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Fig. 7.1 a-b: The hard scar tissue due to previous calcium hydroxyapatite implant is isolated and surgically removed (a). Scar tissue removed at the end of the interventions (b) (courtesy Dr. Bruno Carlotti, Nice).

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Many other fillers based on hyaluronic acid can be perfectly indicated and not named here only because they are used less by the authors. Refer to the package inserts of the materials on the market and remember that the correction of the nasal profile is an "off-label" indication and the companies do not assume responsibility for this indication.

At the level of the upper-periosteum you can also use calcium Hydroxyapatite, like Radiesse, but you shouldn't use it at the level of the tip. Furthermore, calcium hydroxyapatite (Radiesse, MERZ) does not have an absolute contraindication, because it's always well tolerated by the tissues but it can cause the formation of hard scar tissue that can lead to problems in case of surgical re-interventions (Figs. 7.1 a-b).

TABLE 7.1 - HYALURONIC ACID: intersting details	
A brief history of fillers:	1800: Fat is used as a filler. 1900: Brockaert uses liquid paraffin with a pump for the buttocks and nose. 1940: Liquid silicone is used for the body, as well as the face. 1980: Bovine collagen appears on the market. 1996: The first hyaluronic acid, Hylaform, appears on the market. 2004: Approval of Calcium hydroxyapatite is granted. 2008: Hyaluronic acid and lidocaine emerge. 2009: Polycaprolactone approval is granted.
1937: Hyaluronic acid is extracted from the streptococcus capsule, obtained by bacterial fermentation.	
The final product may have varying concentrations of hyaluronic acid, ranging from just a few mg x ml to 25 mg x ml.	
Cross-linked via BDDE or more rarely with Divinilsulfone. Their very low percentage characterizes the best and non-irritating fillers.	
The quality of the product depends on the manufacturing process (with particular reference to the sterilization of raw materials, complete elimination of free forms of the latter and of all bacterial toxins).	

THE TECHNIQUE

FOCUS ON: NEEDLE OR CANNULA?

The discussion about the use of needles or cannulas in a dangerous area such as the nose, has always fascinated professionals. Everyone knows that we prefer to use cannulas at least 25G and ideally, 55 mm. In some very selected cases, it is still possible to use the needles as in the following case. To all colleagues, however, we recommend always injecting very slowly, so that if you notice something strange you can stop immediately. We also always having a hyaluronidase with a relative knowledge on how to use it; in our opinion, generous doses in these cases are imperative!

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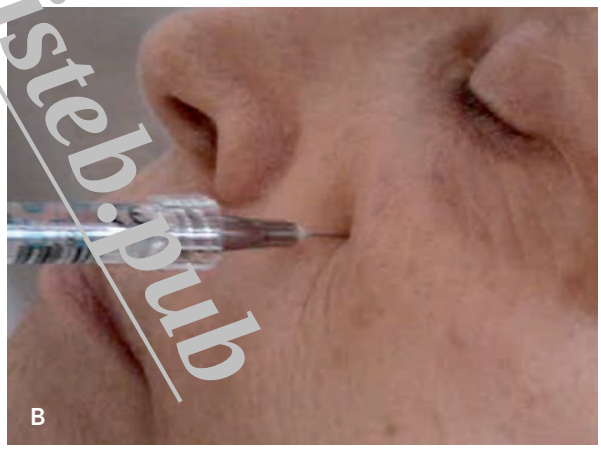
It is for this reason that we do not recommend it at the nose level. Among the non-resorbable filling products we can mainly cite the polyacrylamide gels, for example Alcamid, Bioalcamid, Outline and Ar- tecoll (methylmethacrylate), used by some authors. However, due to the undesirable side effects which are always possible even after a long time, in our opinion these products are and remain contraindicated [41].

The patient should get into the office at least half an hour before the session to be prepared with the anaesthetic cream (a). In the first treatment session or in a previous session, it is necessary to talk freely with the patient about the technique and the possible risks, so that the patient can be actually aware of every detail and can take an informed decision [42]. After that, the patient always signs a written informed consent (see Chapter 10).



