On point

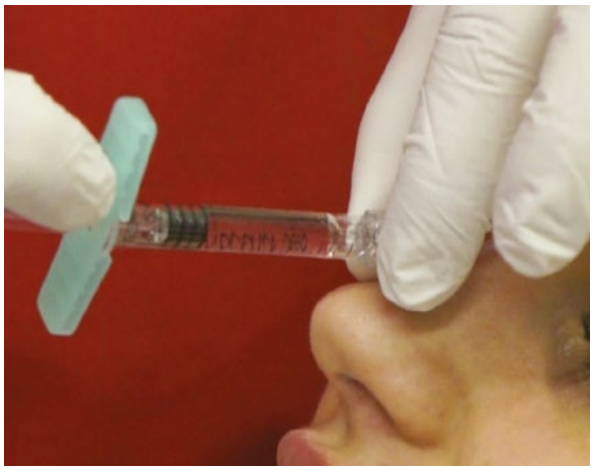
Dr Tim Eldridge on injection points and techniques and how to stay safe with both cannulas and needles

Ideally the nose should be treated using a cannula, but due to its anatomy, both needles and cannulas are often used. Injectors need to be confident and competent in both techniques and have a thorough knowledge of the anatomy. As discussed in the previous article, the nose is highly vascularised, so the risk of intravascular injection or vascular compression is greatly increased. Whether using a cannula or needle the gold standard technique is to aspirate, aspirate, aspirate – it cannot be emphasised enough. Cadaver dissections have demonstrated that, in the nose, it is still possible to place filler into a vessel even with a cannula!

> The nose is highly vascularised, with the majority of blood vessels being small. To avoid inversion of the blood vessels (which can lead to arterial embolism) when placing fillers, the injection needs to be placed below the SMAS in the avascular deep plane

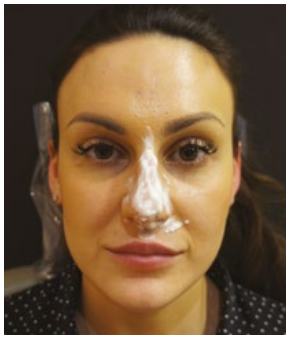
ASPIRATING

Aspiration has to be performed at every injection point for a minimum of 10 seconds. The needle/cannula is placed in the correct plane and the plunger of the syringe is pulled back as far as it will go and held. After a minimum of 10 seconds, it is gently released. During the 10 seconds no blood must be visible in the syringe. It can take several seconds for the aspiration to work and even after eight seconds blood can enter the syringe. This is why it is recommended to aspirate for a longer period. Remember the consequences of intravascular injection can be permanent blindness.



DANGER ZONES

Think of every area as a "danger zone" and always treat with caution. Some areas can be less dangerous than others.



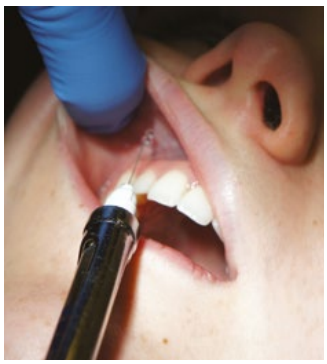
When treating these danger zones look closely for signs of blanching and listen to the patient for signs of discomfort.

ANAESTHETISING THE NOSE

Normally topical anaesthetic placed 30 minutes to one hour before treatment is enough for most patients.

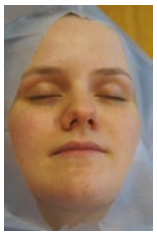
INTRA-ORAL TECHNIQUE

Look at the patient face on. In the mid-pupillary line palpate the inferior margin of the orbit (often there is a notch), then move your finger approximately 1-1.5 cm downwards and apply a little pressure. You should now be able to feel the infra orbital foramen. Place the finger of the non-injecting hand over the foramen and lift the upper lip with your thumb. Introduce the local anaesthetic syringe/needle over the apex of the lateral/canine tooth and advance upwards towards your finger. Aspirate and inject very slowly approximately 0.5mls-1ml of local anaesthetic very slowly, taking at least one minute to inject. The slower the injection, the less painful the injection. The solution should also ideally be at room temperature and the ideal needle length is 25mm. The patient will report the effects nearly immediately. (This is also a good technique for anaesthetising the lips).



