



THE EUROPEAN AESTHETIC GUIDE

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Energy-Based Facelifting
European Market Update
IMCAS & AMWC Preview

2018 Volume 17
www.aestheticchannel.com

Physicians Achieve Surgical-Like Results with Minimally Invasive Techniques

By Jeffrey Frentzen, Executive Editor

When it comes to performing minimally invasive facial rejuvenation, the tools of the trade are numerous: dermal fillers, neurotoxins, collagen stimulating lifting threads; transdermally delivered platelet-rich plasma (PRP); fat transfer and more. Simply stated, one does not need surgery or energy-based devices to achieve the best facial rejuvenation treatment outcomes.

Due to patient demand, practitioners increasingly opt to rejuvenate and volumize the face using an arsenal of minimally invasive techniques, rather than a scalpel. Currently, non-surgical facelifts, pan-facial rejuvenation and other modern aesthetic techniques are routinely performed throughout Europe and the world.

While surgical facelifts can involve serious downtime and complications, less invasive approaches often yield immediate and even long-term results with fewer complications and virtually no patient downtime.

"I think that we are still on the track of maintaining patients' aesthetic appearance, or returning the more youthful appearance people had when they were younger, but obviously we can also improve facial features, as well, all in order to obtain a naturally rejuvenated look," said Sabine Zenker, M.D., a dermatologist and researcher in Munich, Germany.

"I have patients that are now 15 years older than when I first started treating them, but they look 20 years younger. In addition, people have started taking care and maintaining their faces and skin earlier in life," she added.

According to William Philip Werschler, M.D., F.A.A.D., F.A.A.C.S., a dermatologist and clinical researcher in Spokane, Washington, U.S., "From a non-surgical perspective, we break it down into putting something on top of the skin or under the skin, with consideration on whether we apply energy or material. The core of minimally invasive rejuvenation is going to be the use of neurotoxins and dermal fillers, predominantly."

In the realm of purely non-invasive, non-energy-based rejuvenation treatments, the state-of-the-art is combining different modalities and therapies to achieve certain results, noted Dr. Zenker. "The smart combination of the 'right' treatments to replace volume, redefine contours, lift and stimulate the skin and relax the muscles is key. Amazingly enough, we are able to fix these concerns with non-invasive procedures," she said.

Vic A. Narurkar, M.D., F.A.A.D., a dermatologist and dermatologic surgeon in San Francisco, California, U.S., agrees. "It is not any single treatment that will achieve optimal results. There are so many advances in skincare and less invasive drug-delivery, such as needle-less methods of delivering active agents. We are in a non-invasive renaissance in aesthetics, in which we are globally rejuvenating multiple anatomic areas from both the inside and outside of the body."



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As such, treatment approaches have shifted away from cosmetic surgery, noted Antonella Quaranta, M.D., P.C., an aesthetic surgeon in Florence, Italy. “We want to achieve a higher level in aesthetic medicine, which includes procedures that provide appreciable and lasting results without the use of a scalpel, in a quick, effective manner without downtime,” she said.

The patient population for non-surgical facial rejuvenation has expanded, as well, noted Dr. Narurkar. “While older people can certainly benefit from minimally invasive skin rejuvenation, Millennials have really embraced these approaches,” he said.

Many are just not quite ready for surgery, and if they start earlier in life then we potentially prevent the need for more aggressive procedures later,” he continued. “I have been following these patients, and we’ve been able to maintain their youthful looks without having to undergo surgery.”

The number and quality of injectable products has also improved, noted Dr. Quaranta. “In the beginning, I used collagen and had to subject my patients to allergy tests. Then hyaluronic acid (HA) came along, but in formulations that were, I dare say, too broad and not specific enough. Today, we have products that are more refined and resilient, with low BDDE. These provide natural, long-lasting results,” she said.

In addition, injection techniques have evolved. “While I continue to use the same products over the last several years, what has changed are the protocols,” said Ruth Moro Garcia, M.D., an aesthetic physician in Valencia, Spain.

“Also, we are lucky in Europe because there is an abundance of HA-based products on the market. They are very effective and deliver good results. Nevertheless, there is one area where we still experience issues with most fillers – when the person smiles, the filler doesn’t flow with the smile. It doesn’t look natural. However, there are new HAs that can provide better results in this area.”

As Peter J. Damico, M.D., an aesthetic specialist in Fort Worth, Texas, U.S., pointed out, the type and quality of injection tools are very important, as well. “I use a microcannula whenever I can, but sometimes I achieve a better result using a needle,” he expressed.

Dr. Zenker has been impressed with the increasingly small size of some needles. “They make a difference when injecting products because they do not produce that much pain, there is a lower risk for bruising, and we can better administer the product at the right levels. So, while we don’t really have a lot of new

products, we have become better in administering the products that we use,” she explained.

Beyond fillers and neurotoxins lie new clinical methods that involve PRP treatments, as well as the use of lifting threads, collagen stimulators, stem cell / fat grafting procedures and micro Botox.

