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Where the Exchange on Aesthetic Perspective Begins

Facial Surgery

Midface lift positioned for takeoff

New dissolvable implant, disposable tools make fixation fast, reliable, adjustable

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By middle age, the marks of soft tissue laxity are visible on the face. The corners of the mouth are drooping, the lower eyelids have lengthened, and the malar fat pads are slipping south.

To correct these structural changes and rejuvenate the face, Paul Tessier, M.D., renowned craniofacial surgeon, first described the "midface lift."

However, putting the tissue back where it belonged and holding it there was not an easy matter. Surgeons encountered three problems: difficulty of dissection, difficulty of fixation and unpredictability of results.

Attempts to "improve" on Dr. Tessier's procedure led to a profusion of individualized techniques but only modest gains in ease or predictability. Today, the midface continues to be the most complicated and frustrating operation that many surgeons perform.

We look at the midface as a **'transitional' procedure**, not as a replacement for the facelift.

Altering midface dynamic

In October 2003, the U.S. Food and Drug Administration (FDA) cleared the Endotine Midface developed by Coapt Systems for subperiosteal midface suspension.

Packaged with disposable insertion tools, the implant is a small, five-tined platform attached to an ultra-thin leash. The tines grip subdermal cheek tissue, spreading tension over a broad area. Once implanted, the L-lactide/glycolide device begins to dissolve as tissues reaffix to the zygoma and maxilla. At five months, only 40 percent of the initial mass remains. At 12 months, the device is completely reabsorbed.

After using the implant in more than 75 patients (about half of them enrolled in clinical trials), we conclude that the Endotine makes fixation easy, fast and adjustable — without the awkward, unpredictable and hazardous placement of sutures. Operating time is markedly reduced by as much as an hour overall. Most importantly, results are predictable and often dramatic, leading to uniformly satisfied patients.

Patient selection

Patient selection is a key factor in good outcomes. The target population is 40- to 60-year-old women and men who have minimal to moderate laxity and good elasticity.

Younger patients get more dramatic results with improvements extending from the eyes to the lower midface and jowl. Benefits to older patients are concentrated in the upper midface. We do not recommend the procedure for patients over the age of 60 because attachment between periosteum and soft tissue is too lax.

Unfamiliarity

Very few patients are familiar with the midface lift.

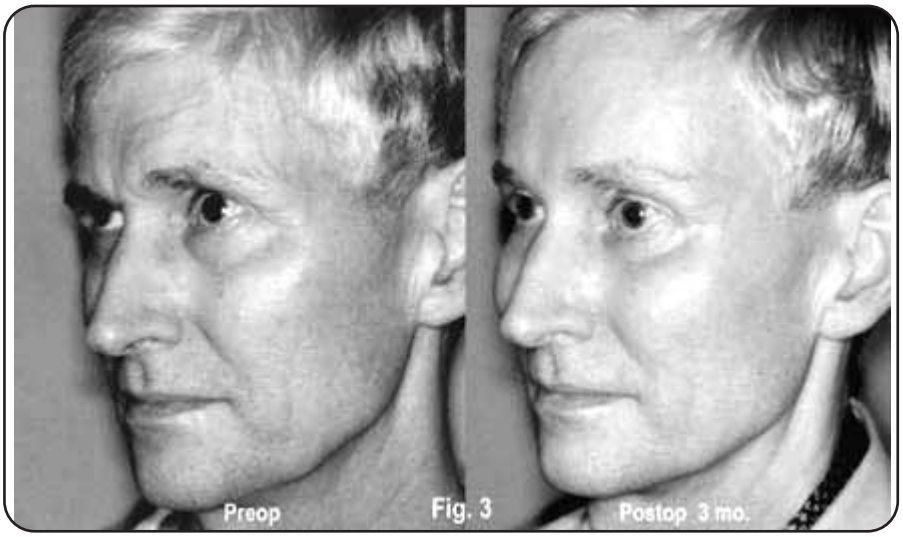
Some arrive for consultation with a browlift in mind but later opt for a combination of browlift and midface lift. This produces synergistic results that are more dramatic than the midface alone. Other patients seek a "natural," slightly younger look with minimal discomfort and downtime. A third group — generally in their 50s — has already had surgical intervention to the lower face and neck but complains that this did not produce a healthy, rejuvenated appearance.