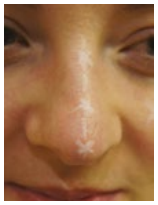
EXTRA-ORAL TECHNIQUE

Identify the infra orbital foramen in the same way as the intra-oral technique, and place approximately 0.5mls-1.0mls local anaesthetic around the foramen not into it.



PREPARING THE PATIENT

Aseptic technique is highly recommended when performing any treatment. The area must be thoroughly cleansed and it may help by draping the patient and either placing a hairband or surgical cap on them. After marking up, cleanse again without removing the markings.



MARKING THE PATIENT UP

After removing any make-up and cleansing the skin with a suitable solution, the nose is ready to be marked (with non-tattooing markers).

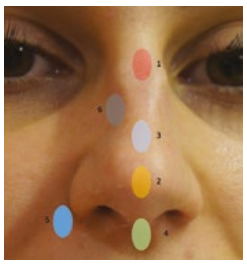
1. Mark the midline of the nose
2. Mark injection points

TREATING THE NOSE WITH INJECTION

The main areas of the nose which we can comfortably treat are:

- Nasal tip
- Naso-labial angle/columella
- Nasal supratip
- Nasal root/nasofrontal angle

The order in which to treat is important, as sometimes placing a filler such as Perfectha in one area affects another area, and less or no filler may be required. Outlined in the picture is the order in which to inject.



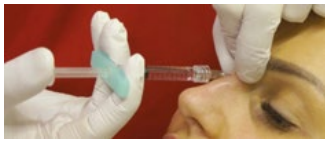
1: Nasal root/Nasofrontal Angle
2: Naso-labial/Columella
3: Nasal Tip
4: Supratip

It is advisable to perform as few injections as possible, apspirating at every injection point, and inject very slowly.

INJECTION TECHNIQUES WITH NEEDLE

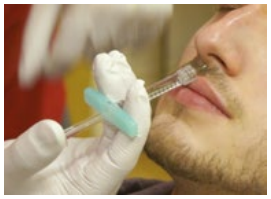
1. Nasal root/nasofrontal angle

Remember this area is treated first as it usually has the most dramatic effect on the nose and can make it appear smaller. The needle is introduced into the skin at an angle of 45° down onto bone, usually from bottom to top of nasal root. The dominant hand controls the syringe, the non-dominant hand controls where the filler goes, preventing it migrating towards the glabella. This is achieved by pinching the nasal root with the thumb and middle finger, and placing the index finger on top of the nasal root. Always apirate, to prevent vascular compromise. The technique is a linear retrograde filling, along the periosteum. Inject slowly and massage the area after injection to improve distribution.

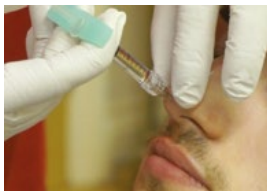


2. Naso-labial angle/columella

This can also be treated with botulinum toxin type A first, then with fillers, if required. There are two techniques, a deep injection in contact with the nasal spine of the maxillary bone, or a more superficial injection of the tip of the nose down the columella. The second technique >



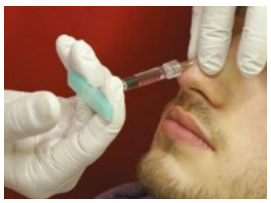
uses less product and is less predictable because it can produce an irregular result. If the columella is retracted a lot, then more than one session will be required to achieve the desired soft tissue expansion.



3. Nasal tip

Ideally final tip projection should equal the width of the alar base. Patients with a reduced naso-labial angle may require increased tip rotation. Before injecting the tip, it must be identified whether only the domes need augmenting, or the middle crura, or both. If only the domes need augmenting, only inject into the upper part of tip, but if the whole tip needs augmenting, both the upper and the lower injections will be required.

