Editorial

Addressing the "double chin:" trends in submental contouring

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Editorial

The dreaded "double chin" is a result of excess submental fat. This appearance is often psychologically dissatisfying to patients and as such, they seek consultation to adjust their submental profile to a more aesthetically pleasing one.[1,2] A recent survey of patients demonstrated that 77% of patients presenting to their dermatologist or plastic surgeon were concerned about submental fat, and 61% of patients wanted it reduced.[1] Bothsurgical and non-invasive options are available; however, finding the right approach is of the utmost importance to yield the best possible outcome. Often times, multiple modalities are used to address the various components of the aging face. Injectable fillers, liposuction, laser lipolysis, and a host of other methodologies can be combined to rejuvenate the face.[3]

Liposuction is commonly used to address submental fullness. This method, however, is dependent on the quality of the patient's skin. Injury to the marginal mandibular nerve as well as over suctioning of the fat can lead to contour irregularities. Additionally, isolated submental liposuction may not address submental fullness and the aging face fully; thus, a cervicoplasty consisting of an open liposuction and platysmaplasty is considered superior.[4,5] Laser lipolysis is often performed with liposuction to achieve facial rejuvenation. The Nd: YAG or CO_2 laser may be used by selecting single or multiple wavelengths to target the submental fat. Because of the unfavorable side effect profile associated with the thermal damage induced by the laser, this modality is not popular amongst aesthetic surgeons. Moreover, the surgeon must be careful not to damage the marginal mandibular nerve.[6,7]

Microfocused ultrasound is a method that delivers mechanical energy to disrupt the adipocytes. Using a non thermal, lower frequency setting increases patient tolerability. This method targets the dermis and can be used in all skin types safely to achieve skin tightening. In contrast, using higher-frequency ultrasound is far more painful and intolerable for most patients.[8,9]

Monopolar, bipolar, or unipolar radiofrequency devices may be used to deliver heat in a selective fashion to the submental fat. The radiofrequency mode used determines the penetration depth. Unlike higher-frequency ultrasound, which may produce longer periods of downtime, radiofrequency use results in virtually no downtime, and transient side effects have been reported.[10–12] Cryolipolysis, a non-invasive modality, has recently received FDA approval in the use of submental fat treatment. This technique is based on the supposition that adipocytes, which are more prone to cooling than other skin cells, are cooled such that apoptosis is triggered. Moreover, inflammation begins a cascade that leads to macrophage digestion of the fat.[13] Prior to FDA approval, a study by Kilmer et al. followed 60 patients with complaints of excess submental fat. These subjects were treated with the Cool Mini applicator and followed for 12 weeks. At the time of their survey, 83% of subjects were satisfied, 77% reported visible fat reduction, 77% felt that their appearance improved following the treatment, and 76% found the procedure to be comfortable. No adverse events from the treatment were noted.[14] Intriguingly, although the procedure is well tolerated and safe, there has been a recent report of paradoxical adipocyte hyperplasia as a delayed side effect. In such a case, liposuction treatment of the affected region may be required.[15]

An extension of injectable fillers has recently been approved for the chin with the advent of ATX-101 or deoxycholic acid. The mechanism of action of this injection is through its bile acid properties of emulsifying and solubilising fat. The product promotes adipocyte lysis through disruption of the cell membrane.[16,17] The REFINE-1 and REFINE-2 studies demonstrated that ATX-101 significantly reduced submental fat in comparison to placebo. Furthermore, patients reported a high level of self-perceived improvement after the treatment.[18] The product was generally well-tolerated with few patients reporting adverse events.[16,18]

Excess submental fat may make the patient appear overweight and/or older. As a result, these patients seek treatment to address their displeasing "double chin." Many modalities are at the disposal of the surgeon to address the patient's complaint, and at times, these techniques may be combined to achieve the optimal result for the patient. Through these methods described herein, the patient is able to obtain a stronger appearing chin that increases self-confidence. Two newer techniques, crypolipolysis, and the injectable fat-dissolving product, ATX-101, demonstrate promising results for these patients.

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Conflict of interest

The author declares no conflict of interest.

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