

Anatomic Features of Lower Face: Some Insights on Using Fillers. Lower Face Volumizing

Our issues No. 1 and No. 3, 2016, offer articles dedicated to the nuances of volumization on upper and middle face. Now, let us focus on the lower part of the face.

Natalia Mikhaylova, MD, PhD, dermatologist, cosmetologist, associate professor at Pirogov Russian National Research Medical University, actual member of American Academy of dermatology (AAD) and American Society for Laser Medicine and Surgery (ASLMS), President of National Society of Mesotherapy (Russia), Chief Physician of Reforma clinics by Dr. Natalia Mikhaylova

Irina Parfenova, Dermatologist, Venerologist, Cosmetologist, head of clinical research unit at Martinex, Moscow

Clinical presentation of lower face aging

Lower face is a zone located between a line passing through the apophysiary point and the mandibular contour (Fig. 1). Aging in this area is more intensive than in other parts of the face because of intense mimic and functional activity. The women who seek plastic surgery are especially concerned about such aging problems in this area as worsened facial contours, sunken cheeks, nasolabial and labiomental folds, downturned mouth, perioral wrinkles and thinning of the lips.

Dr. Daniel C. Baker, an American plastic surgeon, has suggested a clinical classification intended to objectify the degree of aging changes in this area (Fig. 2).

- First stage: slight decrease in neck skin elasticity, insignificant second chin. Mandibular contour unchanged.
- Second stage: moderate decrease in neck skin elasticity, distortion of mandibular contour, significant second chin.
- Third stage: moderate decrease in neck skin elasticity, pronounced distortion of mandibular contour, decreased platysmal tone.
- Fourth stage: fragile, atonic neck skin with deep circular wrinkles; pronounced distortion of mandibular contour, pronounced second chin, pronounced platysmal bands.

There are two mechanisms of how soft tissues can age: loss of volume and gravitation ptosis. To come up with the right action plan, the doctor should have a clear understanding of which one of these mechanisms prevails in a specific case.

Loss of volume usually happens in the temporal area, middle third of face, perioral area, and middle part of the cheek. Neck and lower cheeks are the common zone for gravitation ptosis.

Should there be a deficit of volume due to subcutaneous fat atrophy or skin resorption, the procedure of choice is definitely volumization, consisting in restoring the lacking volumes by means of filler injection.

In case of gravitation ptosis, the main tool of a cosmetologist is lifting, which means actually lifting the soft tissues, returning them to their initial position and fixing

them in place if this is possible. Patient management is organized on a case-to-case basis, depending on the prevailing mechanisms of the ptosis and the severity of the symptoms.

The methods used to handle gravitation ptosis can be classified into the ones stimulating collagen formation and skin turgor, the ones decreasing the fat deposits, the ones adding volumes where necessary, the ones redistributing the facial volumes and, finally, the ones affecting muscular activity.

Since ptosis can be due to so many reasons, volumizing is not a universal tool. It should be remembered that lower face aging is a multi-factor process and that handling aging changes here normally requires a comprehensive approach involving several methods at a time.

Also, aging changes of lower face go hand in hand with aging of middle face. When performing volumizing in order to have a lifting effect, one should always start with the cheekbone and suborbital areas.

Volumizing of one area almost always improves the condition of the adjacent one which is structurally related to it.

Fig. 1. Thirds of the face.

Fig. 2. Types of lower face aging according to D. Baker.

Mechanism of lower face aging

The key factor affecting the changing aspect of the face during aging is the remodelling of facial skull bones, as well as atrophy and redistribution of subcutaneous fat.

Facial soft tissues include hypoderm as part of the skin and the adipose tissue. While the hypoderm covers the underlying soft tissues in a sufficiently uniform manner, the deeper-lying adipose layer, according to Coleman, Rohrich and Pessa, is fragmented and consists of separate compartments, isolating and protecting blood vessels and nerves. With age, deep fat tissue undergoes significant changes. Different compartments change in different ways, including atrophy, hypertrophy, prolaps, or downshift (2, 6, 7). For instance, the relocation of fatty tissue in the cheeks is followed by the deepening of nasolabial folds and stronger deformation of facial contours (Fig. 3).

