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CONSULTING ROOM

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FEATURE ARTICLE

Non-Surgical Rhinoplasty

Can You Really do a Nose Job in 15 Minutes?

Feature Article

Non-Surgical Rhinoplasty – Can You Really do a Nose Job in 15 Minutes?

The answer to that question is yes you can, and our *Guest Author* for this month's feature article, ENT Surgeon, Mr Ash Labib FRCS DLO intends to briefly show you how this can be achieved, and the important considerations if you're thinking of adding this to your aesthetic practice.

The non-surgical or medical rhinoplasty is a technique for remodelling and reshaping the nasal framework with the use of dermal filler injections.

It's important to note that, as with many other filler techniques which target lines, folds and volume restoration, there are many complex structures to the nose, and the nasal anatomy must be understood before practitioners embark on correcting nasal deficiencies using filler products. As an Ear, Nose and Throat Surgeon, Mr Labib believes that this really is an area in which training is paramount, and should only be considered by those with an intermediate or advanced competence in dermal filler injections.

Rhinoplasty History

Firstly, some background. Rhinoplasty is the oldest known of the plastic surgery procedures, having been reported as a method for repairing broken noses in ancient Egyptian medical texts dated to 3,000 BC, as well as by the ayurvedic physician Sushruta in ancient India circa 800 BC who wrote about reconstructing noses which had been amputated for religious or criminal punishment. The development of the forehead flap rhinoplasty is attributed to Sushruta; this technique was also used in modern day plastic surgery on soldiers who returned from World War I with facial trauma and is still a technique used in current practice for severe cases.

Given its history, rhinoplasty is probably one of the most written about and developed areas of facial surgery which has mostly remained unchanged in principle for several thousands of years; the aim remaining to correct nasal complications caused by trauma or birth defects.

In the modern era, the concept of a cosmetic rhinoplasty has evolved, with the surgery being less about a medical need to improve nasal function or correct a significant nasal deficit and more about a desire to improve on the look of the nose that god gave someone.

Although not as old as surgical rhinoplasty techniques, the non-surgical procedure is not as new as we might all think. I personally believe the concept of the non-surgical rhinoplasty started when surgeons who were performing traditional, surgical rhinoplasty procedures realised that when they were injecting the local anaesthetic into the nasal area they were getting a degree of correction from the simple addition of the lidocaine solution to the region; hence the seed of the idea for the use of injectables was planted.

The first reported case of a non-surgical rhinoplasty is from the late 1800s, when an American neurologist James Leonard Corning and a Viennese physician Robert Gersuny used liquid paraffin wax to lift a saddle nose deformity (collapsed nasal dorum), needless to say, the idea was great, but liquid paraffin was soon discovered to be harmful to the patient!

It took until the 1960s and 70s for surgeons to experiment again, this time with medical grade silicone gels, however again complications were noted, often several years post injection, including ulcers and granuloma formation.

Fast forward to the turn of the millennium and American Dr. Alexander Rivkin published his method for the non-surgical nose job or 'injection rhinoplasty' following a year's experience injecting Restylane® and Radiesse® in 2003. The main observation attributed to Dr. Rivkin, which is the primary confusion with how this technique works, is that he observed that straightening the nose actually made it appear smaller, even though he was augmenting the tissues with the filler, yet by making it all blend better with the contours of the rest of the face it achieved the aim that until then could only be done by surgery. In 2009 he published a **study** of 385 patients which remains the largest published experience with this injection rhinoplasty technique in the world.

Since then, many more practitioners around the globe have trained in and practiced the technique and more clinical trials are ongoing looking at the use of differing filler products. Dr Rivkin himself continues the learning, having published another **paper** only last year evaluating the use of a PMMA filler for non-surgical rhinoplasty.

Who Are The Patients?

A non-surgical rhinoplasty is an ideal option for adult patients who perhaps have a contraindication for surgery, who have previously had surgery, but had unacceptable results, who simply cannot afford a surgical procedure, or for those who are considering a surgical procedure and see this as a stepping stone towards how a 'new nose' might look, before they commit to going under the knife.

Similarly though, it is not an option for all patients with the usual contraindications in place for those with acute or chronic skin disease, pregnancy, allergies or intolerances to the filler materials being used or those who have had previous rhinoplasty surgery but which resulted in complications with compromised bloody supply.