First popularized in the 1990s, thread-based lifting procedures have recently made a comeback. With this treatment, absorbable sutures derived from biodegradable polymers help lift and re-contour the lower and mid-face. Two approaches have emerged, one featuring PDO (Polydioxanone) threads and the other utilizing suspension threads with absorbable, dissolving suture material. These require minimally invasive



Before and 2.5 years after treatment with a biostimulating polycaprolactone (PCL) filler and suspension threads
Photos courtesy of Sabine Zenker, M.D.



Before and after a combination treatment regimen of Botox injections to the upper face, Voluma injections to the mid-face and Juvederm applied to the lower face
Photos courtesy of Vic Narurkar, M.D.



Before and after a combination treatment regimen of Botox injections to the forehead, glabella, crow's feet and mentalis; Voluma XC to the cheeks; Radiesse to the chin and bilateral prejowl sulci; and Juvederm

Photos courtesy of Peter J. Damico, M.D.



52-year-old patient before and three months after treatment of the mid and lower face with dermal filler, suspension threads and injection lipolysis

Photos courtesy of Sabine Zenker, M.D.

applications to lift and tighten sagging skin tissues by inducing collagen production.

Representative of modern PDO thread lifting products, Princess® Threads from Croma-Pharma GmbH (Leobendorf, Austria), rejuvenate, reinforce and elevate skin. Absorbable PDO threads provide an immediate and long-lasting effect for the body and face. Along with the firm's Barb II PDO suture, the new Barb II Anchor suture is an innovative variation of the barbed subtype for skin elevation. Bidirectional-oriented arrow-shaped cogs are produced by a special molding method to ensure the strength of the suture and maximize its fixation

ability. The suture comes housed in an L-shape, ultra-thin wall cannula.

Thread-lifting technology has been improved in recent years, Dr. Zenker stated. "We now have different, more sophisticated protocols for administration of the threads. It all comes down to the fact that it is not only the product itself that creates a result, it is the administration of a physician's technique and knowledge that makes the difference. Choosing the right threads and following the protocols carefully is critical. A lot of physicians are performing this kind of procedure without really knowing what they're doing."

"Aging is a loss of volume and lift," Dr. Werschler noted. "With fillers you really only address volume, and for the most part, with sutures, facelifts, or even with energy-based devices, all you're doing is addressing gravity. I would actually venture to say that most practitioners put threads in and then flood the area with dermal fillers so, you not only get the lifting via suspension of the skin, but you also volumize."

"What's more," he continued, "With PDO threads, for instance, there's not as much lifting as there is the fact that the threads dissolve and encourage the growth of collagen so you get volume."

Threads do have their issues, Dr. Werschler added. "They can break. Occasionally, the little cones can extrude or they make hard little bumps. People will play with them like they would play with a pimple," he noted. "Anytime you have a suture, even with really good technique and surgery, you can have extrusion of the ends of the suture. It just happens."

Even though you do a good job placing them, it doesn't mean they will stay the same forever."

Although there have been adverse events reported with thread-lifting products, Dr. Moro is circumspect. "Threads are very popular with patients, and I have not seen any complications from the threads I typically use, which are Poly L-lactic bidirectional absorbable thread cones," she said.

"I think the problem of adverse events usually lies with the practitioner," she continued. "In addition, a bigger problem with threads in Europe is that they are very expensive. Due to the cost of threads, patients expect an incredible result that may be unrealistic."

Another recently reintroduced technique, micro Botox (also known as meso or intradermal Botox) has been in the marketplace for years, but has seen a recent surge in popularity. Physicians mix a diluted solution of Botox with hydrating



substances and deliver small doses of this compound formula into the dermis of the face and neck. It is used mainly to treat fine lines and wrinkles.

Like micro Botox, PRP has been around for years but has recently experienced an increase in popularity for a variety of indications. Increasingly, practitioners include PRP and other regenerative medicine-type approaches in their liquid facelifts, including fat transfer and stem cell-based therapies.

“PRP and fat-derived stem cells have many applications, such as skin rejuvenation and hair restoration,” expressed Dr. Zenker. “But we run into limitations very quickly, as there is no consensus on many aspects, such as the best method of harvesting fat, preparation, ideal composition, etc. Furthermore, related legal aspects vary from country to country.”

Autologous fat grafts and bio-fillers are becoming more popular and even ideal for facial rejuvenation, stated Dr. Quaranta. “For instance, take an autologous fat graft combined with a cross-linked HA-based formulation and you can get a product with regenerative qualities. Fat transfer alone can be used to redefine contours, eliminate shadows, increase volume, improve texture, soften folds, decrease wrinkles and achieve an overall rejuvenated appearance,” she said.