Atrophy of the alveolar process and displacement of the dental axis, loss and displacement of teeth often result in the formation and deepening of a fold between the lower lip and the chin (Fig. 4) (5, 8).

Hypertension of the depressor muscle of angle of the mouth, atrophy of the underlying tissues, downshift of the adipose tissue of the mandibular area account for the formation and deepening of labiomental folds (marionette lines).

Face deformations can also be due to hypertension of muscle bundles (aging markers) and weakening of the ligaments, resulting in the caudal displacement of adipose compartments. According to the Face Recurve concept brought forward by plastic surgeon C. Le Louarn, the main reason for the displacement of facial adipose tissues consists in the repeating mimic movements. When relaxed, mimic

muscles have a protuberant shape, while when tensed, they draw straight and press against the bones. In people of age, muscles become constantly overtensed, therefore shortening and straightening. Deep adipose tissues become extruded into the space right under the skin. This results in the formation of infraorbital grooves, nasolabial folds, marionette lines, smiling wrinkles and neck bands. Thus, the formation of all these folds is both related to changing skin relief and to the protrusion of adipose tissues. For instance, m. depressor anguli oris contributes to the creation of the marionette lines, while adipose tissue from the deep fat compartment of the cheek, forced by this muscle toward the surface, forms a jowl. This said, a plan of the aging correction program for a specific patient should take account of the multi-faceted nature of the facial aging process and include procedures responsible for both volumizing and muscle tone and skin quality improval (4).

Fig. 3. Displacement of cheek adipose tissue, followed by the aggravation of nasolabial folds.

Fig. 4. Aging remodeling of osseous structures.

Patient management

Before the procedure, the doctor should have a talk with the patient in order to find out his/her special concerns. It is a must to talk about the extent of the necessary intervention, which by no means always coincides with the patient's opinion.

Most patients need a detailed insight into the low efficiency of the procedures that only serve to even out wrinkles and folds (2D approach to facial rejuvenation). A patient may not always understand the benefits of the volumizing strategy from the very beginning so he/she may need an explanation (Fig. 5).

Some time ago, indeed, emphasis was laid on eliminating skin folds and wrinkles, and facial rejuvenation procedures were basically intended to do two things: remove wrinkles and improve skin color/texture. However, as a new look was taken on the aging processes, it became clear that the intervention should be way more significant: the main objective was now to restore soft tissues volume and compensate for the effects of aging atrophy of osseous structures.

After the extent of the supposed intervention is defined, the next step is always the photographic documentation (lower face issues are best seen with patient sitting upright); then, the patient signs the informed consent form, and the cosmetologist can now start the treatment.

The following is to be done for correct performance of the procedure:

- define/delineate/mark out the treatment area
- choose the most efficient and best-matching injection technique (with needle or with cannula)
- for a cannula, choose the safest and best accessible injection point
- choose the type and amount of product to be used
- apply anesthesia where necessary
- inject the right amount of the product into the selected area to the planned depth

- do a modeling massage

This article covers the procedures intended to treat the majority of lower-face problems following this protocol.

Fig. 5. A: Result of labiomental wrinkle filling only (2D approach); B: wrinkle filling and mandibular angle volumizing (3D approach).

Submalar cheek area

In the cheek area, the need for volumizing is usually based on lipodystrophy, from slight atrophy to severely sunken cheeks. Such cheeks make the face look exhausted (Fig. 6). Also, subcutaneous fat in this area serves as a support for covering tissues. Adipose tissue loss results in the creation of excessive skin, contributing to the formation of the nasolabial fold, somehow hanging over it. In this case, just eliminating the nasolabial folds is not enough; the procedure of choice should be cheek area volumizing.

