with DCA using the discussed technique. We have not observed any additional cases of marginal mandibular nerve paresis.

References

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