Those who present with a past history of surgical rhinoplasty can be a much more challenging case to work with, even more so that those who present with deformities from past trauma. The anatomy is generally not changed in the latter but a previous surgical case will present with a degree of scarring in the tissue and a compromised bloody supply so a referral to an ENT surgeon may be preferable to avoid complications from a non-surgical intervention.

The attraction of a non-surgical rhinoplasty, for both the practitioner and the patient is that it is an office or in-clinic procedure, no need for a sterile operating room. It requires no anaesthetic, a topical may be used but many filler products nowadays come with the addition of 0.3% lidocaine for pain relief. It is also considered to be a no-down time or lunchtime procedure which allows the patient to return to normal life inside of a couple of hours with little bruising and trauma, compared to a surgical rhinoplasty. Patients simply require aftercare protocols for 24-48 hours which include no exercise, no heavy make-up on the nose and no wearing of prescription or sun glasses.

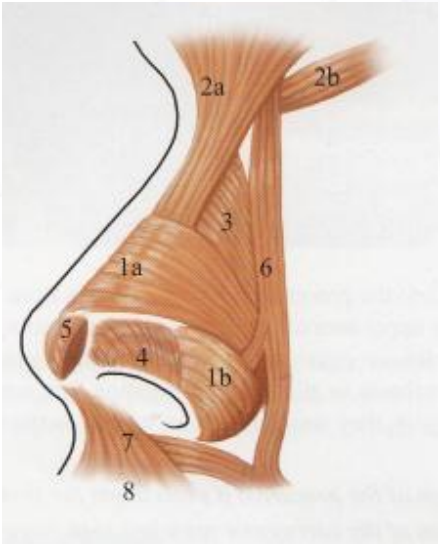
Of course, unlike with a surgical procedure, the results of a non-surgical rhinoplasty are not permanent and the patient is likely to need repeat or top-up treatments to maintain the desired results every couple of years.

The technique can however be used to address a number of nasal concerns, including augmenting a flat nasal bridge (depressed dorsum), adding projection to the nasal tip, reducing nostril size, reducing the perceived size of a nasal hump (straightening the nasal line makes it look smaller), correcting nasal septum concerns, elevating a saddle nose deformity, filling depressions in the side walls of the nose and other corrections or enhancement of the nasal anatomy due to the underlying bone structure. As well as the use of dermal filler products, small unit doses of botulinum toxins can also be combined (for off-label uses), for example used at the base of the nose to aid with the elevation of the nasal tip.

So it sounds like a win-win treatment option for both patient and practitioner, but the question remains, just how do you approach a non-surgical rhinoplasty?

Nasal Anatomy

Frankly, if you are embarking on any facial aesthetics practice, understanding the anatomical structures of the face is your number one priority.



Addressing the nose for non-surgical rhinoplasty treatment is no different. It's crucial to understand the muscles of the nasal pyramid, particularly if you are considering combining a dermal filler technique with botulinum toxin for off-label uses. Understanding the vascularities of the nasal region is critical, as well as knowledge of the osteo-cartilaginous and nerve structures, before you even begin to wave a needle in that direction.

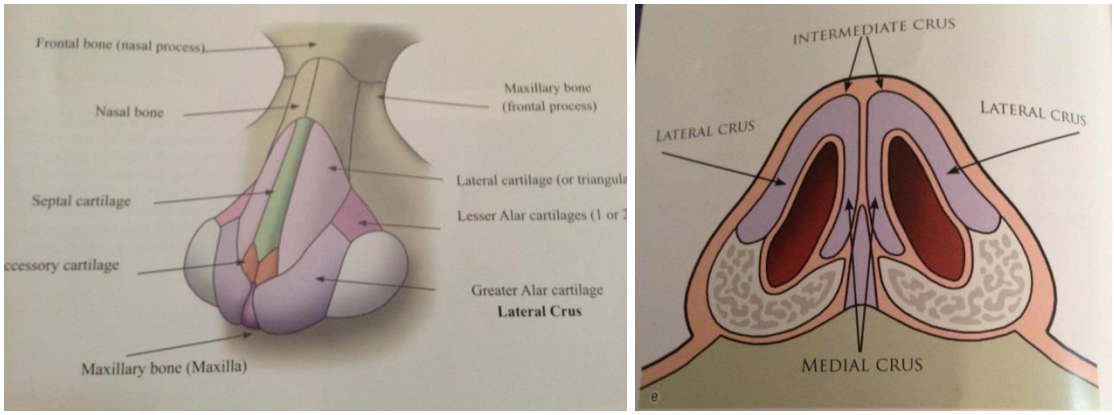
Musculature

The nose is a complex area of movement in the face, which is no surprise given its primary role in allowing us to breathe. The movements of the nose are affected by four key groups of muscles, the elevators (including the procerus), the depressors, the compressors and the dilators.