In order to replete the volume deficit in the cheek area, HA gel of medium or high viscosity and high plasticity is used. Patient is in the seated position; the maximum impaction area is found and the access point is decided upon. This point should be a starting point for injecting the product into the entire area to be treated. In case there is a more pronounced impaction, the injection point is to be located laterally from the impaction area (or directly under the malar arch or from the mandibular angle) (Fig. 7). In elder patients, there is usually more cheek area impaction in the mesial part, in combination with nasolabial folds. In this case, the most convenient access point is at the beginning of the nasolabial fold. From there, it is possible to both inject the product into the cheek area and treat the nasolabial folds (Fig. 8).

The product is injected subcutaneously in a linear-retrogressive fan technique (Fig. 9).

The fan technique allows injecting a fairly large amount of the filler; the way how it is distributed along the vectors means that a fixed, not excessive volume of it can be injected into each filler. This prevents filler migration. Usually, 1-3 ml are injected on each side during one procedure. The volume of the injected gel may be increased to 5 ml where necessary. In case there is a severe deficit of soft tissues in the cheek area, the filler may be injected using the crossing-vector technique. This allows filling the entire depression area completely and evenly.

The depth of injection corresponds to the adipose tissue (i.e., the doctor shall be able to see the outlines of the cannula after introducing it into the tissues). The cheek area has no bone support; in a layer-by-layer manner, it has the following structure: skin; subcutaneous fat; superficial fascia; platysma; mimic muscles; proper facial fascia; cheek muscle; quaggy submucosal tissue; mucosa (Fig. 10). If the gel is injected deeper than the subcutaneous fat, it will get into the intermuscular space. High mimic activity will just "squash" the injected substance, therefore no volume shall actually be restored (Fig. 11).

It should be remembered that sunken cheeks may also be a consequence of lacking teeth. If so, the patient should be warned that the dental problem has also to be handled in order to get optimum results. Facial rejuvenation usually means giving

the face a somewhat "childish" look, including chubby cheeks, jawbone accent, smoother temples and plush lips. However, in some cases young patients seek something completely different: a thinner- and somehow rougher-looking face. Some of them want to have their sucking cushions removed.

The creation of cheek shadows is one of the key moments for forming a rugged-looking face. A small amount of filler (up to 0.5 ml) injected over the shadow area, where the sunken part begins, creates the effect of a step. This is how we get our "lantern jaws". Changing the injection path is a way to create a specific optical effect: a straight line is intended to correct a wide, round-shaped face, while a smoothly curved one is good for a narrow face.

Fig. 6. Cheek lipodystrophy

Fig. 7. Marking before correction of lateral cheek impaction.

Fig. 8. Impaction of cheek area with a depression near the nasolabial folds.

Fig. 9. Marking before correction of impaction in cheek area and nasolabial folds.

Fig. 10. Layer-by-layer structure of cheek area.

Fig. 11. Result of volumizing in cheek area.

Nasolabial folds

Nasolabial folds are a standard indication for 2D correction with intradermal fillers. However, it is not always possible to achieve the desired result by just injecting the product in the classic manner. In some cases (Fig. 12), one has to inject the filler deeper (subcutaneous or supraperiosteal):

- deeper nasolabial folds
- a gradient nasolabial fold
- skin fibrosis after multiple intradermal injections near nasolabial fold
- "horse-face" structure of perioral area (deep impaction near nose alae and protruding dentition)

For the purpose of treating nasolabial folds, the product is always injected from top downward. High-viscosity HA-based fillers are used for subcutaneous injection. Medium-viscosity preparations are likely to biodegrade much faster when injected subdermally, failing to produce sufficient volumizing effect.