The patient (Figs. 7.2 a-i) is prepared with topical anaesthetic cream (a), exactly where the injections should be the made. Then, we put the anaesthetic cream over all the nasal profile, especially at the root and more abundantly at the tip, at the lobules and on the nasal spine. In some patients, however, you can make the correction without any anaesthesia. The nasal tip is the most sensitive. It is absolutely necessary to make a good treatment plan before beginning the injections. This is done after the photographs to the patient (see Chapter 3 and 4), and having studied in detail all the nasal angles and the relations of the nose with the nearby tissues. The injections must be made very gently and carefully to avoid cutaneous suffering. You can exceptionally make a truncal anesthesia with Carbocaine or Xilocaina. In this case, we make it at the level of the infraorbital nerve (b).


C

The nasal tension, especially at the nasal tip is so high that if we make too many injections or overfill the lobules, the product tends to go out and to be extruded (c).

Here as follows we describe the main step of treatment in addition to which we will add a few injections and then we will refine the correction.

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INJECTION OF THE NASAL ROOT

The first injection is normally done at the level of the nasal root to refine the naso-frontal angle and improve a "bump", a ridge of the nasal dorsum. The needle is introduced with obliquity of 45° right in contact with the bone, from the bottom to the top. The syringe is held by the dominant hand (d). The injection is made with a very simple and controlled gesture. The injection is made in a linear retrograde way along the entire length of the needle until the syringe releases the gel. It is better to stop injecting just before the dermis, so as not to create a local superficial overcorrection that would struggle to reabsorb.


D


E

You can even make the injection (e) transversally to make minor corrections. The hyaluronic acid gel is injected slowly and progressively. You need to pinch, squeeze the nose at its root with thumb and index finger of the hand that is not injecting, on the lateral side of the nasal bones to prevent the product from spreading laterally to the eyes and lachrymal ways (e). This accidental diffusion of the product can go up to the level of the region of the tears through and therefore it must be absolutely prevented. Gently massage the skin after the injection as it allows a better distribution of the product and a harmonization of the implant. The result is immediately visible.

INJECTION AND DEFINITION OF THE TIP OF THE NOSE

Injections are not only painful, they can also cause complications. Therefore, as we have previously emphasized, we need to try to make as few injections as possible. In practice, one or two injective points with the needle, should be sufficient and should be carefully chosen before starting the treatment. This will allow the radial distribution of the whole product on the tip.


F


G

The injection pressure at this level is essential. The procedure should be slow and gradual to avoid a cutaneous suffering that could lead to a skin necrosis (f). The point should not bleach a lot under the influence of the filler. The attention of the operator, during the injection, is therefore of fundamental importance and must be kept alive (g). Clearly, if the tip bleaches too much, we must stop injecting. The injection must be absolutely centred as in this area the subcutaneous level is very tight between skin and cartilage. We must not inject too superficially or too deeply, but with a little experience, the level will be extremely clear and precise.

TREATMENT OF THE MAXILLARY NASAL SPINE TO OPEN THE NASO-LABIAL ANGLE


H


I

It should be noted that this treatment can not be done at the same time of the treatment with botulinum toxin. In general, we prefer to treat with botulinum toxin first and then, after having evaluated the results, we can treat with hyaluronic acid. We directly and deeply inject the product that is deposited in deep contact with the nasal spine of the maxillary bone to open the angle (h). Columella lines are also more superficially balanced (i). Superficially, we can use less product, but it will be easier to get a less precise and irregular result.

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TREATMENT OF THE NASAL BRIDGE AND COLUMELLA WITH A BLUNT CANNULA

As we said many times before, one of the most important complications using fillers, especially on the nose, is accidental injection in a terminal arteriole, possibly leading to anterograde or retrograde embolization with consequent ischemia of the tissues. The use of a blunt cannula has allowed us to avoid this risk as of now. Moreover, it permits a much less painful treatment with a single entry point and therefore significantly reduced risk of infections and hematomas, as well. Obviously, we cannot say this with 100% certainty, but in our experience, the risk is much lower. However, cases of ischemia can still result from the use of blunt cannulae.

The technique is quite simple and calls for a sole entry point from the nasal tip. Through this point it is possible to reach the glabella and, along the columella, the nasal spine.

As a rule we do not use nerve-blocking or local anesthesia. Instead, in the vast majority of the cases we use a topical anesthesia with an anesthetic cream applied at least 30 minutes before treatment.

