HOW I DO IT

Temporal Rejuvenation with Fillers: Global Faceculpture Approach

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Nonsurgical approaches to temporal rejuvenation is a new area of interest for aesthetic practitioners, with use of this technique increasing because of patient demand, but there is no universally acknowledged technique for this procedure. Temporal lifting is of the greatest benefit to individuals in their mid-30s or early 40s who are noticing the first signs of aging around the eyes; it helps to eliminate the "sad" or "tired" look without the need to undergo major surgery. This procedure lifts the brows, reduces crow's feet lines, firms the outer area of the eye, and lightens the hooding of the outer eyelid. Results can be dramatic, providing a "chiselled," youthful appearance, with minimal or no scarring, little bleeding, and no hair loss. A major benefit of temporal lifting is that it is a short procedure, with a minimal recovery period. It can be performed on an outpatient basis or under twilight anaesthesia involving a 12- to 24-hour hospitalization followed by a 7- to 15-day recovery period.

Anatomy of the Temporal Area

The temporal area is situated above the zygomatic arch, limited upward by the temporal crest or linea temporalis (the junction of the frontal, temporal, and parietal bones) and laterally by the hairline. Below the skin and subcutaneous tissue are three fascial layers within the temporal region, comprising the superficial temporal fascia (or temporoparietal fascia), which is strongly attached to the subcutaneous tissue, and the superficial and deep layers of the deep temporal fascia attached to the bony floor.[1] Between those superficial and deep temporal fascial layers is the Merkel space, a natural sliding space that is important when performing temporal dissection. The trigeminal nerve supplies sensory innervation of temporal region.

Rejuvenation Products

Facial aesthetics and rejuvenation are evolving rapidly because of changes in products, procedures, and patient demands. Patients typically request less-aggressive treatments with little or no downtime but still have an expectation of achieving optimum, effective results. Clinicians can benefit from ongoing guidance on products, a new grading system for facial aging, tailoring treatments to individual patients, treating multiple facial areas, and using combinations of products to optimize outcomes. There are a number of products available for nonsurgical temporal rejuvenation that are safe, effective, and versatile, including fillers such as hyaluronic acid (HA), calcium hydroxyl-apatite, poly-L-lactic acid, and botulinum toxin type-A (BoNTA).[2] There are a number of HA products available, but the author has extensive and specific experience with the Juvéderm family of HA products, so the comments below reflect this experience. Cross-linked HA dermal fillers are easy to use and well-tolerated by patients because they

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contain lidocaine to reduce the pain of injection.[3] Juvéderm VOLUMA is also effective for temporal rejuvenation and temporal volume restoration because it is smooth, viscous, and robust, making it easy to inject during treatment and resulting in a full, smooth, natural look and feel, with benefits lasting up to18 months after treatment.[4] A multidisciplinary group of aesthetic treatment experts has considered the role of BoNTA in temporal rejuvenation and concluded that the combination of onaBoNTA and HA can provide additional benefit when BoNTA is used to reduce activity and volume of the masseter muscles so that the other masticator muscle, the temporal muscle, has more

activity and increases in volume. That creates a volume augmentation of the temporal area.[5]

Recommendations for Nonsurgical Approaches to Temporal Rejuvenation

To provide an objective pretreatment assessment of the patient to determine suitability for temporal rejuvenation, the author recommends the use of his four-point temporal aging scale at baseline (Figure 1).

(1) Stage 1: Normal, convex, or straight temporal fossa.

Figure 1. Four-point temporal aging scale. Stage 1: Normal, convex, or straight temporal fossa, 30-year-old subject. Stage 2: Early signs of a slight depression (hollow), 50-year-old subject. Stage 3: Concavity of temporal fossa, with some visible temporal vessels, eyebrow tails are drooping, 40-year-old subject. Stage 4: Skeletonization of the temporal fossa, bones are visible, severely visible veins and artery, and severe concavity of the fossa, 50-year-old subject.

(2) Stage 2: Early signs of a slight depression (hollow).

(3) Stage 3: Concavity of temporal fossa, with some visible temporal vessels. The eyebrow tails also droop.

(4) Stage 4: Skeletonization of the temporal fossa, bones are visible; severely visible veins and artery; severe concavity of the fossa.