For the purposes of correcting nasolabial folds using an atraumatic cannula, the access point should be located at the beginning of the fold (0.3-0.5 cm above the angle of mouth) (Fig. 13). The cannula is then injected subcutaneously (its contour shall be visualized when cannula is lifted slightly) until the tip of the cannula reaches the nasal alar. That can feel uncomfortable but it is necessary to insert the cannula to this point, since the preparation is delivered from the side hole, not from the tip of the cannula. If it does not touch the cartilage of the nasal alar, then the

medicine shall be delivered below the area of the deepest impaction of the nasolabial fold, and the correction will be incomplete.

After the cannula is injected, the preparation shall be injected in a linear-retrograde manner as the cannula exits the tissue, within the impaction area only. It is important not to inject the product into the part protruding over the nasolabial fold! This is the nasolabial fat compartment that never loses its volume. Should any additional HA gel be introduced in this area, this will only aggravate the protrusion over the nasolabial fold.

The injection using an atraumatic cannula is the safest, quickest, and most painless way to perform the procedure. However, there is also an option to introduce the filler supraperiosteal into the piriform fossa, provided that it is done slowly (Fig. 14). Caution should be used when doing the injection with a needle. The needle should be inserted deeply and straight down in order to avoid injection of the preparation into the lumen of a vessel or near the vessel (angular branch of facial artery in the upper part of the nasolabial fold), resulting in its compression and subsequent ischemia. It is necessary to perform the aspiration before introducing the needle. Then, one can start injecting the preparation.

Let us focus on the most dangerous parts of lower face. These, first and foremost, are related to the course of the facial and angular arteries and veins (Fig. 15).

The facial artery (*A. facialis*) starts from the external carotid artery and is one of its anterior branches. It passes within the fossa carotica and the submalar triangle, rounds the edge of the mandible passing between this edge and the submandibular salivary gland next to the anterior edge of the masseter muscle, and heads for the medial angle of the orbit. It is projected from the insertion of the anterior masseter muscle into the edge of the mandible to the medial angle of the orbit. On its way through the face, the artery forms its mental, inferior and superior labial, and transverse branches. Near the nasolabial fold, the facial artery quite often passes through the subcutaneous fat right below the impaction area. This is why, if one opts for bolus injection with a needle, it is safer to make supraperiosteal injections (below the layer where the artery passes) and always do an aspiration test.

The facial vein (*v. facialis*) is located behind the artery and is more straightforward. The vein is formed near the medial angle of the orbit by the supratrochlear, supraorbital and external nose veins as an angular vein. The latter anastomoses with the superior ocular vein, heads downwards and outwards, and merges with the superior labial vein. This venous vessel is joined by the deep facial vein, transversal vein, inferior labial vein, and mental vein. Then, the facial vein passes over the surface of the submandibular salivary gland and anastomoses with the retromandibular vein.

To work safely in the lower face area, one should, first and foremost, pay attention to the transversal vein that crosses the cheek area broadwise at the middle of the nasolabial fold. The transversal vein usually lies deep but in about 20% of the cases it can lie close to the subcutaneous fat. This is to be kept in mind when forming the injection duct while working in the cheek area. Should this vein be injured, a hematoma may appear. Therefore, the puncture should be made either above or below the projection of the transversal vein (access points as described above).

Getting back on the topic of nasolabial folds volumization, the patient should be warned that no complete smoothing of the fold is to be expected, because this would look unnatural.

Isolated correction of deep nasolabial folds in patients with obvious excess of skin is not efficient. In this case, there is need for combination of this procedure with volumizing of cheeks and cheekbone area. The patient should be warned about that, too. The subcutaneous fat has a far bigger capacity than the derm, therefore about twice as more preparation shall be needed in this case to volumize the nasolabial area than in case of intradermal injection.

The advantages of nasolabial folds volumizing are that the procedure does not last long, is atraumatic and almost painless, and does not require anesthesia or rehabilitation (Fig. 16).

Fig. 12. Example of nasolabial folds for volumization.

Fig. 13. Plan of nasolabial folds correction with a cannula.