Bones and Cartilage

As a structure the nasal area is comprised of bone, cartilage and a composite of the two known as osseo-cartilaginous or osteo-cartilaginous structures. The external anatomy includes the dorsum, the sidewalls, the lobule, the soft triangles, the alae and the columella. It's worth noting that these are configured differently depending on the race or ethnic grouping of the patient. Internally, the septum is the osteo-cartilaginous structure that splits the nose into two halves which end in the left and right nostrils.

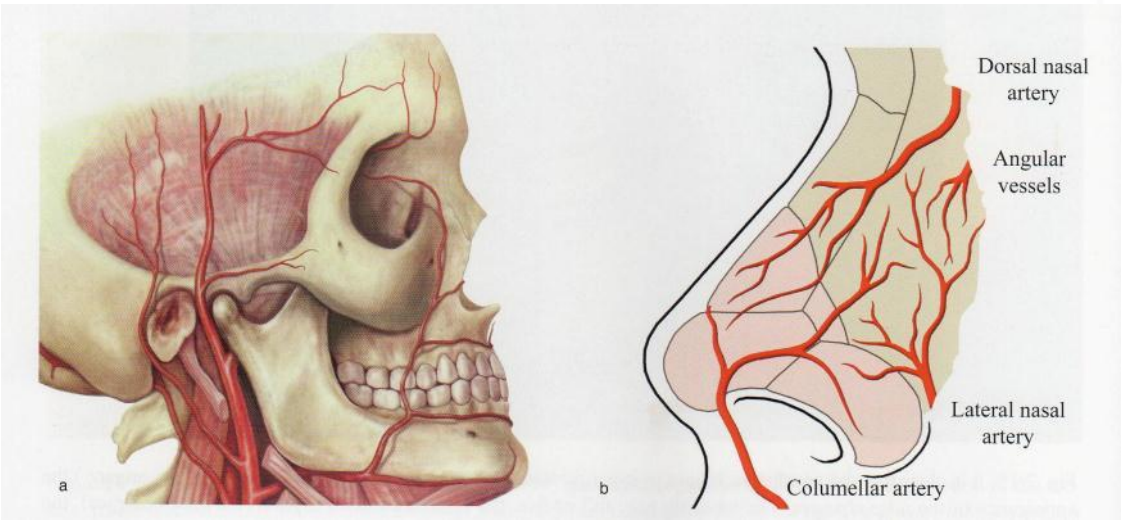
It's important to have an understanding of the overlying skin and how it differs in thickness and adhesion to the underlying cartilaginous and boney structures in the upper, middle and lower nose.



Blood Supply

The anatomical area of key importance when considering embarking on a non-surgical rhinoplasty is the vascular system which provides the bloody supply to the nose. Although we have many diagrams, such as those below which illustrate the primary construction of the vessels and arteries in the nose, it's important to know that this is only the agreed standard and the blood supply framework is not a constant for every patient.

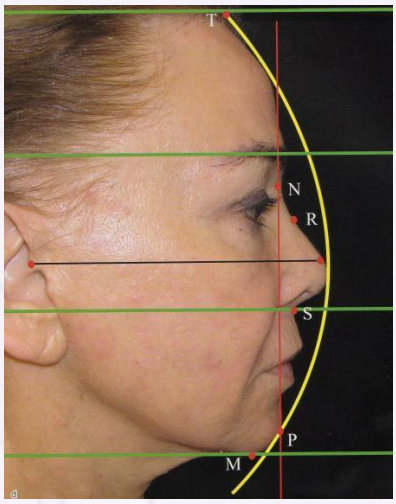
My first-hand experience with cadaver dissection has taught me that blood supply is indeed variable and it is suggested that 20% of us have a different bloody supply framework to the textbooks; that's 1 in 5 patients.



Avoiding complications due to interference with the blood supply is the primary goal when injecting dermal fillers into the nasal area. Sound advice to mitigate the risk and prevent simple errors would include always aspirating the needle prior to injecting product, a practice that all facial aesthetic injectors should be familiar with as a matter of good sense, as well as gradual injection of the product and not over-filling.

