**AIM:** This study aims to document and evaluate the long-term durability of musculoaponeurotic reconstruction in abdominoplasty using myofascial repair with sub-lay mesh application technique.

**PATIENTS & METHODS:** Twenty-one female patients underwent abdominoplasty to treat severe abdominal laxity were included in the study over a five-year period from July 2010 to June 2015. They were followed up to a minimum of 18 months. They were assessed for both functional and aesthetic outcomes.

**RESULTS:** The changes in intraoperative airway pressure (Paw) values, before and after myofascial repair, indicated moderate statistical significant changes ($r = 4.707$ and $p$-value = 0.0213). The reduction in waist circumference averaged 9.5 cm, ranging from 4 to 17.5 cm. The changes in the waist/hip ratios from preoperative to postoperative were statistically significant ($r = 0.6859$ and $p$-value = 0.0003). The subjective assessment of the aesthetic outcome rated as 8.13/10 by an independent panel of 4 plastic surgeons and a nurse while that of the patients was 8.05/10. Patient satisfaction had been extremely high, and the complication rate was low. All patients gained improvements in their posture and no secondary hernias were seen.

**CONCLUSION:** The myofascial repair modification of the rectus sheath described in this study provides durable functional and aesthetic outcomes in abdominoplasty even in severe degrees of abdominal laxity. The myofascial repair restores the integrity of the anterior abdominal wall, especially in presence of concomitant ventral hernias, and relieves back pain through redistributing the forces between back and anterior abdominal wall musculature. Those functional outcomes go hand in hand with superior aesthetic refinements to the trunk region; it enhances the hip/waist ratio, giving more feminine trunk configuration and pronounces the breast aesthetics.

---

**The “Boomerang Lift”: A 3-Step Compartment Based Approach to the Youthful Cheek**

*Jordan Terner, MD; Jillian Schreiber, MD; Carrie Stern, MD; Danielle Jackson, MD; Evan Garfein, MD; Elizabeth Jelks, MD; Glenn Jelks, MD; Oren Tepper, MD*

**DISCLOSURE/FINANCIAL SUPPORT:** None of the authors has a financial interest in any of the products, devices, or drugs mentioned in this manuscript.

**BACKGROUND:** Autologous fat grafting (AFG) is an important tool for plastic surgeons when approaching the aging face. Malar augmentation restores the youthful facial contour and provides support to the lower lid. The existence of distinct facial fat compartments suggests a stepwise approach to facial augmentation is needed. Our group recently described the unique surface response for targeted volumization of discrete fat compartments, termed “Augmentation Zone” (AZ), for the deep malar compartments using three-dimensional (3D) surface imaging in a cadaveric model. The Boomerang Lift is the three-step approach to malar augmentation using the ideal combination of deep malar fat compartments in clinical patients.

**METHODS:** Clinical patients undergoing AFG for malar augmentation where injected in the Boomerang Lift technique and photographed intra-operatively using 3D surface imaging (Canfield® VECTRA H1) (n=13). Sequential injections were performed in the following order: to the lateral sub-orbicularis oculi fat (lateral SOOF), medial SOOF, and lastly to the deep medial cheek. Intra-operative 3D images were taken at baseline and following compartmental injections. Overlay between the augmented and baseline surfaces were performed using 3D analytic software, and the AZ was defined for individual and combined fat compartments.

**RESULTS:** 3D analysis of the Boomerang Lift technique resulted in a unique AZ consistent across patients. The AZ resembled a boomerang, with the short tail supporting the medial lower lid, and the long tail extending laterally along the zygomatic arch. The upper border was restricted by the level of the tear trough/lid-cheek junction, and the lower border was defined medially by the nasolabial fold and laterally by the level of the zygomatico-cutaneous ligament. Injections to the lateral and medial SOOF defined the boundaries of the boomerang shape, while the injection to the deep medial cheek provided maximum projection.

**CONCLUSIONS:** This is the first clinical application of the deep malar augmentation zones described in a cadaveric model. The Boomerang Lift resulted in a reproducible surface shape that respected the previously defined boundaries in a cadaveric model. 3D surface imaging was an ideal method for analyzing the surface change in response to targeted facial fat grafting. As we continue to understand the 3D architecture of the facial fat compartments, we will be able to describe a surgical algorithm for injection.