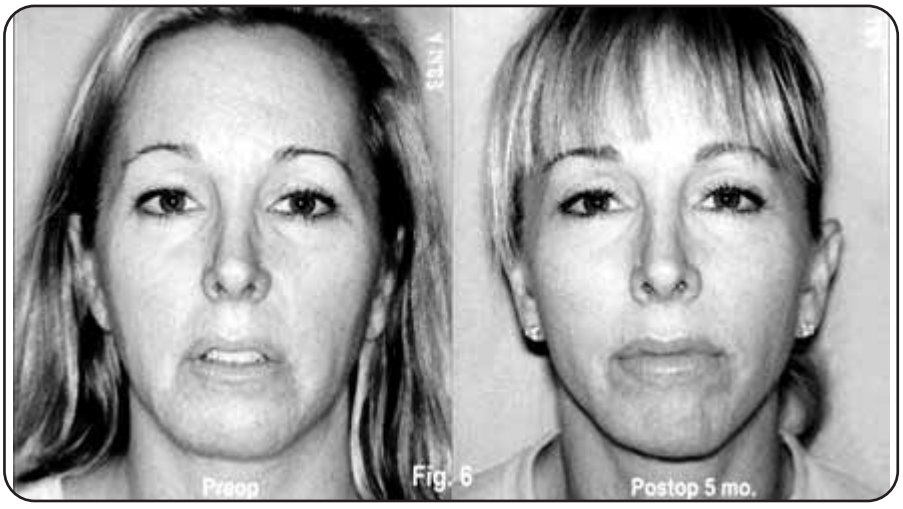
Overall, the midface is ideal for patients who have been receiving botulinum and dermal filler treatments and are now willing to move on to a procedure that has fewer stigmata and less scarring and potential hairline alterations than a full facelift. We look at the midface as a "transitional" procedure, not as a replacement for the facelift.

Implanting the device

The Endotine may be inserted through incisions in either the temporal or buccal sulcus areas. The dissection phase of the operation remains largely unchanged, whether using an open or endoscopic approach.

If the Endotine is implanted through the temporal incision, the device is introduced using the insertion tool. If the Endotine is implanted through an oral incision in a retrograde fashion, it helps to first trim the edges of the leash so passage is





Patients are shown (above, left and right) before and three months after a midface lift with the Endotine device, and (below, left and right) before and five months after the procedure.

Photos: R. Laurence Berkowitz, M.D.

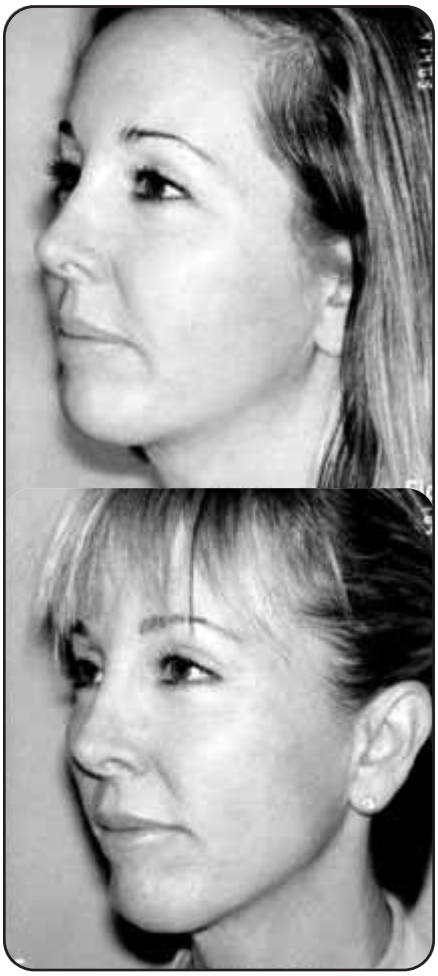
smoother. The device is then introduced through the mouth, grasped (via temporal incisions) with forceps, and pulled through.