Fig. 14. Correction of nasolabial folds using a needle (subcutaneous injections)

Fig. 15. Topology of facial arteries and veins. 1 - parietal emissary vein; 2 - frontal branches of superficial temporal artery and vein; 3 - parietal branches of superficial temporal artery and vein; 4 - superficial temporal artery and vein; 5 - auricular branch of superficial temporal artery and vein; 6 - mastoid emissary vein, mastoid branch of occipital artery; 7 - occipital artery and vein; 8 - posterior auricular artery; 9 - retromandibular vein; 10 - external jugular vein; 11 - facial vein; 12 - external carotid artery; 13 - internal carotid artery; 14 - internal jugular vein; 15 - common carotid artery; 16 - lingual artery and vein; 17 - facial artery and vein; 18 - deep facial vein; 19 - zygomaticofacial artery and vein; 20 - infraorbital artery and vein; 21 - angular artery and vein; 22 - sentinel artery and vein; 23 - nasal dorsum artery and vein; 24 - nasofrontal artery and vein; 25 - supratrochlear artery and vein; 26 - supraorbital artery and vein; 27 - transversal facial artery and vein; 28 - zygomaticoorbital artery; 29 - median temporal artery and vein.

Fig. 16. Result of the correction of nasolabial folds with a cannula.

Labiomental folds (marionette lines)

The volumizing of labiomental folds, similar to nasolabial ones, is performed if there is a pronounced depression in this area and the tissues significantly protrude over the fold.

This is an indication for subcutaneous injections using a cannula. The start of the injection duct corresponds to the projection of the mandibular edge at the level of mouth angle (Fig. 17). Volumizing of the mental area can also be done from this point where necessary. The cannula is injected up to the columella using the fan technique, in a linear-retrograde manner. The filler should have medium viscosity. The injection volume may reach 2 ml on each side.

The filler may be palpable and visualizable during facial gestures. To prevent this, it is advisable to do some molding of the preparation after injection.

If this is done properly, the filler not only fills the labiomental fold but also ensures upturned mouth angles (Fig. 18).

Before performing the procedure, it is necessary to check the condition of the face in general. A deficit of soft tissues in the cheek area or significant resorption of bone tissue at the mandibular angles can be directly related to the formation of labiomental folds. In such cases, the treatment should start with the volumization of adjacent areas (Fig. 19).

It should be kept in mind that labiomental folds may be due to the hypertonus of the depressor anguli oris muscle (Fig. 20). If there is a pronounced hypertonus, botulinum toxin therapy is first to be performed; only after that, volumizing can produce a sustainable result.

Fig. 17. Plan of labiomental folds correction with a cannula.

Fig. 18. After correction of labiomental folds.

Fig. 19. After correction of labiomental folds and adjacent areas.

Chin

The chin is a central element of the face, the highlight of the face. The indications for chin area volumizing are as follows:

- volume deficit in chin area
 - wrinkles and roughness of chin area
 - mental folds
 - changing the outline of the chin (a more square look or creation of a dimple)
- There are two parameters defining a deficit in the chin area. The first one is whether this area is sufficiently long. A harmonious and well-proportioned face can be divided horizontally into three equal parts (see Fig. 1).
- Upper face: from hairline to middle of eyebrows.
 - Middle face: from middle of eyebrows to tip of nose.
 - Lower face: from nasal septum base to tip of chin.

If lower face is shorter than the other two thirds, that means that an injection is needed in the chin area in order to make the face more harmonious.

The second parameter used to assess the chin area side-face is the location of the chin respective to the Ricketts' E-line (Fig. 21). Ricketts' line (also E-line) is a line connecting the nose tip with the most prominent point at the chin. The line is normally located about 4 mm away from the upper lip and about 2 mm from the lower one. If a line drawn at a given distance from the lips does not connect with the most prominent chin point, this means that there is a volume deficit in the chin area. The volumizing of the chin area can be performed through supraperiosteal, subcutaneous injection or using the layer-by-layer technique, or injecting the preparation to both depths.