I have recently become aware of cases in Asia where excess amounts of Juvéderm VOLUMA were injected quickly into the confined space available in the nose, this resulted in a compromised blood supply and eventually caused necrosis.

Aesthetics

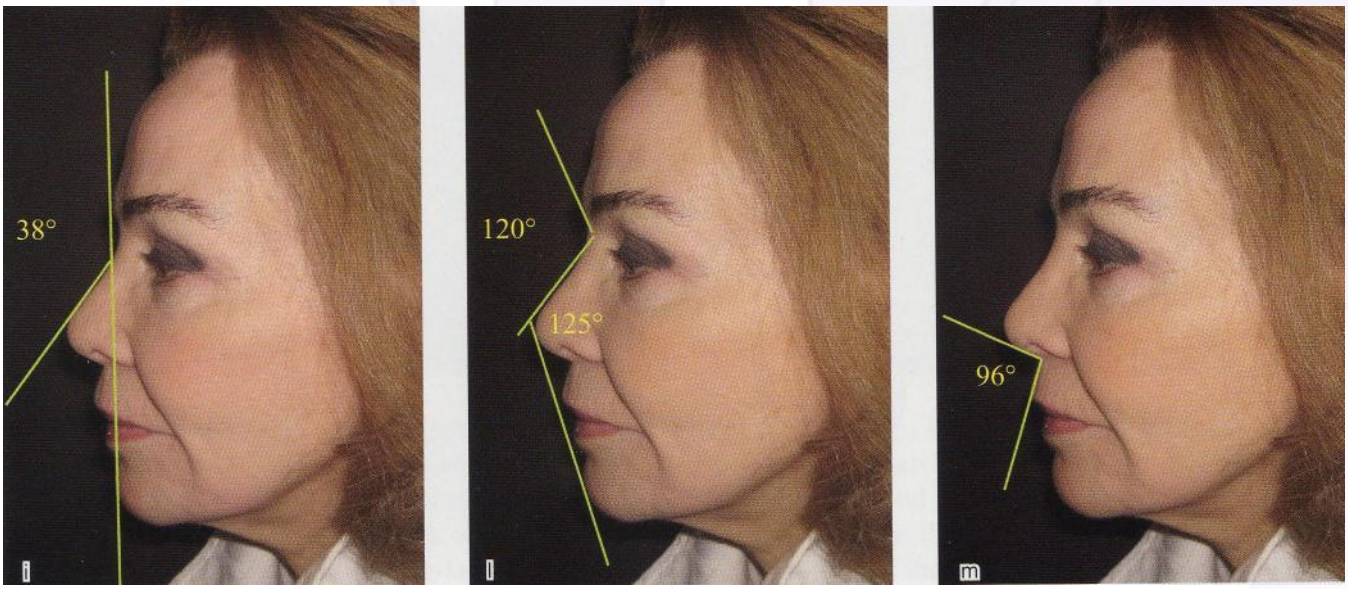


Of course, the difference between the ceiling in The Sistine Chapel and the ceiling in your local church is the artistic approach to the plaster work. This is no different when working in facial aesthetics.

As well as the importance of understanding the anatomy, and thus the impact that placement of your needle and product will have on vital tissues, it's similarly as important to consider the artistic approach taken to any rhinoplasty procedure, whether surgical or non-surgical.

Patient satisfaction is key, so, achieving a nose which both corrects the deficiency or deformity and meets the agreed expectations of a 'beautiful new nose' is the aim.

This means taking into account the important angles and symmetries of the face, so that a balanced and desirable nasal correction is achieved with the procedure.