Newer fat transfer processes yield highly filtered microfat and nano-fat, which can be used for both filling and tissue regeneration. “Fat transfer is a wonderful tool to replace volume and rejuvenate the skin, but its use still involves some controversies,” noted Dr. Zenker. “For instance, which fat is the best one – microfat, nano-fat, etc.? Also, which method is best to harvest fat? We are currently lacking good, controlled trials to compare the different ways of transferring harvested fat.”

Whether it be fat or fillers doing the filling, adding volume to the face is often central to rejuvenation treatments and involves the full artistry of the physician, noted Alexander Rivkin, M.D., a cosmetic surgeon in Los Angeles, California, U.S. “When we replace the volume in the mid-face, what we are doing more than anything else is reframing the eyes, so the focus of the face comes up to the eyes and the person looks younger. Otherwise, the focus shifts down to the lower third of the face, and the person looks older.”

“Lifting the face is, to a small degree, a physical lifting of the skin,” Dr. Rivkin indicated. “This is because we’re expanding the mid-face. However, I think that is just a minor effect, while the major effect of the lifting is that your perception of the face changes when you bring the focal point of the face up to the eyes.”

Moving further down the face, one of the most challenging areas to treat is the jawline, expressed Stephen F. Weiner, M.D., a facial plastic surgeon in Santa Rosa Beach, Florida, U.S.

“You always have to take the jawline in conjunction with the chin and enhance them simultaneously,” he said. “In those cases, you’re placing the filler at the level of the jaw, making it a little broader and more distinct. If the patient has a lot of fatty tissue there then you have to dissolve that fat somehow.”

Starting in their 30s, people lose some of the height and angle of the jaw, Dr. Weiner indicated.



Before and after dermal filler injections to the jawline, jowls, nasolabial folds, marionette folds and cheeks

Photos courtesy of Alexander Rivkin, M.D.



Before and after Steven Weiner, M.D.'s signature reJAWvenation procedure, which consisted of a series of Restylane Lyft injections to add volume to the posterior aspect of the jaw, where bone was resorbed, as well as in the prejowl sulcus

Photos courtesy of Steven F. Weiner, M.D.

“When you improve the jawline and the chin area, you’re lifting skin that originally was on the face, chin area and jawline that is now in the neck. You bring it back to where it should have been, and you improve the appearance of the upper neck significantly in the submental area,” he said.

Under the jawline, the submental area has routinely posed challenges for physicians, too. “The neck is still a neglected area, and there are various reasons for that,” said Dr. Zenker. “Primarily, it is difficult to effectively rejuvenate with only a small number of treatments, and it will cost a lot of money to treat. In all honesty, you can try skin resurfacing, line filling or lifting with threads, but it still may not deliver a very good result even after a significant amount of effort.”

The submental area is usually addressed after facial treatments, Dr. Zenker added. “Patients prioritize very clearly and make it known that after the face, neck treatments might be too much of an effort or too expensive, although some may go for a neck lift. They will spend thousands of dollars on their face and then not have any money left to improve the neck or the hands. Money is one of the biggest factors among patients.”

A lot of the neck work starts on the face, Dr. Damico indicated. “You fill the chin if the chin has shrunk back, as that is the cause of laxity in the jawline and the mandible angle. You have to rebuild some of the structures that have allowed the neck to sag,” he elaborated.

“You can address the platysmal bands with Botox in necklace lines, and Nefertiti lifts, which is an alternative approach that addresses neck and jawline concerns via a series of Botox injections,” Dr. Damico stated.

As non-surgical, less-invasive therapies grow in popularity, longer-lasting products and a next generation of clinical techniques are also in order, noted Dr. Werschler. “The industry has been sort of slow to go after longer-lasting products because of the business model, which will show diminishing return on investment when, for example, patients that overcome a skin condition using a particular product don’t need to buy it again after a while.”

According to Dr. Zenker, improved diagnostic tools will be part of the future, as a person’s overall health and wellness need to be documented.

“I imagine that the aesthetic world will adopt diagnostic tools that can better predict what’s going to happen within the aging process of an individual, and then apply preventive measures,” she said.



Before and after a combination treatment regimen of Botox injections to the forehead, glabella, crow’s feet and platysmal bands; Voluma SC in the cheeks and under the eyes; Belotero Balance and Kybella
Photos courtesy of Peter J. Damico, M.D.

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“Look at all the self-diagnosis apps that can check moles and other things. What about apps that evaluate facial wrinkles or facial volume loss? That might change the demands, expectations and profile of the patient. People come into clinics these days and many of them already know what kind of treatment they want. They know about Botox and they know a bit about lasers.”

Ultimately what will also change is the perception of human beauty, said Dr. Moro. “Increasingly, the pressure will grow for people to always look good or younger looking. The norms of beauty are changing, especially among younger generations. The consumer profile is on the verge of changing very dramatically in the aesthetic arena,” she predicted. ■



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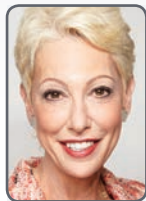
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