Supraperiosteal injections are intended for lifting and volumizing the lacking tissues. For this to be done, a highly dense filler is injected with a needle, symmetrically on both sides, 0.5-1 cm away from middle line of the face. If there is a need to increase the volume of the chin area side-face (along Ricketts' line), the injections are performed perpendicular to the mandibular bone (the mental tubercle) (Fig. 22). The preparation is injected slowly (0.1 ml for a count of ten), 0.5-1.0 ml on each side. If there is a need to make the face longer (add volume to have a proportioned lower face), two injections are made into the lower edge of the mandible, 0.5 mm away from the facial midline, or 1 injection right on the projection of the midline (Fig. 23). Supraperiosteal injection shall be of no use for treating wrinkles and roughness of the chin, since these problems are caused by the hyperactivity of the mentalis muscle (m. mentalis), starting from the bone at the mental eminence and rising upward and toward the center, where its fibers come closer to the surface and connect with the skin. This is why the treatment of roughness or transversal wrinkles of the chin should start with botulinum toxin injections (MHH - type A botulinum neuroprotein), and only then the filler gel can be introduced. The depth of gel injection should be such that an additional layer is created between the skin and the muscle; that means that the injection should be subcutaneous.

For the purposes of chin shape correction, treating relief irregularities, or filling the chin fold, it is advisable to inject the product with a cannula. The access point in these cases will be the projection of the mandible at the mouth angle level (Fig. 24). From this point, it is possible to handle any part of the chin area, filling wrinkles, evening out rough parts, adding volume not only in the transversal direction but also to give the chin a more square shape. Chin volumizing requires about 1-3 ml of the product per procedure (Fig. 25).

The chin is an important part of the face and should fit well into the facial contours. If the chin is too rough, has a fold, or the patient needs the effect to stay longer, botulinum toxin should be injected first.

Fig. 20. Labiomental wrinkles caused by lower face muscles.
at rest
during mimic movements

Fig. 21. Ricketts' E-line

Fig. 22. Plan of injections intended to enhance chin volume, side-view
using a needle
using a cannula

Fig. 23. Plan of injections intended to visually elongate the face

Fig. 25. Result of chin volumization

Mandibular angle and periauricular area

The mandibular angle is one of the most important parts of the lower face. First, it contributes to the creation of a consistent mandibular line; second, it serves as support to the soft tissues of the lower face; third, it is a visual gender hallmark. Classically, the mandibular angle should be 100 to 110°. It is usually closer to the right angle in men and more obtuse in women; anyway, it should have a clear contour. Over age, the mandibular angle increases because of the resorption of the osseous tissues along the posterior edge of its ascending branch, and also because of the remodeling of the entire bone, and partial or complete loss of the teeth. However, osseous defects and dental problems can become not only age-related but also aesthetic indications in younger patients.

Apart from the age-related osseous tissue resorption, there is also a specific degree of thinning of the subcutaneous fat layer, resulting in the soft tissue depression near the mandibular angle and in the periauricular area (mostly in women).

Thereby, the volumization of the mandibular angle area purports to handle two problems: restoring the lacking volume and maintaining clear contours. If there is a need to restore volume without accentuating the angle (Fig. 26), then the procedure is performed using a cannula and with a plastic preparation of medium-high viscosity. The access point has to be located over the jugal arch at the lateral eye angle level. The injections should be performed using the fan technique, the vectors directed toward the periauricular area, the mandibular angle and the exterior third of the mandible (Fig. 27). The preparation is to be injected into the subcutaneous fat layer (the cannula should be seen as a contour). Deeper injections in this area can result in blunt injuries of the parotid salivary gland (Fig. 28). Sharp contours can also be created using a cannula, but the access point shall have to be located near the base of the mandibular angle (Fig. 29).