Products and Case Studies

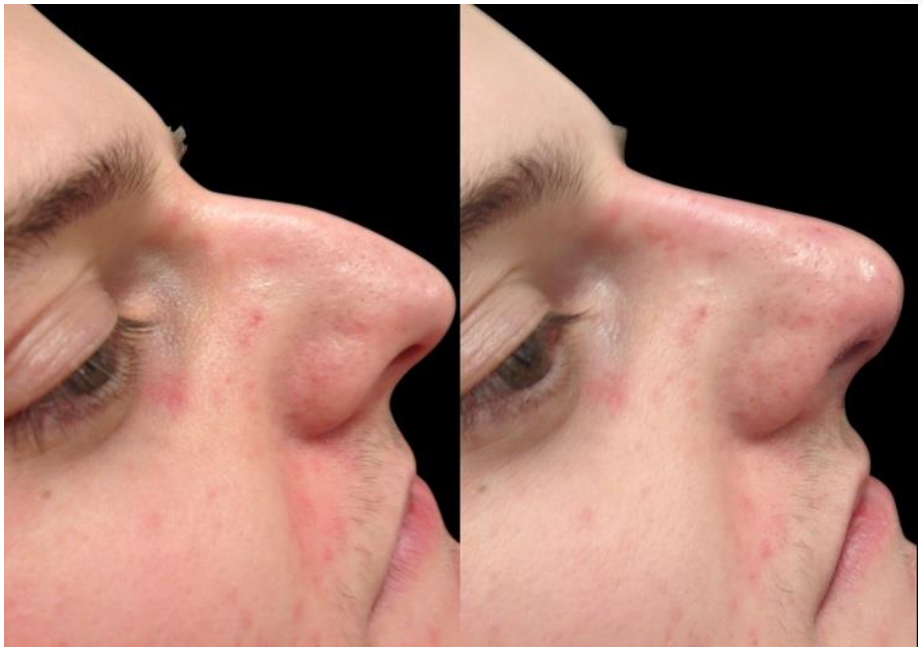
My preferred product range when it comes to non-surgical rhinoplasty procedures is the Juvéderm® ULTRA range, specifically the products derivatives 3 and 4.

Other products are available on the market, and many practitioners report success with using the Restylane® range and Radiesse®.

Not all products work for this indication and there are reports of issues with the use of particularly more viscous options so product selection, as well as placement is an important consideration.

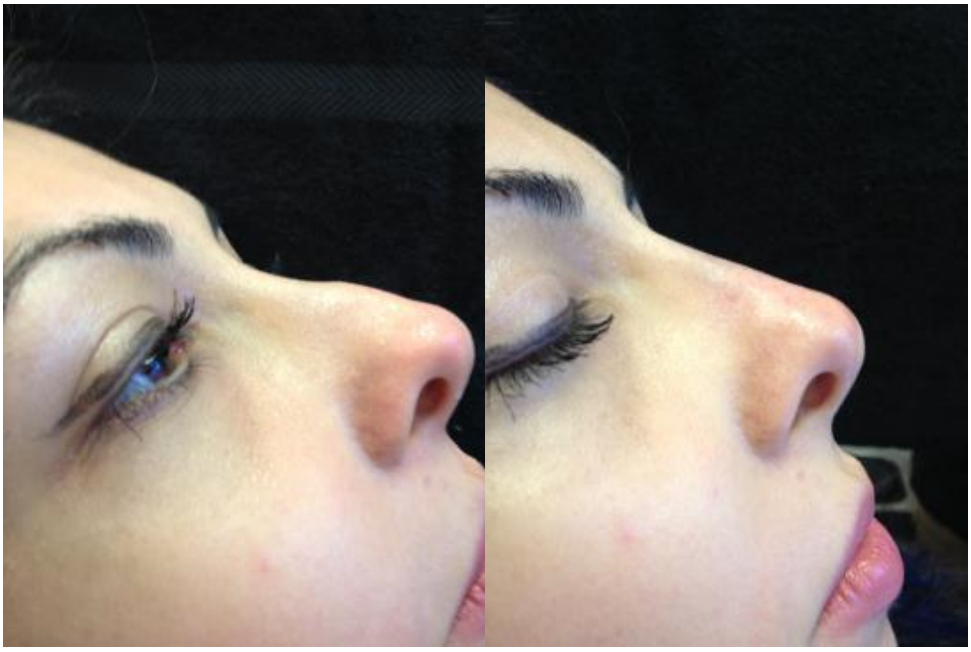
Below are some examples which illustrate how nasal deficiencies can be easily targeted with a non-surgical rhinoplasty solution. These are my own case studies.

