

The Facial Contouring and Support System: An Innovative Method for Midfacial Fat Repositioning

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Summary: Minimally invasive rejuvenation procedures are increasingly popular with patients. In the midface, these might involve the introduction of sutures to lift and secure the malar tissue, fat grafts, and fillers to increase volume. This article describes a new facial contouring and support system, which uses an innovative hollow, double-beveled needle to which a 2/0 polypropylene suture may be anchored. Among 102 patients there were no complications, and follow-up at 3–5 years indicates little or no loss of satisfaction with the outcome. The procedure can be combined with other modalities—including fillers and skin peels—to achieve an overall, balanced, natural look for the patient. Potential adjustability and reversibility of the procedure are reassuring for both patient and surgeon and add to the technique’s versatility. (*Plast Reconstr Surg Glob Open* 2014;2:e215; doi: 10.1097/GOX.000000000000137; Published online 18 August 2014.)

Aging of the midface involves fat tissue atrophy, ptosis of the malar and cheek fat pads, osseous rotation, and alterations in the appearance

and tone of the outer layers of the skin.¹ Fat tissue atrophy and ptosis lead to loss of contours in the malar area, development of tear troughs, nasolabial folds and marionette lines, and increasing fullness of the lower cheeks.^{2,3}

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Facial fat repositioning is key to any natural rejuvenation protocol.^{4,5} In the early aging process and in patients with thin faces, fillers or fat grafting can be used alone. Patients with medium and heavy faces—and when ptosis is the main issue—will require deep tissue support of the fat pads (in some cases combined with fillers or fat grafts) to achieve the desired effect.⁴ Traditional surgical solutions for midfacial rejuvenation (and even some newer ones)⁶ include use of temporal, frontal, and buccal approaches combined with extensive subperiosteal dissection and bony anchoring of suspension material.³

It is advisable always, when possible, to avoid extensive surgical dissection to minimize scarring or tissue damage. Minimally invasive midface rejuvenation procedures reported in recent years include the use of absorbable and nonabsorbable sutures, injections and implants to support the deep tissue,^{7–10} and skeletal implants of porous polyethylene.⁵

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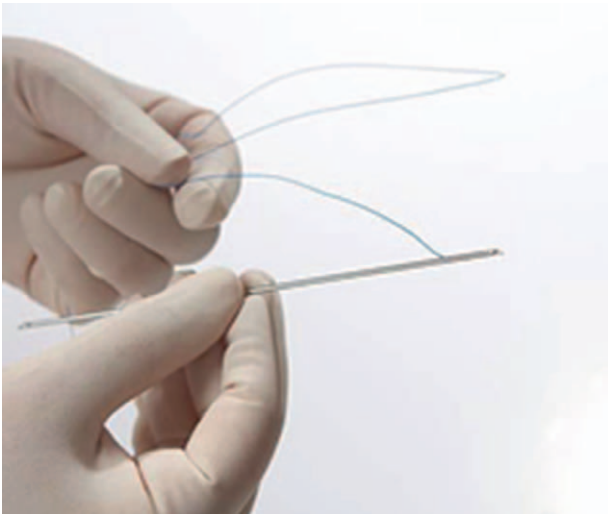


Fig. 1. The hollow, double-beveled needle with the sliding carriage to which a 2/0 polypropylene suture may be anchored, a key component of the facial contouring and support system.

We describe a minimally invasive midface lift—part of the facial contouring and support system—which uses an innovative 15-cm long, hollow, double-beveled needle with a 14-cm groove bearing a tiny, sliding carriage to which a 2/0 polypropylene suture may be anchored (Fig. 1). This device is used to create suspension loops, which are anchored to

the temporalis fascia and reach into the midfacial fat pads to provide deep tissue support.

TECHNIQUE

The procedure is most appropriate for patients with ptosis causing heaviness of the lower cheek and patients requiring moderate restoration of volume at the lid-cheek junction. It is performed in an outpatient setting under standard local anesthesia or light sedation, if requested.

The patients' faces are marked while upright, before they receive a local anesthetic lying down.

An oblique 3- to 4-cm incision is made in the temporal area, posterior to the hairline; the superficial temporalis fascia is divided then undermined in an anterior direction, creating a 2–3-cm wide pocket between the incision and the junction of the lateral orbital rim and zygomatic arch.