This is the danger area and caution should be taken when injecting into the nasal tip. Slow and gradual injection to avoid too much pressure and skin necrosis. You do not want to see any blanching, if blanching occurs stop injecting immediately. The injection should not be superficial and should not be too deep. This area may need to be treated over several sessions.



4. Supratip injection

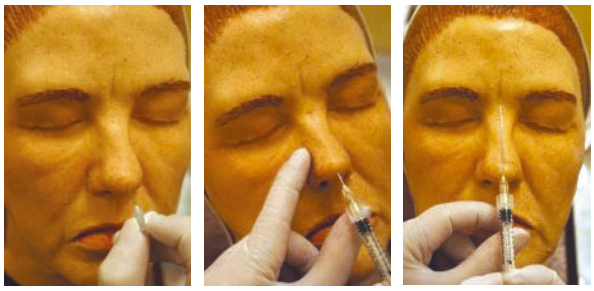
Avoid injecting into the supratip break, as this may cause the nasal tip to drop. This may only require a small injection into the tip of the nose, to enhance the supratip break.

INJECTION TECHNIQUES WITH CANNULA

Using a cannula reduces the risk of accidental injection into a blood vessel leading to anterograde or retrograde embolisation and subsequent ischemia or even blindness. Another advantage of using a cannula, is a single entry point rather than multiple ones with a needle, thus reducing risk of infection. With one entry point the glabella, columella, nasal spine can all be reached. In post-surgical rhinoplasty patients augmenting with a cannula can be more difficult, because often the tissues are more fibrous.

DORSUM OF THE NOSE

The injection point is at the nasal tip infratip lobule (bisect the angle between nasal tip and columella), in the supraperichondrial and supraperiosteal layer. Using a suitable gauge needle(23G) for the cannula (25G x 50mm), with a steady hand and conviction insert the needle. This initial entry is usually regarded as the most uncomfortable. The cannula can now be entered into



the subcutaneous tissue (not in dermis too superficial, nor below superficial and nasal SMAS facia). The pathway should be a relatively easy one up towards the glabella, and with little discomfort. Similar technique as with needles regarding the non-injecting hand and protecting the glabella.

One problem associated with this technique can be getting beyond a pronounced dorsal hump, and actually identifying where the tip of the cannula is. Filling is performed in a retrograde fashion.

COLUMELLA

Insertion of the cannula is at the same point as when filling the dorsum of the nose. Once the dorsum has been filled the direction of the cannula can be altered to augment the columella. If the naso-labial angle needs increasing filler should be placed at the base of the spine and the tip of the nose.

If treatment needs to be staged due to the amount of augmentation and a concern with vascular compromise, an ideal time interval is two weeks between appointments.

POST-OPERATIVE INSTRUCTIONS

The patient should leave with a contact telephone number, and be informed that if there is any discolouration in the skin, or if anything looks abnormal to contact you immediately.

- Avoid touching the area for several hours
- Avoid wearing glasses for 24 hours
- Avoid extreme temperatures and temperature changes
- Avoid massages
- Avoid make up for several hours
- Apply cold pack if required to reduce any swelling

The next article in this series will cover clinical examples. **AM**

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Dr Timothy Eldridge BDS founded myFACE dentistry and facial aesthetics in Cheltenham in 2009 and is the principal dentist. Today he spends half of his time in practice combining non-surgical treatments with cosmetic and restorative dentistry, and the other half as a clinical supervisor at Birmingham Dental Hospital. He is a full member of the British Academy of Cosmetic Dentistry and is currently chairman of CODE. Dr Eldridge has trained hundreds of dentists, doctors, therapists, hygienists and registered medical nurses both nationally and internationally. He is the trainer and course leader for Dr Paul Tipton's facial aesthetic training courses, and is a committee member of the British Academy of Restorative Dentistry.