During facial aging, a series of physical and biochemical changes leading to tissue hypotrophy, sagging, and wrinkles takes place not only at the level of the skin but also in the fatty tissue, muscle, and other structures. One of these changes is the decrease in volume and elasticity of the tissue because of alteration of collagen fiber formation. The intermittent use of silhouette sutures (partially reabsorbable) is aimed at preventing and treating the tissue sagginess and reinforcing the soft tissue of the face. The suture suspension technique falls in between the more aggressive and invasive procedures (for example, face lift) and the less invasive ones (such as fillers or Botox); the permanency of the results could measure 3 to 4 years.

The physical and chemical configuration of the silhouette sutures allows facial tissue repositioning by exerting immediate traction and repositioning of the soft tissue of the face and buildup of new collagen fiber formation around its structure, adding tissue support against the gravitational pull.

The initial traction is produce by the presence of the slow-absorbing cones, which are reinforced by the buildup of new collagen formation. After the cones are reabsorbed the tissue traction is maintain by the collagen around and inside a series of knots intercalated between the cones.

These sutures could be readjusted or repositioned in the future (1.5 to 2 years later) by pulling them from the temporal area, where all of them meet. Further sutures could be added at that time to reinforce the previous ones or to treat different areas. The sutures could be inserted at different levels on the soft tissue of the face (eg, superficial, intermedium, or deep).

**SUTURE DESCRIPTION**

1. **Straight needle (Figs. 1 and 2)**
   Six in long, allows insertion of the suture into the soft tissue.

2. **Main suture**
   Monofilament nonabsorbable 3-0 polypropylene suture, 25 cm long.
   The distal 10 cm of the sutures contains 11 knots at approximately 10-mm intervals. Each knot is intercalated with absorbable cones.
   The knotted polypropylene exerts a lasting soft tissue anchoring.

3. **Cones**
   The cones are a series of engaging elements, 10 in total.
   They are about 1.12 mm diameter at the base and 2.50 mm long hollow structures.
   They are made of copolymers of glycolic and lactic acid. They are absorbable, taking approximately 12 months for complete absorption.
The polypropylene suture is inserted through the hollow cones like a Hawaiian necklace. The cones are located in the distal 10 cm of the suture, between the first and the last knots; the rest of the cones are intercalated with the knots. They exert traction for about 12 to 18 months.

4. Curved needle
The curved needle is located in the proximal end of the suture and secures the proximal end of the sutures to the deep temporal fascia.

A patch or mesh is applied to the deep temporal fascia to prevent tearing or cheese-wire effect on the soft tissue of the temporal area.

**TECHNICAL DESCRIPTION**

**Anesthesia**
The procedure is done under local anesthesia with oral or intramuscular sedation. The local anesthesia could be applied in two different ways: (1) infiltration anesthesia immediately underneath each trajectory of the sutures, or (2) nerve block anesthesia, per each branch of the trigeminal nerve.

**Surgical Technique**

**Access incision**
1. Incision location
   The access incision is located in the temporal area, approximately 1 cm inferior to the superior temporal crest and 1 to 3 cm behind the hairline.

2. Incision orientation
   The superior end of the incision is approximately 1 cm behind the temporal hairline and the lower portion of the incision is about 3 cm behind the temporal hairline.

3. Depth of the incision
   The incision is deepened down through the subcutaneous tissue and the superficial temporal fascia, down to the deep temporal fascia.

4. Dissection
   A dissection is carried down between the superficial and deep temporal fascia, up to the level of the hairline. At this level, in the hair-bearing area, the sutures are located between the superficial and deep temporal fascia to prevent pressure alopecia in the hair-bearing area of the temple.

**Reinforcement of the deep temporal fascia**
A patch, graft, or mesh (absorbable or not) is used to prevent shredding or tearing of the deep temporal fascia.

**Exit Lines**
These are the lines where all the sutures come out through the skin. Usually there are two lines:

1. Nasolabial line
   Located 5 mm lateral to the nasolabial groove.

2. Jowl line
   After pulling the saggy jowls upward until the skin appears smooth, elevated, and even, a line is marked joining the buccal commissure and the gonion of the mandible. The location of this line may vary to a lower location if there are heavy jowls.

**Exit Points**
There are several exit points located on or close to the exit lines; they depend on the number of sutures used during the procedure. Generally, the number of sutures used is six per side of the face (malar, submalar, cheek, and jowls).

1. Locations of the exit points:
   Exit point number 1: located halfway between the alae of the nose and the buccal commissure and 5 mm lateral to the nasolabial groove
   Exit point number 2: located 1.0 cm lower than number 1, and on the same nasolabial exit line.
Exit point number 3: located at the junction of nasolabial and jowl lines. Sometimes, if the jowls are heavy or large, this exit point is located 1 or 1.5 cm lower.

Exit point number 4: located 1.0 cm lateral to point number 3, on the jowl line.