The needle holding the suture is introduced into the pocket and guided toward the bony junction using a Freeman retractor (Fig. 2A). Surgeons need to “feel” their way through the patient’s tissues to guide the suture. The needle is then pushed anteriorly and medially through the thick fascia into the suborbicularis plane and perforates the skin (first relay point). The needle is partially extracted, leaving just the tip within the tissues (deep to the orbi-

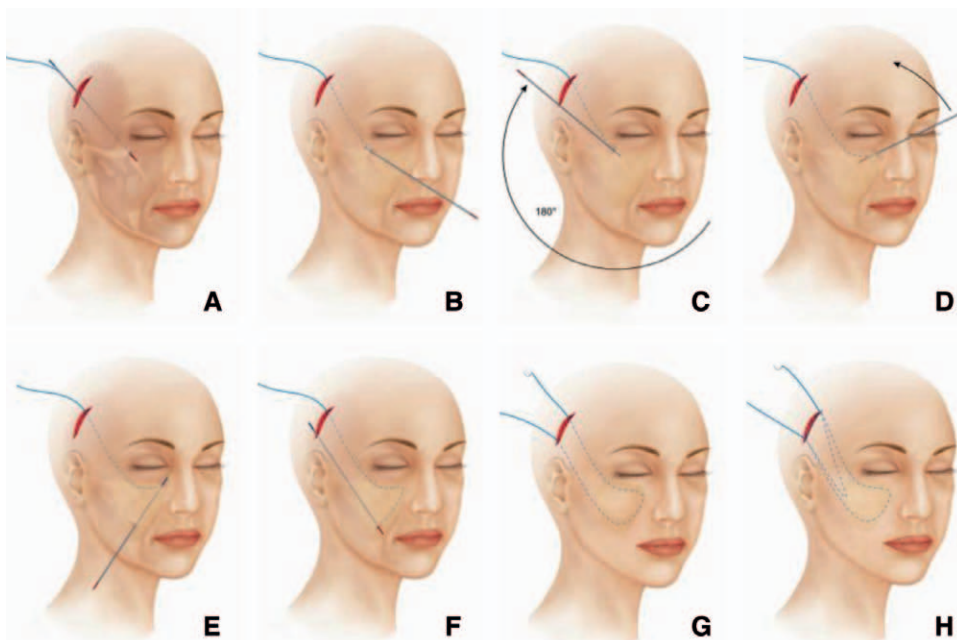


Fig. 2. Facial contouring and support system: midface lift procedure. A–G, Following the initial insertion posterior to the hairline, the double-beveled needle is passed through the suborbicularis plane and the medial infraorbital area—piercing the skin at each point but without fully extracting the needle—before returning to the point of insertion to create loops that will support the deep tissue. H, Tightening of the orbicularis oculi can be achieved within the same procedure.



Fig. 3. Before and after a midface lift using the facial contouring support system (no ancillary procedure was combined).

cularis oculi) (Fig. 2B), and the needle shaft is then rotated through 180 degrees to redirect the tip medially (Fig. 2C).

The needle is then brought through the suborbicularis plane toward the medial infraorbital area, guided by the preoperative skin markings, and again partially extracted (second relay point), leaving the tip at the required depth within the deep medial cheek fat. The shaft is rotated to aim the tip inferiorly (Fig. 2D), and the needle is guided caudally and laterally following a curved trajectory before puncturing the skin for the third time (last relay point) (Fig. 2E). It is then again partially extracted and then redirected to travel subcutaneously and pierce the superficial temporalis fascia so that it can be extracted through the initial incision (Fig. 2F, G).

Having firmly attached the suture to the deep temporalis fascia, the degree of tension to be applied is assessed with the patient seated to achieve the desired result and symmetry.

In heavy faces, a second suture may be inserted to enhance support.

For patients who also require tightening of the orbicularis oculi, the needle is introduced into the temporalis pocket and pushed through the superficial temporalis fascia at the hairline to access the subcutaneous plane, where it is guided toward the previously determined target point. The needle tip is then used to secure the lateral fibers of the orbicularis oculi muscle before being redirected toward the temporalis area (Fig. 2H). The suture is attached to the deep temporalis fascia as described above.

Postoperative use of ice packs and steroids improves patient comfort and reduces the time required to recover from the procedure.

DISCUSSION

Since 2006, 102 patients have undergone this procedure: alone in 43 patients (7 men; 36 women); combined with a lower face/neck lift procedure in 27 patients (5 men; 22 women); and combined with dermal fillers or fat grafting in 32 patients (3 men; 29 women).

Potentially worrying complications would include nerve branch or vascular bundle damage causing bleeding, soft-tissue damage (cheese wiring), and infection. In early cases, some asymmetry/distortion occurred, due to suboptimal placement of suspension loops; however, perhaps surprisingly, no complications have been reported to date.

Most patients who had their procedure since it was standardized (within the last 5 years) expressed a moderate to high rate of satisfaction (as judged by the surgeon during review consultations) (Fig. 3). Factors affecting patient satisfaction were appropriate preoperative indication, assessment of the patient's expectations, choice of technique, correct suture placement, and existing midfacial fat volume/degree of ptosis. Although the procedure can be adjusted or reversed, no patients have requested suture removal.

The double-beveled needle is currently the only device that allows suspension loops to be placed accurately in the deep tissues via a percutaneous insertion. Other procedures require repeated extraction

and reintroduction of the sutures, resulting in superficial dimpling in the cheek.

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