techniques for prevention of these common complications after phalloplasty and complex flap surgery in general.

RESULTS: We use collagen matrix sheets (Integra Wound Matrix Thin) to improve aesthetic and functional outcomes at the flap donor site. Our high-volume phalloplasty group has achieved industry-low urethral complication rates of 22% by technical optimization of the urethroplasty portion of phalloplasty. Further evaluation of dehydrated human amnion/chorion membrane allograft (Amniofix) to decrease urethral fistula/stricture is planned. We use thrombin-gelatin hemostatic matrix (Floseal) to eliminate the need for scrotal drains and limit scrotal hematomas. We continue to investigate the role of extracellular matrix nerve connection sheaths (Axoguard) to improve the efficiency of nerve regeneration to the flap. We use transcutaneous visual light spectroscopy (Tstat) monitoring for intraoperative decision-making and postoperative flap surveillance. In some cases where we have detected flap vascular compromise, we have created intentional AV fistulas to bypass the microvascular obstruction threatening flap survival. We have developed techniques to avoid creating a disproportionately thick neophallus when using an anterolateral thigh flap, including a delayed flap procedure on donor sites prior to phalloplasty and/or a staged defatting technique in subsequent procedure(s) to decrease neophallus girth.

CONCLUSIONS: One stage phalloplasty is a massive endeavor (~200 RVUs) requiring several experienced surgeons working over 6–12 hours. Through a combination of surgical technique improvement and incorporation of promising new technology, we have attempted to optimize the results of this massive free-flap surgery. Ultimately, with continued innovation and sharing of improved surgical techniques, it may be possible to better standardize care and improve outcomes of this complicated and increasingly common surgery.

Reducing Complication Rates of Fat Grafting in Gluteal Augmentation

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INTRODUCTION: Gluteal augmentation via autologous fat grafting is an increasingly popular procedure used in body contouring. However, concerns remain about the patient safety of the procedure due to reported high complication rates in numerous countries around the world.

METHODS: The author reports on a retrospective analysis of a 181 patient database who all had intramuscular and deep subcutaneous gluteal augmentation via autologous fat grafting following liposuction. Average age, body mass index, tumescent fluid volumes, aspirate, fat volumes grafted, and operating room times are analyzed along with complication rates in the 181 patient cohort. Triple antibiotic solution was added to the grafted fat after four of the first 31 patients developed an infection. Patient positioning after fat grafting in the prone position was changed to the right lateral decubitus position for extubation after three of the first 51 patients developed clinically significant fat embolism in supine position. Statistical analysis using Fisher exact test is performed to determine if these changes in protocol result in better patient safety.

RESULTS: Data from 181 patients reveal an average age of 38.6 years, average BMI of 28.4, average tumescent fluid injected 4078 cm$^3$, average aspirate 4962 cm$^3$, average right buttock injected 790 cm$^3$, and average left buttock injection is 790 cm$^3$. Mean operative time was 4 hours and 8 minutes. Fisher exact test was used to analyze two changes in buttock augmentation protocol consisting of adding a triple antibiotic solution to the harvested fat and extubating the patient in a lateral decubitus position on the recovery room bed. Four of the first 31 patients developed an infection but after adding triple antibiotic solution of gentamycin, ancef, and bacitracin to the aspirate, no infections were seen in the next 150 patients. The $P$ value is 0.0008 for infection, which is statistically significant. Three of the first 51 patients experienced a clinically significant fat embolism, which required supplemental postoperative oxygen and hospital admission. The extubation protocol after general anesthesia was changed to position the patient in the right lateral decubitus position on the recovery room bed for extubation and no patient out of the next 130 experienced a fat embolism despite intramuscular injections. The $P$ value is 0.0229 for this change in protocol. Other complications include abdominal seromas requiring serial aspirations, cubital tunnel syndrome from lying prone for 2–3 weeks postoperatively, and one patient with a pulmonary embolism and death.

CONCLUSIONS: Fat embolization in gluteal augmentation can be greatly reduced by positioning the patient in the lateral decubitus position for extubation after injecting the fat in a prone position. Infection rates can be reduced by mixing a triple antibiotic solution with the aspirate prior to grafting. Since the popularity of gluteal augmentation is
increasing, we must develop protocols in performing the procedure that maximize patient safety and minimize risks of complications. The buttock augmentation patient is at a higher risk of DVT/PE because they do not ambulate normally; so prophylactic lovenox may be of benefit. Further studies are required.

**Accurate Plane Fat Grafting in Gluteal Augmentation: An Anatomic Study**

**Presenter:** S. Kelishadi, MD, FACS

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**BACKGROUND:** The safety of gluteal fat grafting is a global concern in plastic surgery.

**OBJECTIVE:** The aim of the study was to test whether fat grafting to the buttocks with Auto Stop Reach technology prevents penetration from the subcutaneous space into the fascia and muscle layers of the buttocks.

**METHODS:** Fat transfer simulation was performed with blue-dye-stained apple sauce (BDSAS) on eight fresh tissue cadaver buttocks by three board certified plastic surgeons (SSK, SC, BW). An open control was used to visualize the process in the different anatomic layers while all of the other procedures were performed blindly akin to live surgery. After BDSAS transfer reached the maximum capacity (ranging from 400 to 800 cm³ per buttock), dissection of the anatomical layers of the buttocks was performed to determine the plane(s) of injection.

**RESULTS:** Blue-dye-stained apple sauce simulation of fat transfer injection to the buttocks did not penetrate the gluteal fascia or muscle layers from the subcutaneous space while using Auto Stop Reach.

**CONCLUSIONS:** Auto Stop Reach Technology supports safety of gluteal fat transfer in the subcutaneous space by board-certified plastic surgeons.

**A Comparison of Board-certified Plastic Surgeons to Other Aesthetic Providers: Assessing Disparities in Public Perception**

**Presenter:** Allison Gelfond, MS

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**BACKGROUND:** Many licensed physicians, dentists, nurse practitioners, and physician assistants market themselves as “board-certified” or “fellows” of professional societies that include the terms Plastic Surgery or Cosmetic Surgery, lending the impression to the public that membership confers competency. Aesthetic surgery occurs largely in the outpatient setting; so, practitioners are “self-credentialed” and the public is left to believe website or marketing information. This survey aimed to assess the public’s understanding of the differences between plastic surgeons and other medical professionals who perform cosmetic surgical and nonsurgical procedures for the purpose of identifying public perception of the aesthetic surgery market. Our goal is to gauge public understanding of the differences between plastic surgeons and other medical providers in the aesthetic surgery space who represent themselves as competent practitioners of procedures that are integral to ACGME Plastic Surgery residency core competencies.

**METHODS:** A 22-question survey was created under the guidance of a survey methodologist on Qualtrics. The survey was released through Amazon Mechanical Turk to reach a representative sample of the adult US population. Factors that influence patient decision-making for cosmetic procedures and/or aesthetic surgery were assessed along with the knowledge of physicians and providers according to specialty, training, and board-certification status.

**RESULTS:** Two-thousand two-hundred and thirty-eight individuals completed the survey. Although respondents indicated that plastic surgeons are the most qualified to perform surgical procedures (66% followed by cosmetic surgeons 21% and dermatologists 3%), they indicated that cosmetic surgeons (33%) and dermatologists (23%) were more qualified than plastic surgeons (19%) to perform