Depending upon the stage of temporal aging at baseline, the optimum aesthetic product and volume required can then generally be established in advance of treatment. The author recommends the following guideline to obtain maximum benefits (Figure 2).

(1) Stage 1: No treatment.

(2) Stage 2: 0.4 to 0.8 mL of HA filler per side or 0.5 to 1 mL per side of a volume-restoring product.

(3) Stage 3: 1 to 2 mL of a volume-restoring product per side.

(4) Stage 4: 2 to 4mL of a volume-restoring product per side.

Figure 2. Results after injection of 1 mL of Voluma in each temporal fossa (patient stage 3). Top row: Before treatment. Bottom row: After treatment (note the significant improvement of the temporal shadow and the smoothness of the peri-orbital contour and slight elevation of the eyebrow).

Figure 3. Recommended injection sites based on clinical correlation with temporal anatomy. This photograph shows the four quadrants (outlined by the dark blue cross), with the limits of the temporal zone in purple (zygomatic arch is horizontal, sublined with a double stroke). The facial nerve branches are drawn in white. The numbered quadrants show the order of injection. This injection is performed in the infero-anterior quadrant, which is the most effective; note the immediate volume augmentation obtain with the injection of Voluma. The injection sites are supported by knowledge of the underlying anatomy, with the temporal area consisting of the following five bones (see picture below left): frontal (blue), parietal (green), temporal (pink), malar (orange), and sphenoid (yellow). Note the depth of the temporal fossa in the last picture. This is also seen in the temporal dissection (below right), where the junction of the convex frontal and concave temporal bones can be seen, as well as the periosteum (white). The temporalis muscle (dark red) and the deep temporal fat pad are situated in the lowest part of the muscle and the temporal fossa. The inferior section of the deep temporalis fascia (grey–white) can be seen, together with the double layers including the superficial temporal fat pad (yellow). The superficial temporalis fascia (red–grey) is situated posteriorly and inferiorly, including the superficial temporal vessels. The frontal branches of the facial nerve (white) can be seen crossing the zygomatic arch and the temporal fossa. The oblique route of the facial nerve should be noted, as well as the depth of the temporal fossa. The orbicularis muscle (red) around the orbit is in evidence, as well as the superficial malar fat (yellow), positioned lower than the orbicularis muscle.

The author recommends use of a 27 G needle with a bolus injection technique because the use of a microcannula longer than a needle results in a more-painful injection in this deep, limited zone. To perform injections safely, the author has developed a pattern of four sections physically drawn onto the patient as follows (Figure 3).

(1) The zygomatic arch: including the inferior horizontal limit.

(2) The lateral part of the orbit (orbitomalar apophysis): includes the curved anterior limit.

(3) The linea temporalis (temporal crest) fusion zone between the frontal, parietal, and temporal bones, where the periosteum, the deep temporal fascia, and the peri-orbital retaining ligaments are attached: includes the curved superior limit.

(4) The hairline: includes the posterior limit of the visible temporal fossa. For a bald patient, the posterior landmark is the end of the linea temporalis, at the junction of the parietal temporal and occipital bones. It roughly follows the curve of the ear.

2 Once completed, the four quadrants can be determined by drawing on the patient a vertical line at the halfway point of the zygomatic arch and a horizontal line from the lateral canthus (Figure 3).

The purpose of the first injection is to refill the anterior–inferior quadrant, because it is the safest and the most effective injection point. The temporal fossa quadrant is the deepest area because the needle must penetrate to a depth of 1 to 1.5 cm. If this proves insufficient, a second injection should be performed at the junction of the linea temporalis and the superior orbital rim, which then **3** constitutes the second refill zone. Once completed, an injection can then be performed into the posterior-inferior quadrant, which is situated at the most lateral section of the zygomatic arch. If the depression is severe, injection of the last quadrant, the posterosuperior area, can be made.

Injections must be made as deep as possible and positioned under the deep temporalis fascia to give more volume projection and to avoid the facial nerve. In the author's experience, a subcutaneous injection is less effective because the subcutaneous soft tissues adhere strongly to the skin, and it can be unsafe for the vessels. Injecting into the sliding space (the Merkel space) is not efficient because the product will move and disappear quickly.