This is how the angle should be marked: one marking vector directed along the lower edge of the mandible, the other one along its branch. An access point is formed near the mandibular angle. An atraumatic flexible cannula is injected at this point, first perpendicular to the skin and then parallel to the bone, all the way to the external edge of the jowl. The filler is injected using the linear-retrograde technique, in accordance with the marking and down to the necessary depth. The injection is made while the cannula is removed from the tissues, by means of uniform pressure on the plunger.

Defining the right depth once and for all is almost impossible in this area. The edge of the mandible contains the following tissues, layer-by-layer: skin, superficial fascia, thin layer of subcutaneous fat, subcutaneous neck muscle, periosteum, and bone. The subcutaneous neck muscle (m. platysma) is very thin, therefore it is hard to define whether the cannula is beneath or above it (Fig. 30). However, there is a good effect at both depths.

After passing one of the vectors located along the lower edge of the mandible, the cannula is almost fully removed from the skin but does not leave the access duct and turns along the mandible branch (toward the ear lobe). The consumption of the product is about 0.6 ml per one side for mandible body and about 0.4 per side for mandible branch.

After all the vectors have been filled, an accent can be made directly on the protruding mandible angle. For this to be done, the patient has to sit upright, and

the filler is injected by boluses, supraperiosteally, using a needle, in the projection of the protruding mandible angle. 0.3-0.5 ml of the preparation is injected per one side (Fig. 31). It is important to avoid excessive masculinization of a woman's face. Sharp contours of the mandibular angle look well on finely-cut female faces with pronounced relief and light-shade borders; and of course on male faces, too.

Fig. 26. Volume deficit in the mandibular angle area

Fig. 27. Plan of mandibular area restoration without accentuating the mandibular angle

Fig. 28. Result of restoration of mandibular area without accentuating the mandibular angle

Fig. 29. Plan of mandibular area restoration with accent on the mandibular angle

Fig. 30. Structure of the mandibular edge

Fig. 31. Result of restoration of mandibular area with accent on the mandibular angle

Mandibular line

An even mandibular line is a sign of a young-looking face, exactly what most patients are looking for. It is very important to explain to the patient that alterations of the face contours can be due to aging changes of the lower face, the skin area, and the mandibular angle zone. Very often, it is enough to perform a lifting of the middle face part to make the jowls decrease or disappear. The mandibular angle and the chin are the support points of the mandibular line; restoring the volume lacking in these areas will result in a better face contour. Volumization makes soft tissues evenly distribute between these points.

However, the result is sometimes uneven. A shade and some impaction may be seen on the border between the chin and the cheek. This has specific anatomic reasons: this is the location of the mandibular ligament that substantially "solders" the skin on the bone. For the purposes of treating this condition, the filler may be injected directly into the mandibular ligament area. It can be done by bolus injection, supraperiosteally, into the center of the depressed area, with a needle. The defect can also be filled using a cannula. In this situation, the preparation is injected subcutaneously; before injecting the product, one should make a few idle runs with the cannula (without the preparation) to make a space to be filled by the gel (Fig. 32).

Face contour correction requires thorough individual assessment. In case of deformation aging with excessive fat tissue, it will be more efficient after an adipocytolysis procedure in the submental area. Lipolytic cocktails can also be injected into the adipose tissue located over the nasolabial fold and near the jowls.

Fig. 32. Result of filling of the area that separates the chin from the cheek.

Conclusion

The aging of lower face is caused by conflicts between muscular contractions in the fixing area that affect both the fixing points on the ligaments and the superficial lipid compartments that lie next to the skin. Lower face muscles have depressor activity, resulting in the formation of wrinkles and depressions. They also block deeper fat compartments that deflate over time and cause ptosis of the skin and superficial subcutaneous fat. This is why the main approach to non-invasive correction of lower face problems should combine the usage of fillers, botulinum toxin products and hardware methods for improving facial contours. It is important to remember about the interrelation of different areas, since aging changes affect the entire face (Fig. 33).

Fig. 33. Result of comprehensive therapy of deformation aging changes in lower face (BTA, volumizing)