CONCLUSION: Pre-treatment with AMF resulted in a significant improvement in type I collagen fibril organization in a murine model of expander-based breast reconstruction. Type I collagen organization directly impacts the architectural integrity of skin as well as providing the substrate environment for cell proliferation for proper wound healing. Retaining this type I collagen sheet structure is paramount to facilitating improved reconstructive outcomes. If these findings translate into clinical practice then utilizing AMF has the potential to reduce radiation associated type I collagen dermal change. More broadly, this therapeutic has potential to increase candidacy for breast reconstruction, improve surgical outcomes, and enhance quality of life for breast cancer patients undergoing reconstruction.

Umbilical Ablation During Abdominal Flap Harvest Decreases Donor Site Complications

Presenter: Mark Fisher, MD

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PURPOSE: Donor site complications are a significant source of morbidity for patients undergoing deep inferior epigastric artery perforator (DIEP) flap reconstruction. Most studies have focused on post-operative hernias and bulges; however, there is a paucity of data regarding minimizing post-operative wound healing and infection rates. We hypothesize that ablation of the umbilicus at the time of DIEP harvest decreases the incidence of umbilical and abdominal wall complications by avoiding additional skin flap undermining and incisions.

METHODS: A retrospective review was performed of all (119) patients who underwent DIEP harvest with concomitant umbilical ablation and subsequent umbilicoplasty from 2010–15. Umbilicoplasty was performed at the time of revision or nipple reconstruction by using a local flap and full-thickness skin graft to create an aesthetically pleasing neo-umbilicus. This cohort was paired with 119 patients who underwent DIEP harvest without umbilical ablation. Pre-operative risk factors, intra-operative factors, and post-operative complications were compared.

RESULTS: The umbilical ablation group had significantly higher BMI (30.9 vs 27.4, p=<.001), presence of umbilical scar (20.9% vs 5.3%, p=<.001), umbilical hernia (82.9% vs 8.5% p=<.001), ventral hernia (23.9% vs 1.7%, p=<.001), and rectus diastasis (10.3% vs 2.6%, p=0.016). There were no significant differences in incidence of smoking, diabetes mellitus, hypertension, prior abdominal scar, or midline abdominal scar. The umbilical ablation group had a significantly lower rate of post-operative abdominal wound dehiscence and skin loss (11.1% vs 22.2%, p=0.023) and overall donor site complication rate (24.8% vs 39.3%, p=0.017). There was no significant difference in incidence of partial-thickness skin loss, cellulitis, seroma, or abscess. Mean follow-up time was 1.8 years.

CONCLUSION: These data reveal that umbilical ablation significantly decreases the incidence of complications, including abdominal dehiscence and skin loss, even in the setting of increased risk factors for poor wound healing. This decreased incidence of abdominal complications is likely due to avoidance of umbilical incisions and decreased abdominal skin flap undermining, both resulting in less interruption of skin blood supply. We conclude that umbilical ablation is a viable option to minimize donor site complications and may be especially useful in high-risk patients.

AESTHETIC SESSION 2

Brazilian Butt Lift Performed by Brazilian Plastic Surgeons: Reports of an Expert Opinion Survey

Presenter: Alexandra Conde-Green, MD

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INTRODUCTION: Gluteal fat augmentation is one of the hot topics in plastic surgery nowadays as the demand has steadily increased in the last 3 years. However with the increase in popularity, a recent survey showed an increase in major complications due to this procedure. Expert opinion surveys constitute a well-established tool for obtaining information involving medical conduct, providing insight into individual’s perspectives and experiences. Brazil is the country with the highest number of gluteal augmentation performed in the world according to international statistics.

METHODS: We performed an online anonymous survey composed of two questionnaires with the objectives of identifying technical preferences of Brazilian butt lift and enumerating complications of this procedure with board certified Plastic Surgeons, members of the Brazilian Society of Plastic Surgery. Statistical analysis was performed using chi-square test for categorical variables and ANOVA for the continuous variables.

RESULTS: A total of 853 of the 5655 Board-Certified Brazilian plastic surgeons answered the survey (response rate 15.08%). The confidence level was 99% with 4% margin of error. Fat grafting was considered the best technique for gluteal augmentation in comparison to implants by 79.89% of plastic surgeons. The fat harvesting technique mostly used was vacuum assisted liposuction (60.75%), attached to a 4mm diameter cannula (60%). Fat was processed by decantation by 85.66% plastic surgeons, using a 3 or 4mm diameter cannula (43.48%, 40.52%). The intergluteal cleft incision was used by 63.32% plastic surgeons and fat was injected in the subcutaneous plane only by 55.7%. The most frequent volume of fat injected per buttock was between 200 and 399 ml (75.62%). Seventy one percent members didn’t have any restriction regarding positioning in the post-operative period. The percentages of plastic surgeons that reported complications following the procedure were: 36.5% for contour irregularities, 23.63% for fat necrosis, 17.75% for seroma, 13.5% for infection, 11.25% for oil cysts, 9.38% for hematoma, 5.13% for paresthesia, 2.25% for fat embolism, 2.13% for pulmonary embolism, 1.88% for deep venous thrombosis and 1.5% death. Seventy-six percent plastic surgeons kept their patients in observation for 23 hours. Most plastic surgeons had experience with this procedure as 76% learned it during their residency training. The mortality rate estimated was 1: 20.117 cases or 4.97: 100.000 cases (0.0049%). Non-fatal fat embolism rate was 1: 9530 cases or 10.5: 100.000 cases (0.01%).

CONCLUSION: With all the studies being carried out on this topic, guidelines are being established in order to prevent complications and increase safety with this procedure. Following this survey, recommendations are the following: Inject a maximum of 500ml per buttock subcutaneously only, via superior gluteal incisions, using 3 to 4mm diameter cannulas for fat harvesting and injection, keep the patients in observation for 23 hours. It is also recommended that plastic surgeons acquire experience before performing this procedure.

Radiologic Validation of the Danger Zone Concept to Microscopic (MIFE) Fat Embolism Associated with Gluteal Lipoinjection

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PURPOSE: There has been a great effort from Plastic Surgery Societies recently to provide recommendations to decrease the risks of fat embolism associated with gluteal lipoinjection. One of the most common published recommendation is a gluteal area that is more dangerous to inject intramuscularly. Those recommendations are derived from necropsies published in 2015 showing the following triad: tear in gluteal vein wall, intravascular fat, and macroscopic fat embolism (MAFE) in lung tissue. More recently, there have been fatal and nonfatal fat embolism cases which did not show the above triad but diagnosed free oil in lung microvasculature, which has been called microscopic fat embolism (MIFE). Free oil from the liposysitrate can access intravascular space even in intact vessels due to its lipophilic walls. Indirect venography is the gold standard to radiologically show the presence of veins, its caliber, and trajectory. In this paper, we sought to look after a danger zone within the gluteal region by means of indirect venography with the highest concentration of veins that should be avoided during gluteal fat grafting to prevent either MAFE or MIFE occurrence.