The risks associated with nonsurgical aesthetic techniques generally include bruising and pin-prick bleeding, especially in cases in which superficial, subcutaneous injections are used. Some patients experience mild pain for 1 day and when they chew or bite for 3 to 5 days after treatment.

Conclusions

Nonsurgical temporal rejuvenation has evolved significantly over recent years, and popularity is increasing because of patient demand, particularly because it has a short recovery period. The benefits of temporal facelifts are greatest for individuals in their mid-30s or early 40s, in whom the results of this highly successful procedure can be dramatic. In this paper, recommendations for nonsurgical techniques for temporal rejuvenation have been discussed, as well as consideration of effective products available. According to the stage of temporal aging at baseline, the optimum product and volume required can be established before treatment to achieve maximum benefits.

References

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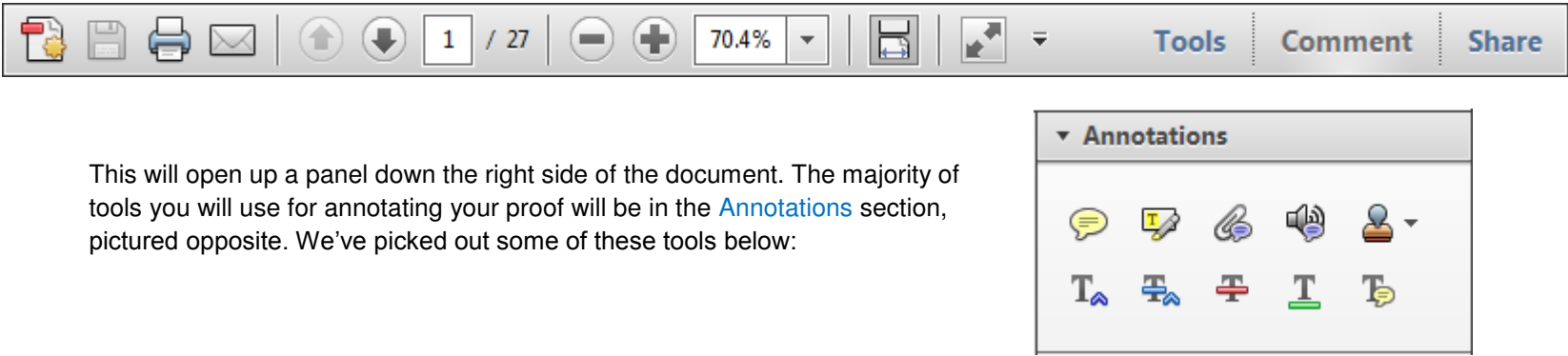
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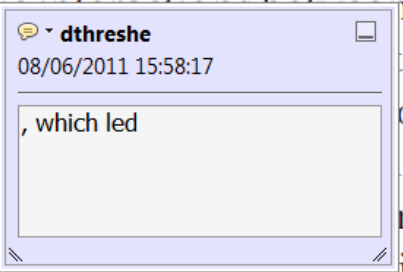
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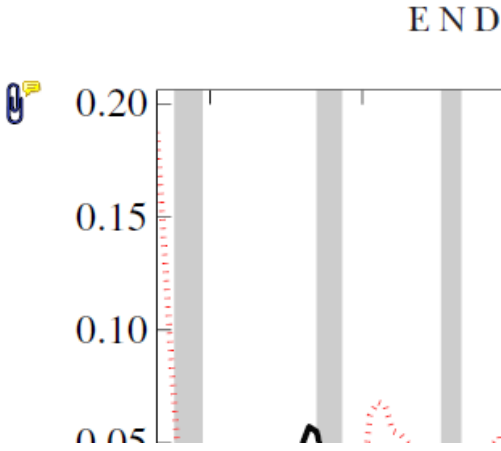# USING e-ANNOTATION TOOLS FOR ELECTRONIC PROOF CORRECTION

