flap reconstruction remains inconsistent among practitioners. Previous animal studies have demonstrated favorable effects of antithrombotics by inhibiting anastomotic venous thrombosis and improving microcirculatory perfusion. However, these results have yet to translate into definitive clinical benefits in human studies, with the majority resulting in increased hematoma development. We aim to revisit this topic with the use of a large database and examine in-hospital complications, most notably flap failure and hematoma, in patients on various long-term blood thinners.

**METHODS:** Patients who underwent non-breast pedicled or free-flap reconstruction from 2013 to 2014 were identified from the Healthcare Utilization Cost Project National Inpatient Sample (NIS) Database. De-identified data on patient demographics, perioperative risk factors and incidence of complications were obtained. Outcomes of interest included flap failure and hematoma formation. Logistic regression was used to assess the adjusted effect of long-term antithrombotic/anticoagulant or aspirin use on flap failure and hematoma formation.

**RESULTS:** The study population included 79,915 patients. Of these patients, 3,775 (4.7%) took an anticoagulant/antithrombotic and 4,575 (5.7%) took aspirin preoperatively. Patients on either one of the blood thinners were more likely to be smokers (p<0.001), have more comorbidities (p<0.001), have peripheral vascular disorders (p<0.001), be hypertensive (p<0.001), male (p<0.001) and be obese (p<0.001). Overall rates of flap failure and hematoma formation were 2.5 percent and 2.6 percent, respectively. Unadjusted flap failure rates were 2.4 percent and 2.7 percent for anticoagulant/antithrombotics and aspirin, respectively. Unadjusted hematoma rates were 7.0 percent and 3.7 percent for anticoagulants/anticoagulants and aspirin respectively. On multivariate regression there was a significant increase in odds of hematoma formation associated with anticoagulation/antithrombotic use (OR=2.413, p<0.001); however, no difference in hematoma formation for those on aspirin therapy (OR=1.070, p=0.427). There was a non-significant reduction in flap failure rates for patients on anticoagulants/antithrombotics (OR=0.802, p=0.062) and no significant difference in aspirin use on flap failure rates (OR=1.146, p=0.159).

**CONCLUSION:** Our results show there was no significant difference in anticoagulants/antithrombotic or aspirin use in terms of flap failure with an increase in hematoma rates for the former. Additional prospective studies should clarify whether the variety of blood thinners can improve outcomes while still minimizing complication rates in flap reconstruction.

**A Retrospective Review of Venous Thromboembolism in Lower Extremity Salvage: Incidence, Risk Factors and Outcomes**

**Presenter:** Ido Badash, BA

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**INTRODUCTION:** Venous thromboembolism (VTE), including deep vein thrombosis (DVT) and pulmonary embolism (PE), is a significant cause of morbidity and mortality following surgery. However, the effects of VTE on soft tissue reconstruction of traumatic lower extremity injuries are not well reported. The purpose of this study was to investigate the incidence, risk factors and outcomes of VTE in lower extremity salvage.

**METHODS:** A retrospective review of lower extremity trauma patients requiring soft tissue reconstruction was performed at the LAC-USC medical center between July 2007 and December 2015. Patients who developed clinically apparent VTE during inpatient stay were identified from ultrasonography reports and provider notes. Comorbidities, injury characteristics and perioperative data were compared between patients with and without VTE. Outcomes compared included flap complications, flap loss, and amputation. The mean follow-up time was 13 (range: 0–70) months.

**RESULTS:** 190 patients with lower extremity injuries underwent local and free flap procedures, with 12 patients developing VTE during hospitalization (6.3%). Nine VTEs (4.7%) were diagnosed prior to soft tissue reconstruction and 3 VTEs were diagnosed post-reconstruction (1.6%).
Patients with VTE were more likely to be ≥ 50 years of age (OR: 3.6, CI: 1.1–11.8, p=0.05), hypertensive (OR: 4.2, CI: 1.2–14.2, p=0.03), and diabetic (OR: 4.0, CI: 1.1–14.3, p=0.05). The limb salvage rate in patients with VTE was 100%. There were no flap losses in patients with VTE and the overall flap complication rate was similar between groups (p = 0.26). However, 1 patient died as a result of PE and another patient experienced an ischemic stroke from a paradoxical embolism.

CONCLUSION: This study gives preliminary evidence that VTE may not increase the risk of amputation or flap loss in lower extremity reconstruction, although anticoagulation prophylaxis and treatment are critical due to significant morbidity and mortality associated with VTE.

Evaluation of Stem Cell Populations and Cost Effectiveness of Fat Grafting Using Different Minimally Manipulated Techniques

**Presenter: Sagar Tushar Mehta, MD**

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**RATIONALE:** Autologous fat grafting is a highly used minimally manipulated technique in plastic and reconstructive surgery. Several fat-processing techniques have been described such as centrifugation, Telfa-rolling, blue-towel, sieve and decanting method. Although studies have compared processing methods, no studies have evaluated the processing time, cost and stem cell potency of the different methods.

**OBJECTIVE:** Here we describe a study where we compare the volume of fat obtained, processing time, cost, degree of cell viability and adipose derived stem cell (ADSC) potency of adipose tissue processed using several minimally manipulated fat-processing techniques adipose tissue.

**METHODS:** Human adipose tissue was harvested via tumescent liposuction technique and processed using centrifugation, Telfa-rolling, blue-towel, sieve and decanting methods. Processed tissue was placed into culture using ADSC cell culture methods to allow cells to grow. Cells were tested for doubling times, cell surface marker analysis and differentiation potential. In addition, we assess volume and mass of fat obtained through each individual technique.

**CONCLUSION:** All methods resulted in the isolation of adipose derived stem cells capable of undergoing adipo-, osteo- and chondrogenesis. Telfa-rolling and centrifuge methods resulted in the highest number of cells immediately after processing, and reached a cell density of 20 x10⁶ within 6 days of tissue processing. In addition, it was found that volume of processed fat obtained through telfa technique was approximately 33–50%, with only centrifuge and decanting resulting in greater volumes. Telfa-rolling is the most cost effective minimally manipulated method of processing adipose tissue that results in the highest ADSC isolation. This study supports larger clinical studies to evaluate the clinical benefits of using the Telfa-rolling method as the preferred minimally manipulated technique used in fat grafting.

New Treatment of Erectile Dysfunction Post-Radical Prostatectomy Using Nerve Grafts and End-to-Side Neurorrhaphies

**Presenter: Fausto Viterbo, PhD**

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**INTRODUCTION:** Radical prostatectomy (RP) for prostate cancer treatment, although effective, can lead to severe erectile dysfunction. This study describes a new technique, which aims to reestablish the nerve stimulus in penile erection via two sural nerve graft bridges, bilaterally.

**OBJECTIVE:** To study a novel penile reinnervation technique between the femoral and cavernous corpus and dorsal penile nerves via sural nerve grafts and end-to-side neurorrhaphies.