Regardless of point of entry, the device sits over the maxillary antrum, not the zygoma. After the insertion tool is retracted, digital pressure to the exterior of the cheek forces the tines into the periosteum. Tension on the leash completes the engagement process and lifts the periosteum along with attached skin and soft tissue. Surgeons can quickly experiment with vectors and degrees of tautness until the desired aesthetic is achieved. Finally, the leash is sutured to deep temporal fascia, and all incisions are closed.

More dramatic results

Combining the midface with a browlift will produce more elevation and, therefore, more dramatic results. (In fact, overcorrection is now a possibility.) The operation takes about 50 percent longer than a browlift alone.

In the postoperative phase, patients need to be on a soft food diet and warned against heavy lifting or straining. Bruising and edema should resolve within seven to 14 days. The recovery period can be reduced by diligent use of ice compresses for the first 48 hours. Some patients, especially thinner ones, may complain of discomfort upon palpation. However, this has not been a significant issue. Placement of the device is sufficiently distant from the facial nerve branches (frontal, orbital and zygomatic) that nerve damage is unlikely. Depending on the extent of dissection, a rare patient may experience nerve weakness during brow elevation, closure of eyes, or elevation of the corner of the mouth. This is a temporary issue, unrelated to fixation; it should resolve within six weeks.



A patient before (above) and after a midface lift with the Endotine device.

Photo: R. Laurence Berkowitz, M.D.

In the first 75-plus consecutive patients, there have been no complications, no extrusions, no instances when the lift slipped, and no requests for removal of the device.

Benefits of sutureless fixation

The problems with sutures are numerous. It takes time to prepare and place the sutures. They have to be threaded up to the brow like puppet strings. Adjustments to tension or vector are difficult to achieve and time-consuming.

If placed in the wrong position, sutures must be removed and redone. This leads to multiple puncture points, which are vulnerable to infection. Sutures that remain in place may break, entrap nerves, tear through tissue or cause dimpling.

Today, the midface continues to be **the most complicated and frustrating operation** that many surgeons perform.

Use of the Endotine Midface eliminates all of these problems. (It is especially helpful in patients who have more tissue mass, such as men.) Achieving symmetry is easy and fast. If necessary, surgeons can go back in and reposition the device or tighten the lift for a period of several weeks after surgery.

In the past, we've experienced redo rates of around 10 percent. The Endotine also eliminates that. There is only one trip to the operating room. Any needed adjustments can be quickly made in the office under a local anesthetic. Finally, because the device is bioabsorbable, there is no need to remove sutures.

The Endotine is the first device specifically designed for subperiosteal midface tissue fixation. It shaves 30 to 60 minutes and a lot of frustration from a standard operation.

Conclusion

The midface lift, when approached through intraoral or temporal incisions and matched to the Endotine, effectively addresses the concerns of middle-aged women and men who want to look rejuvenated in a subtle, natural way with less bruising, swelling and downtime.

Patients who have had a forehead lift in conjunction with the midface suspension appear to be the happiest. Many report favorable comments from friends and family, leading to a high level of satisfaction. **CST**

Dr. Berkowitz is a plastic surgeon based in the San Francisco Bay Area. Dr. Beeson has a private practice in Carmel, Ind., where he performs otolaryngology/head, neck and facial plastic surgery. Dr. Moscoe is a plastic surgeon in Austin, Texas.

Disclosure: Drs. Berkowitz, Beeson and Moscoe have served as clinical investigators for Coapt Systems. Dr. Moscoe has no financial interest in the company. As members of the Coapt medical advisory board, Drs. Beeson and Berkowitz have stock option grants.

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