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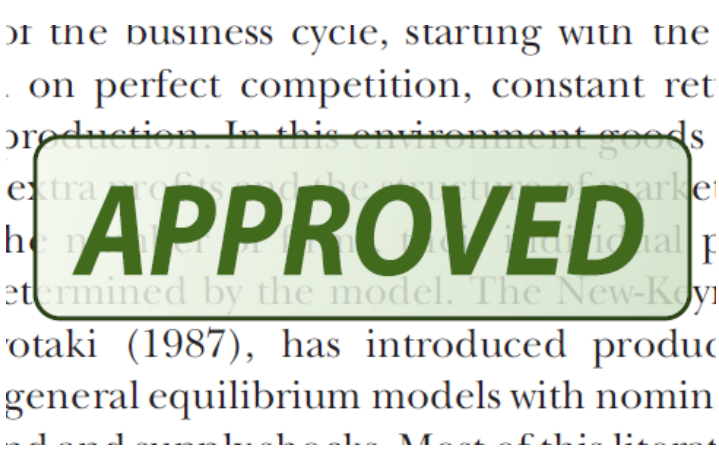
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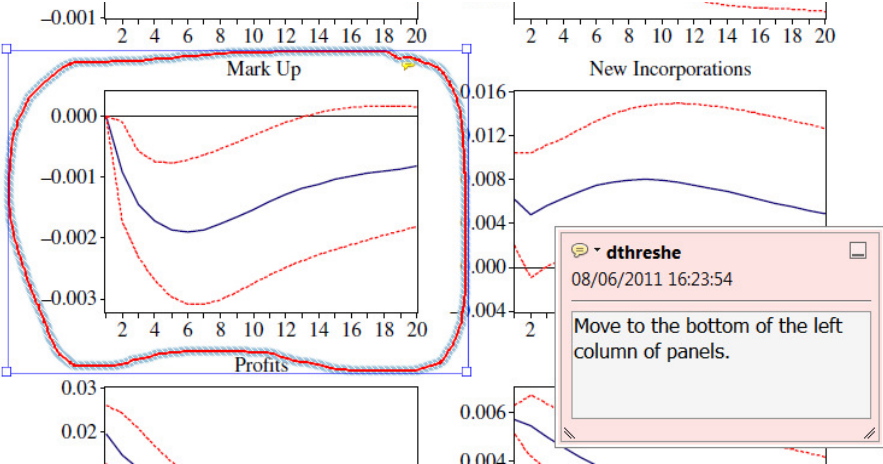
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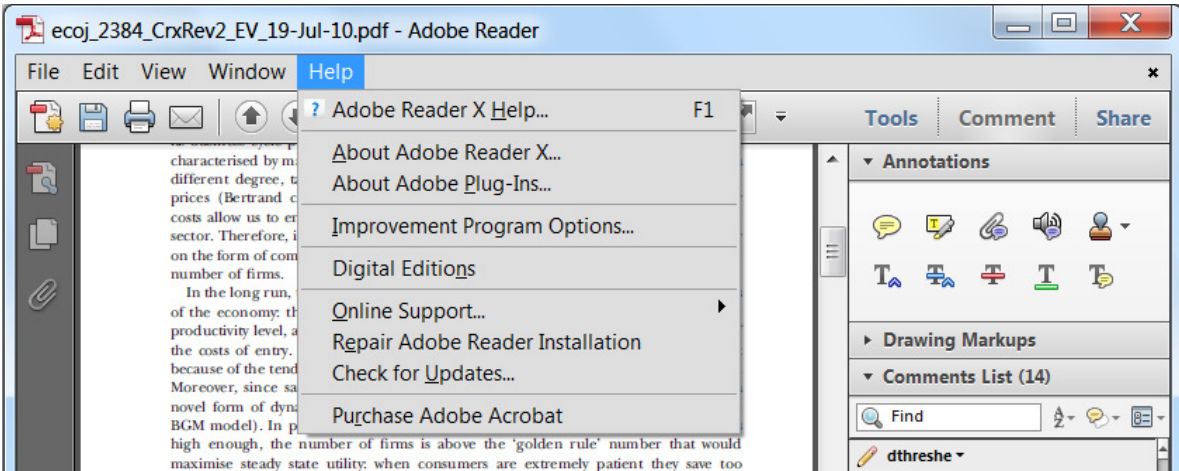
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