Age at surgery ranged between 26 and 60 years. Follow-up ranged between 21 and 85 months. A Likert scale and an evaluation questionnaire were used to assess the aesthetic outcome of both techniques.

RESULTS: Postoperatively, the scar was completely invisible when viewed from patient’s front and patient’s lateral but was partially visible when viewed from patient’s back. In total, 88.8% of patients tolerated the scar with high satisfaction. Three patients developed postoperative distal edema due to skin tightness, and one patient experienced dysesthesia due to injury of the medial brachial cutaneous branches. Mean time of surgery was 90–100 minutes for both arms.

In patients who underwent the double ellipse technique, scar was also sited posteriorly, distal edema was reported in 2 patients, and 7 patients developed hypertrophic scars. More than 90% of patients tolerated the scar with high satisfaction. Mean time of surgery was 60–75 minutes for both arms.

Conclusions:
The posterior scar maneuver with fascial suspension creates a low-lying, posterior, well-hidden scar when viewed from the patient’s front or patient’s lateral side. The technique controls the location of the scar on the desired location. The double ellipse technique does not control the location of the scar on the desired location, but could be sited posteriorly. The dissection is more superficial, avoiding the injury to lymphatics and cutaneous nerves, the time of surgery is shorter, and the surgery does not need more expertise.

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Established and Experimental Techniques to Improve Phalloplasty Outcomes: How to Optimize a Hypercomplex Surgery

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INTRODUCTION AND OBJECTIVE: An increasing number of patients are seeking gender affirming surgeries. Phalloplasty is the most complex of these surgeries, in that it combines many different smaller procedures into one or more stage(s). Each of these components have different risk profiles, and phalloplasty as a whole has a wide variety of possible complications. Targets for improvement in outcomes include donor site morbidity, urethral complications, scrotal hemostasis, nerve regeneration, as well as flap optimization, monitoring, and salvage. Without an established “gold standard,” we seek to describe established and experimental solutions to the most common and vexing problems.

METHODS: We identified promising experimental techniques explored at our center to manage flap donor site morbidity, further minimizing urethral complications, controlling postoperative bleeding, enhancing nerve regeneration, improving postoperative flap monitoring, salvaging flaps with identified vascular compromise, and optimizing outcomes using too-thick anterolateral thigh flaps. We additionally reviewed the literature regarding established
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 hematoma. 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 cm³, average aspirate 4962 cm³, average right buttock injected 790 cm³, and average left buttock injection is 790 cm³. 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