Platysmaplasty with GalaFLEX, a Resorbable Poly-4-Hydroxybutyrate Mesh

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Patient Overview

Patient was a 67 year old male who complained of generalized signs of facial aging in the face, eyebrow and eyelids but was otherwise in good health. He had a prior history of upper and lower cosmetic eyelid surgeries in the early 1990’s. A comprehensive facelift including a poly-4-hydroxybutyrate (P4HB) mesh, GalaFLEX® mesh (Galatea Corp.), for platysmaplasty was determined to be of use based upon his heavy facial attributes. In this patient’s case, the placement of a resorbable mesh was used as a “hammock” to support and hold the platysmal muscle in its new position. Also to be performed concurrently were revision upper and lower blepharoplasty involving skin, muscle and fat removal.

Background

As the face ages, the platysmal muscles undergo ptosis, separation, and weakening which results in a loss of support for the overlying tissue leading to platysmal “banding” that is bothersome to patients. The platysmaplasty (neck lift) is performed to lift the underlying muscles of the neck and tighten tissue to improve and sharpen the contour of the neck and jawline. Current platysmaplasty techniques that involve resuspension of the platysmal muscles via plication with suture have met with limited success due to patient discomfort and short term durability of cosmetic improvement. When permanent sutures are plicated to simulate an artificial ligament to tighten the neck and improve the contour of the jawline, patients sometimes feel the sutures pulling or tugging during normal activity. The benefit of using an absorbable mesh in this procedure is to support the platysmal muscles to more evenly distribute the load, improve patient comfort and promote a more durable aesthetic outcome.

Key Points

- Reduces the “wind tunnel” effect
- May help maintain neck tone when muscle relaxes
- Acts as sling to support the weakened platysmal muscles
- Improves the appearance of the jawline
- Flexible and conforms to the jawline
- Not palpable through the skin
**Procedure**

Prior to surgery, 1% lidocaine with 1:200,000 epinephrine was injected through the incision sites to the areas of operation. The patient’s neck was massaged to ensure distribution of the lidocaine and epinephrine. The skin layer was dissected from the platysma muscle from the chin incision point toward the trachea. Next, one continuous incision was made around the ear along the patient’s natural creases and hairline. The skin was then dissected away from the platysma muscle to the chin separating the skin from the muscle from one ear to the other. The platysma was then separated from the underlying nerves. This layer was bifurcated and pulled back rather than trimmed to redirect the muscle into 2 vectors rather than 1 plane. This allowed for a more natural appearance and reduced the “wind tunnel” effect.

3-0 MonoMax® suture (B. Braun Surgical), interrupted figure 8 stitch, was used to secure the muscle at the front of the patient’s ear and also behind the ear.

A 6” x 8” sheet of GalaFLEX was cut into three equal pieces of approximately 2” x 8”. A slight curve was cut into the mesh at one side to contour the mesh to the patient’s neck. GalaFLEX was soaked in bacitracin prior to use. One mesh was then tunneled through the patient’s face from the ear to the chin with the curved edge at the jaw line on each side. Each piece of GalaFLEX was sutured to the patient’s platysma muscle under the chin using 3-0 MonoMax; if entering from the left side the mesh was fixed to the right platysmal plane, if entering from the right side the mesh is fixed to the left platysmal plane. Fixing to the opposite platysmal plane from the side being lifted prevents the platysmal border from separating and allows for a long-lasting repair by preventing the reoccurrence of muscle sag.

Once fixed at the chin, each was pulled up toward the ear, cut into a “V” shape to distribute the force into 2 vectors as indicated in figure 2. The posterior edges of the GalaFLEX were kept at a minimum of 1.5 cm from the location of the skin incision to ensure no mesh would lie within the skin closure line as well as to maintain maximum wound edge oxygenation by the vertical ingrowth of neovascular structures into the distal aspects of the rhytidectomy flap. GalaFLEX was finally secured along its upper edge using 3-0 MonoMax, trimmed at the jaw line to ensure conformity to the face and to eliminate any potential for bunching or rolling along the long mesh edges.

4-0 Vicryl suture (Ethicon) was used to secure the subcutaneous layer via an inverted interrupted suture technique and 5-0 plain gut was used to close the skin layer in a running suture fashion after trimming excess skin.
**Patient Follow-Up**

The aesthetic appearance of the neck was evaluated by physician comparison of preoperative and postoperative photographs at 1 week, 1 month and 3 months as of this writing. Good maintenance of the jawline and submandibular contours are noted as of this writing.
Discussion

The maintenance of the jawline contour after rhytidectomy has long been challenging; the male neck being the most difficult to maintain improvement. Especially in the heavier featured male or female, the neck muscles have even more tendency to relax as long term healing takes place. A number of techniques attempt to address this such as the Giampapa suspension suture technique and various midline platysmaplasty techniques. The primary problem with the plastysma is that even though pulled taut at surgery, it is muscle and will over the immediate post-operative weeks and months relax and stretch against the strain from the plication fixation sutures. The muscle desires to come into a resting state that is not tense. As muscle relaxation occurs, especially in the heavier set individuals, an undesired laxity can develop along the jawline. The idea behind the plicated suture is sound but the rigid linear aspect of a single suture line can create an undesired choking or strangulation sensation. A resorbable mesh sling seemed to be an alternative idea. In use, GalaFLEX contoured to the inferior margin of the mandible thus gently supporting the underlying plastysma muscle. As the muscle relaxes during the recovery period the sling continues to support the muscle and neck structure to maintain the contour improvement. Moreover GalaFLEX is fully absorbed over 12-18 months. My placement of GalaFLEX over the areas anterior and posterior to the auricle coincides with it overlapping the site of the figure of 8 plication sutures for the Multi-Vector Rhytidectomy. This overlapping adds strength to these areas and distributes the suspensory forces that may help to prevent the “cheese wiring” effect associated with suture.

In conclusion, GalaFLEX is a new to market resorbable mesh with distinctive properties. Additional surgical patients along with long-term observations of the post-operative period will be highly informative.

Rx Only. Before using GalaFLEX mesh read the instructions for use which accompany the product for indications and a more comprehensive list of contraindications, warnings and precautions.