Exit point number 5: located 1.0 cm lateral to point number 4, on the jowl line.

Exit point number 6: located 1.0 cm lateral to point number five, on the jowl line.

2. Suture trajectory (skin marks)
   The two nasolabial sutures go from the lower-most portion of the temporal incision to exit points 1 and 2.
   Suture number 3 (buccal commissure or labial mental) goes to the uppermost end of the temporal incision.
   Sutures 4, 5, and 6, the jowl sutures, go inferi-orly to suture number 3, in the same order (see Fig.).
   Sutures 3, 4, 5, and 6 cross sutures 1 and 2 at the level of the zygoma.

Suture Deployment

The sutures are deployed at two different levels in regard to their location (Fig. 3):

1. Temporal area deployment
   The sutures are deployed between the superfi-cial and deep temporal fascia (not in the subcutaneous tissue, hair-bearing area) to avoid pressure alopecia postoperatively.
   Once the straight needle reaches the ante-rior temporal hairline, the needle/suture be comes more superficial, into the subcutaneous tissue.

2. Facial deployment (malar, submalar, jowls)
   In these areas the suture is deployed in the sub-cutaneous tissue. Care is taken not to get too close to the dermis to prevent dimpling of the skin, or into the deep and fixed tissue, preventing the motion of the sutures.
   Because of the normal curvature between the malar and submalar area, the needle at this level has the tendency to exit the skin

Fig. 3. Suture deployment.

Fig. 4. Front view of a 77-year-old patient 1 year after closed melo-pexy using six silhouette sutures per side, on the malar area, from the middle of the nasolabial fold to the posterior portion of the jowling. Preauricular skin was excised.
prematurely; lifting the submalar tissue to the level of the malar area prevents an uneven insertion of the suture.

Suture Traction and Fixation

Although each suture’s traction is evaluated at the time of insertion, the final tension, traction, and adjustment are done at the end of the procedure when the sutures are tied in pairs into the deep temporal fascia, which has been reinforced with mesh, either absorbable or nonabsorbable. The temporal incision is closed in layers, the superficial fascia first to cover the mesh or patch and then the skin.

DRESSING AND POSTOPERATIVE CARE

Immediately after surgery a 1 × 5 × 5 inch Steri-Strip is applied to the entire malar-submalar and temporal area to support the soft tissue during the healing process to prevent or decrease the chance of early soft tissue sagginess attributable to the cheese-wiring effect of the suture over the inflamed and fragile soft tissue of the face. The stitches on the temporal area are removed in 5 to 7 days.

The patient is advised against opening the mouth wide, hard chewing, or puckering the lips (smoking or drinking with straws) for about 2 weeks after surgery to prevent cut-through effect of the suture on the tissue, inflammation, pain, and tenderness.
PATIENT SELECTION
Closed Midface Technique (Closed Melopexy)

A patient who has the following attributes is a good candidate for the closed midface technique using the silhouette sutures:

- Has mild to moderate midface ptosis
- Is in the late 30s to mid 60s age range
- Wishes to avoid scars associated with traditional surgical lifts
- Accepts 1 week of downtime
- Has realistic expectations (accepts a modest lift, a shorter period of improvement than open techniques, and the need for retightening of the sutures, or additional or complementary procedures to maintain improvement or correct skin laxity)

- Desires some improvement before facial surgery

Poor candidates for this procedure are characterized by:

- Excessive skin laxity and wrinkling
- Very thin faces (a moderate amount of facial fat is required to prevent suture palpability)
- Wide, heavy, or fatty faces
- Thick, heavy, sebaceous skin
- Anticipation of significant weight loss after surgery

Melopexy with Temporal Dissection

The temporal dissection is performed to redrape any excess skin gathering in temporal area.

Fig. 7. Front view of a 42-year-old patient 1 year after closed melopexy using six silhouette sutures per side, on the malar area, from the lower half of the nasolabial fold to the posterior portion of the jowling. Liposuction was applied to the jowls and two silhouette sutures were used on each side of the neck.

Fig. 8. Left three-quarter view of the patient shown in Fig. 7 1 year after closed melopexy using six silhouette sutures per side, on the malar area, from the lower half of the nasolabial fold to the posterior portion of the jowling. Liposuction was applied to the jowls and two silhouette sutures were used on each side of the neck.
Melopexy with Subperiosteal Dissection

This procedure is performed to increase the amount of scar tissue on the malar area assisting the holding power of the sutures.

Melopexy with Temporal and Malar Dissection

This technique allows further repositioning of the soft tissue in the malar and temporal area plus more aggressive anchoring of the tissue.

Candidates for this procedure can be divided in three major groups:

- **Presurgical**: for those patients who are too young or not willing to have an open face lift.
- **Postsurgical**: those patients who recently have had an open face lift but required further improvement without major surgery.
- **Older patients not desiring major surgeries.**

For results of silhouette sutures in patients, see Figs. 4–9.

REFERENCES