Dorsal Hump



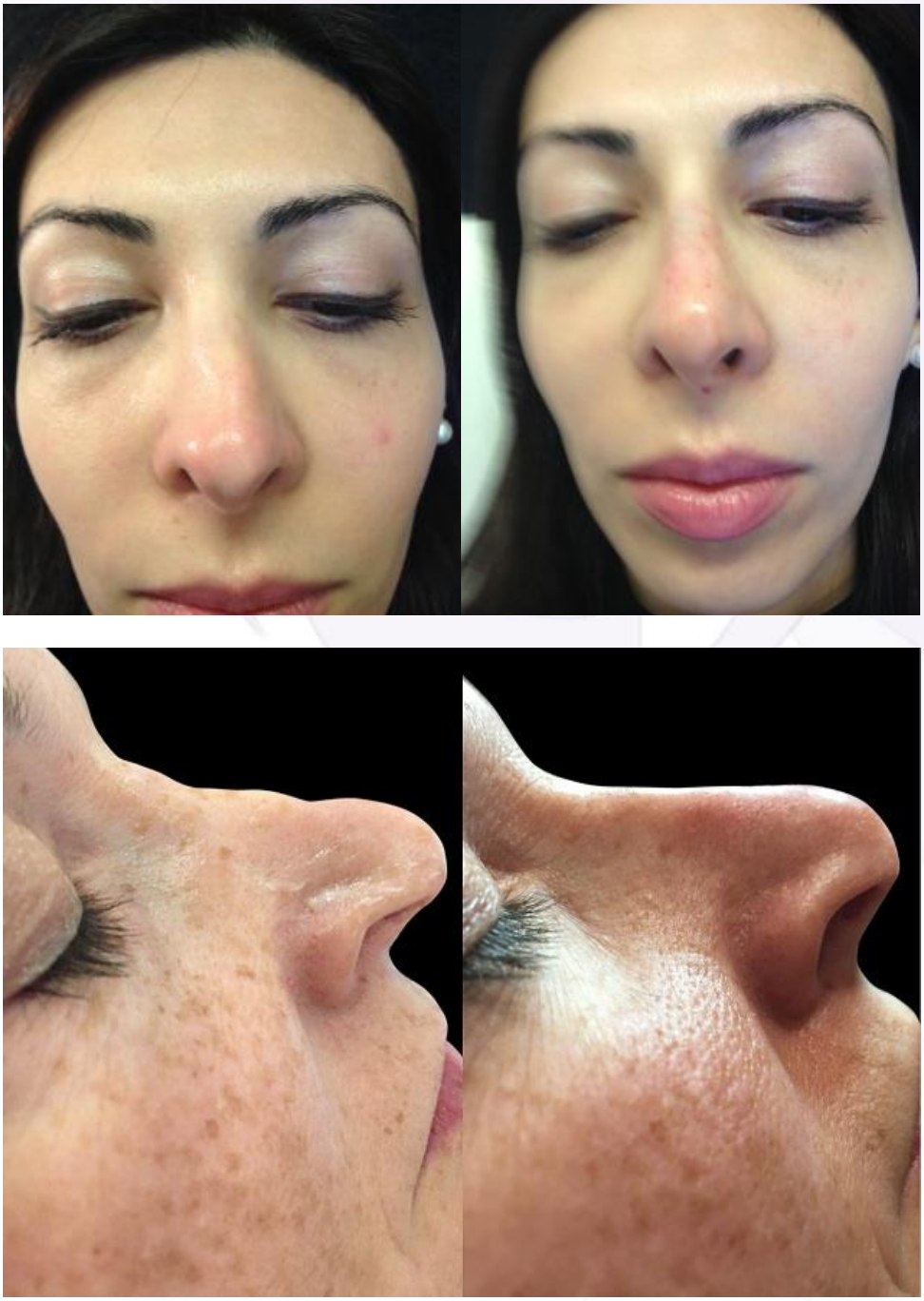
The bump or dorsal hump in this gentleman's nose was addressed with injection of Juvéderm ULTRA 4.

Dorsal Saddle



This lady had previously had a surgical rhinoplasty in which excess bone had unfortunately been removed from the dorsum of her nose. This deficiency was addressed with injection of Juvéderm ULTRA 3.

External Deviation



These ladies had previously had a surgical rhinoplasty which resulted in severe irregularities. This deficiency was addressed with injection of Juvéderm ULTRA 3.

Complications

With most aesthetic procedures there is the potential for possible complications and non-surgical rhinoplasty is no exception. These can include infection, hematoma, necrosis, pain and discomfort, post-procedural asymmetries and foreign body reactions or granulomas. Thankfully granulomas are relatively rare with modern, non-permanent dermal filler products.

As mentioned previously there is the risk of necrosis if the filler is injected too quickly and in large quantities as you're dealing with a confined space.

