Anchor points in the Colles’ fascia elongated 17.4% further prior to failure than those in the periosteum. There was noticeable variability between anchor points and across samples. The histologic sections suggest that Colles’ fascia from the different regions of the ischiopubic ramus vary considerably both in continuity and collagen fiber content. The periosteal and muscular fascial layers were more continuous histologically with direct attachments into the pubis and ischium.

**CONCLUSION:** Anchoring of the SFS to the periosteum did not improve the complication profile when compared to the literature. Both the biomechanical and histologic analyses demonstrate that the Colles’ fascia is highly variable in composition with coincident variability in tissue strength, which may account for the high complication profile of this procedure. Our results require further study to identify the optimal surgical technique for medial thighplasty.

### Impact of Technique and Patient Subtype on Abdominoplasty Outcomes: A 12-year Massachusetts General Hospital Experience

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**PURPOSE:** The traditional abdominoplasty continues to be one of the most common surgical procedures performed in the United States. However, variations in technique and patient population have introduced complexity into our understanding of abdominoplasty outcomes, warranting additional investigation. This study evaluates the impact of different surgical techniques and clinical patient factors on outcomes following abdominoplasty at a single institution.

**METHODS:** Retrospective review of consecutive patients undergoing abdominoplasty from 1/2003–12/2014 at the Massachusetts General Hospital was performed. Complication rates among different patient subtypes were analyzed with an average 41-month follow-up. Statistics were performed using chi-square, Fisher’s exact test, and logistic regression.

**RESULTS:** Data analysis revealed 779 patients with a mean age of 43.7 years and BMI of 27 that underwent abdominoplasty. The majority were female (92.9%) and MWL was present in 34.8%. Abdominoplasty techniques utilized included traditional (59.4%), belt lipectomy (17.9%), fleur-de-lis (16.4%), umbilical float (9.2%), and mini-abdominoplasty (2.8%). Half of the study population (n=384, 49.3%) had concurrent surgical procedures. Total complications (23.0%) primarily consisted of wound and scar-related complications (15.3%). Infection (2.4%) and seroma (2.3%) rates were low. About 60% of patients received heparin chemoprophylaxis with overall thromboembolic and hematoma rates <1%. Univariate analysis revealed that MWL (p=0.04), particularly from weight loss surgery (p=0.02), fleur-de-lis (p=0.03) or belt lipectomy (p=0.05) technique, and concurrent medial thigh lift (p<0.001) all significantly increased complications. Previous scars, amount of weight loss, operative time, liposuction, and other concurrent procedures did not affect total complications. Male gender (OR 1.96, p=0.04), fleur-de-lis technique (OR 1.71, p=0.04), and medial thigh lift (OR 3.3, p<0.001) were independent risk factors for total postoperative complications on logistic regression.

**CONCLUSIONS:** The impact of different abdominoplasty techniques on outcomes, in the setting of a diverse patient population, has not been rigorously studied. Our unique study demonstrates that abdominoplasty can be performed safely, with an acceptable complication profile. However, an increased risk of complications may be seen with male patients, a fleur-de-lis technique, and in combination with medial thigh lift. Understanding the impact of these clinical and surgical variables will help plastic surgeons individualize their operative and post-operative plans for each patient, while minimizing risk.

### Myofascial Repair with Sub-lay Mesh in Abdominoplasty Provide Durable Aesthetic & Functional Outcomes

**Mostafa Hemeda, MD; Amir Elbarbary, MD; Khaled Elgazzar, MD; Mohamed Elrouby, MD**

**INTRODUCTION:** Musculapneurotic rehabilitation is an integral step for gaining superior aesthetic outcome in full abdominoplasty to correct severe abdominal laxity. The myofascial repair is gaining popularity because of the durable rehabilitative outcome. The retromuscular sub-lay mesh placement has proven to provide the most durable repair in treating groin hernias.
**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 ($r = 4707$ 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**

**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 step-wise 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