1. Rohrich RJ, Pessa JE: The Fat Compartments of the Face: Anatomy and Clinical Implications for Cosmetic
A Prospective, Within-Subject Controlled Study of the Safety of Allograft Adipose Tissue Injections into the Hypodermis of Healthy Adults

Athleo L. Cambre, MD; John H. Joseph, MD

DISCLOSURE/FINANCIAL SUPPORT: Neither author has a financial interest in the product mentioned in this manuscript.

INTRODUCTION: Autologous fat transfer (AFT) has been used for years as a permanent filling option for soft tissue defects. There are several challenges related to AFT such as overfilling, unpredictable resorption, and donor site morbidity. An allograft adipose-derived filler with native growth factors bound to the extracellular matrix to encourage angiogenesis and adipogenesis can be used as an alternative to AFT. In this study we evaluated the safety of allograft adipose tissue injections into the hypodermis of healthy adults who are scheduled for elective body reduction surgery.

MATERIALS AND METHODS: An ongoing prospective, within-subject controlled study of the safety of allograft adipose tissue injections into the hypodermis was conducted. All subjects planned to undergo elective body reduction surgery to areas such as the arms, legs, or abdomen in ≥30 to ≤180 days and received allograft adipose tissue injections into an area of hypodermis intended for surgical excision. Similar tissue from the subject’s contralateral side served as the control. The subjects rated pain on an 11-point scale and completed a 14-day safety diary beginning on the evening of treatment to report any injection site responses. When the planned elective body reduction surgery was performed, the area treated with allograft adipose tissue injections was surgically excised and a biopsy of the treated area was sent for histopathology examination. Similar tissue on the contralateral control side which was not injected was

CONCLUSION: We demonstrate that total supra-platysmal fat volume significantly decreases with age. In addition, the elderly have significantly more fat volume in upper and middle thirds of the supra-platysmal neck, whereas young females have more evenly distributed fat volume between the three regions of the neck. This seems to be consistent with the observation of the elderly experiencing fat volume loss and subsequent “deflation” of the skin, causing skin laxity and vertical bands of the neck.

Characterizing Fat in the Superficial and Intermediate Layers of the Neck: Analyzing Variations with Age using Volumetric Computed Tomography

Susan Orra, MD; Kashyap Tadisina, MD; Adeeeb Derakhshan, BS; Sandra Halliburton, PhD; Gaby Doumit, MD, MSc; James Zins, MD

DISCLOSURE/FINANCIAL SUPPORT: Authors have no disclosures.

INTRODUCTION: Fat compartment distribution plays an important role in the aging process of the neck, yet the specifics of this process are largely unknown. This study utilizes volumetric computed tomography in live patients to characterize the fat compartments of the neck and examine how they change with respect to age.

MATERIALS AND METHODS: Neck CT angiography was obtained for 20 “young” (age 20–35 years old) and 20 “elderly” (age 65 – 89 years old) females. The volume of neck fat in the supra and subplatysmal planes were quantified. Distribution of fat volume was assessed by dividing each supra and sub platysmal compartments into upper, middle, and lower thirds.

RESULTS: Total supraplatysmal fat volume was significantly greater than subplatysmal volume within both the “young” and “elderly”; however, “young” had significantly more total supraplatysmal fat than “elderly” (p<0.0001). There was no significant difference in fat volume between each third of the neck in the supraplatysmal compartment in “young”. The middle third of the supra-platysmal fat volume in the “elderly” (28.58±20.01 cm³) was significantly greater than the upper (18.93±10.35 cm³) and lower thirds (15.46±11.55 cm³) respectively (p<0.01). There was no significant difference between the total sub-platysmal fat volume between the young and the elderly groups (p>0.05).

When the planned elective body reduction surgery was performed, the area treated with allograft adipose tissue injections was surgically excised and a biopsy of the treated area was sent for histopathology examination. Similar tissue on the contralateral control side which was not injected was