Sadly, the biggest problem reported with non-surgical rhinoplasty is the risk of inducing temporary and permanent vision problems and blindness through incorrect technique and product placement, most commonly attributed to undesired introduction to the arterial system.

A **paper** by Kim YJ et al, published in 2011 reported on their experiences with a case of ocular ischemia with hypotony following injection of a dermal filler for augmentation rhinoplasty. Immediately after injection, the patient demonstrated a permanent visual loss with typical fundus features of central retinal artery occlusion. Multiple crusted ulcerative patches around the nose and left peri-orbit developed, and the left eye became severely inflamed, ophthalmoplegic, and hypotonic. Signs of anterior and posterior segment ischemia were observed including severe cornea edema, iris atrophy, and chorioretinal swelling. The retrograde arterial embolisation of hyaluronic acid gel from vascular branches of nasal tip to central retinal artery and long posterior ciliary artery was highly suspicious. After 6 months of follow up, skin lesions and eyeball movement became normalised, but progressive exudative and tractional retinal detachment was causing phthisis bulbi.

The most noted paper which looked cases of blindness post cosmetic injections into the face came from Lazzeri et al in 2012 who conducted a **systematic review** of available literature on the subject in order to provide the best evidence for the prevention and treatment of serious eye injury.

A further **paper**, published in 2013 by Ozturk et al reviewed available literature to identify those facial sites most prone to severe complications following injection of soft-tissue fillers. Their conclusions after looking at forty-one articles noted that the most common injection site for necrosis was the nose (33.3%) and blindness was most often associated with injection into the glabella (50%).

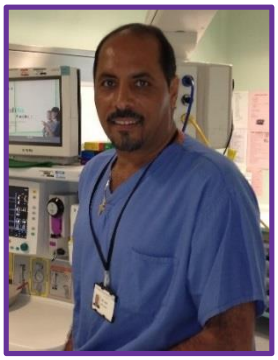
Less than a year ago, Kim SN et al reported on a **case** of unilateral blindness and panophthalmoplegia after hyaluronic acid injection into the dorsum of the nose in a healthy young woman. The authors stated that they presumed that the symptoms were due to obstruction of the branches of the ophthalmic artery. Under high injection pressure, the HA microspheres travelled to the ophthalmic artery and were propelled by the blood flow to the central retinal artery and the anterior and posterior long ciliary arteries, leading to her symptoms. Alternatively, they suggested that there are several arterio-venous anastomotic channels in the nasal mucosa that aid heat exchange. These may have been the conduit for reflux of the filler into the arterial side of the regional circulation.

Concluding they warned that physicians must remain aware of serious complications during cosmetic injections to this region.

Summary

Non-surgical rhinoplasty is an excellent solution for many patients with cosmetic concerns about the shape of their nose. It cannot correct medical malformations of the nasal tissues caused congenitally or by trauma which impair the function of the nose and enhance the day-to-day living of the patient, such problems can still only be addressed through surgery. But, for those patients with bumps and dips in their noses, assymetries and other cosmetic concerns, the use of dermal fillers is a great advancement in nose reshaping treatments.

As I said at the start of this article, for me training is key and with this in mind I urge anyone considering offering this treatment in their medical aesthetic clinic to seek out specific training in non-surgical rhinoplasty before attempting to offer this to patients. Even those with advanced needle skills and many years of performing facial volumising and contouring techniques should undertake specialist training for this technique. You only have to look at the published clinical data available to realise that the potential for blindness and other complications is a real concern, which can only be best prevented through thorough training and education in both anatomy and technique.



Mr Ash Labib MBchB DLO (RCS) FRCS (Ed)
Mr Ash Labib is an Ear, Nose and Throat surgeon and a Cosmetic Specialist. He graduated from Alexandria University in Egypt and qualified as an ENT surgeon in 1995. As well as being employed at Russell's Hall Hospital and New Cross Hospital in the Midlands for over 21 years, he is the owner/co-founder of AL Aesthetics and a UK Ambassador for Allergan.

Over the last 4 years he has sub-specialised in non-surgical rhinoplasty and he lectures and trains in that field. Mr Labib has launched a one day non-surgical rhinoplasty training course for intermediate and advanced injectors, which includes a theory session with comprehensive anatomical illustrations and a practical session on live models.

For further information on non-surgical rhinoplasty training please contact Mr Labib.
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