The technique is demonstrated and explained directly in the captions to the photos below (Figs. 7.3 a-i).

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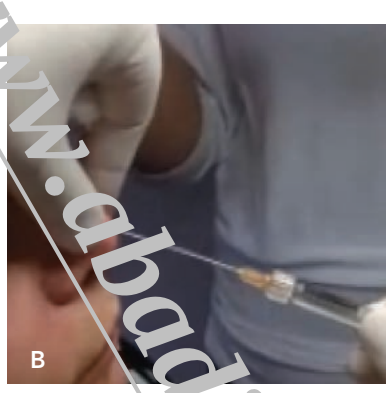
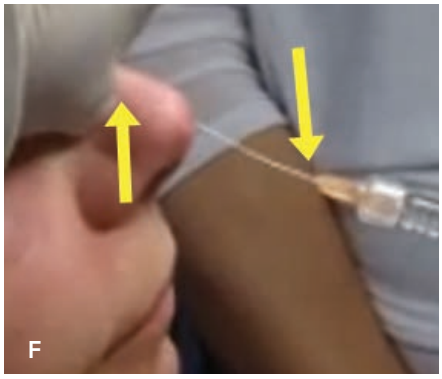


The technique begins by introducing the needle in the nasal tip which will then permit introduction of the cannula along the nasal ridge and the columella (a). This first passage is the most delicate and also the most painful of the entire technique. It must be done with a steady hand and rather quickly so the patient almost doesn't have time to feel pain and the needle has already been inserted into the thin subcutaneous layer of the tip.

As a rule we use a 23G needle that allows a 25G cannula to enter easily. The entry point is very important and is normally positioned at the bisection of the angle between the nasal ridge and the columella. This will allow us to introduce the cannula along the nasal ridge and along the columella using the same entry point. Now we carefully introduce a 25G x 50 mm cannula (b). It is necessary to find the exact introduction point in the full subcutaneous tissue and not too superficially in the dermis (difficult and painful) nor below the superficial and nasal SMAS fascia (just as difficult and painful). If the level is exact the cannula proceeds in the subcutaneous tissue painlessly and easily up to the glabella (c). This passage can be more difficult in postsurgical patients, for more fibrous tissues.




G

The fingers of the non-injecting hand are placed on the nasal ridge and on the sides of the nose (d) to avoid the hyaluronic acid from filtering onto the sides of the nose instead of remaining along the nasal ridge. In our opinion it is very important, even if not always completely possible, to build a new nasal profile that is rather narrow, especially from the front view. It is absolutely imperative to avoid widening of the nasal root in particular. This is not always possible when the nasal bones are particularly broad and therefore an overly narrow nasal root would clash esthetically.

Another frequent problem when using the cannula is that of knowing exactly where the tip is to inject precisely at the perfect point.

To avoid this problem it is possible to perform a particular movement which can be seen quite clearly in photos e and f: lowering the cone of the cannula it is possible at the same time to lift its tip within the subcutaneous tissue in order to see exactly where it is. This is useful in particular for beginners who may end up injecting the hyaluronic acid in a point that is too high, at times aggravating the problem of the nasal bump, especially in Caucasian patients. Let us remember that hyaluronic acid is quite malleable but it is nevertheless better to avoid having to make corrections. Exiting further with the cannula it is then possible to better outline and increase the projection of the nasal tip, if necessary (g).


H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Once the correction of the nasal ridge is complete it is possible from the same entry point to change the direction of the cannula and inject along the path of the columella.

We take the syringe between the thumb and index finger of the injecting hand, change the direction of the syringe as seen in (h) and gently proceed until reaching the nasal spine (i).

When the nasolabial angle is less than 90° we should inject a pyramid of product with the base at the nasal spine and the top at the nasal tip.

As we have frequently noted the procedure is performed in 99% of cases without injective anesthesia but only using topical anesthesia, in particular at the tip of the nose where the entry hole is made.

At the end of the procedure we gently massage with hydrating lotion to make the implant uniform. In our experience we practically never use plaster casts, especially for the nasal bridge since they are not necessary.

We recommend our patients don't wear glasses that have contact with the nasal bridge for at least three days.

The patient leaves our office immediately and usually returns after 2 weeks to see if a little touch-up is necessary.