CONCLUSION: This study demonstrated the effectiveness of ICG lymphography in diagnosing primary lymphedema. We incidentally discovered a previously unrecognized pathologic entity – primary asymptomatic lymphatic insufficiency – which potentially explains the inconsistent pathogenesis of lymphedema following oncologic interventions, as these patients may be more likely to develop lymphedema compared to their healthy counterparts due to pre-existing disease. This pathologic entity also raises caution over performing lymphatic tissue transfer in patients with primary disease, as transfer surgery may be the last straw necessary to cause lymphedema in the donor region. Further investigation is warranted.

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Comparison of Outcomes between Side-to-End and End-to-End Lymphovenous Anastomoses for Early-Grade Extremity Lymphedema

**Presenter:** Ming-Huei Cheng, MD, MBA, FACS

**Co-Authors:** Fahad K. Al-Jindan, MD; Chia-Yu Lin, MSc

**Affiliation:** Chang-Gung Memorial Hospital, Taoyuan

**BACKGROUND:** Lymphovenous anastomosis (LVA) is technically challenging and could be successfully performed with advanced operating microscope, super-microsurgical instruments, and indocyanine green (ICG) lymphography. This study was to compare the outcomes between side-to-end and end-to-end LVA configurations for unilateral extremity lymphedema.

**METHODS:** Between April 2013 and June 2017, 58 patients who preoperatively had patent lymphatic ducts by ICG lymphography were indicated for LVA, including 20 upper limb lymphedema and 38 lower limb lymphedema. Either an end-to-end or a side-to-end LVA was used to anastomose the subdermal venule to lymphatic duct. The circumferential difference and episodes of cellulitis were used as outcome measurements.

**RESULTS:** Twenty-three patients underwent an end-to-end LVA, and 35 patients had a side-to-end LVA. All cases had an immediate patency evaluated by ICG lymphography and patent blue assessments. All patients returned to their daily routine without the use of any compression garments. At a mean follow-up of 16.5±11.5 months, the improvement of circumferential difference 3.2±0.3% in side-to-end group was statistically greater than 2.2±0.5% in end-to-end group (p= 0.04). The overall episodes of cellulitis were significantly reduced from 1.7±2.2 to 0.7±1.1 times per year (p< 0.001), but no difference was observed between the two groups.

**CONCLUSION:** Both side-to-end and end-to-end LVA configurations were effective surgical approaches for improving early-grade extremity lymphedema. Side-to-end LVA has the advantages of having a greater efficacy in terms of lymph drainage while requiring only one anastomosis and eliminating the need to use compression garments.
Maria Madajka, PhD; Sayf Al-deen Said, MD; Carlos Ordenana, MD; Kihyun Cho, MD; Nadeera Dawlagala, MD; Hirsh Shah, BS; Eliana F. R. Duraes, MD, PhD; Francis A. Papay, MD; Antonio Rampazzo, MD, PhD; Bahar Bassiri Gharb, MD, PhD

Affiliation: Cleveland Clinic, Cleveland, OH

PURPOSE: Ischemia time remains a significant limiting factor for successful extremity re plantation and transplantation. Compared to the cold storage normothermic ex situ perfusion is a novel method of a limb preservation by maintaining physiologic cellular metabolism avoiding the deleterious effects of hypoxia and cooling. The purpose of our study was to establish the efficacy of normothermic ex situ perfusion in preserving viability and function of human upper extremities.

METHODS: Six upper extremities were recovered from brain-death organ donors. Three limbs were perfused using an oxygenated colloid solution containing PRBC, plasma, and albumin at 39°C. Three were preserved at 4°C as a control. Electrolytes were kept within physiologic range by partial perfusate exchanges. Limb viability was assessed by muscle contractility, tissue oxygen saturation, creatine kinase (CK) and myoglobin concentrations, indocyanine green (ICG) angiography and thermography.

RESULTS: Perfused arms retained physiological parameters and function up to 48 hours with a final weight increase of 8.33% ± 0.07, mean muscle temperature of 35.5 ± 0.61°C, and tissue oxygen saturation 90.44% ± 11.2. Average values of final myoglobin and CK concentrations were 31863.33 ± 18621.31 ng/mL, and 68456.67 ± 32236.09 U/L. Thermography and ICG angiography depicted uniform peripheral perfusion throughout the experiment. Electrical stimulation of median, ulnar and radial nerves displayed no muscle contraction at the beginning, however, muscle contraction recovered gradually and was preserved until the end of perfusion. In the control group, no contraction was identified throughout the experiments.

CONCLUSION: Ex-situ normothermic limb perfusion shows potential in overcoming the present standard of care (cold preservation) improving ischemia time for large segments and envisioning a radical change in the management of traumatic amputations and upper extremity transplantation.

A Detailed Cost and Efficiency Analysis of the Walant Technique of A1 Pulley Release for the Management of Trigger Finger in a Procedure Room of a Major City Hospital

Presenter: Samantha Maliha, BA

Co-Authors: Oriana Cohen, MD; Adam Jacoby, MD; Sheel Sharma, MD

Affiliation: NYU Langone Health, New York, NY

BACKGROUND: The “Wide Awake Local Anesthesia No Tourniquet” (WALANT) technique is being increasingly applied to hand surgery owing to its benefits of decreased patient discomfort, reduced cost, shorter hospital stay, improved patient safety, and the ability to perform active intraoperative examinations. The aim of our study is to analyze the cost savings and efficiency of performing A1 pulley release for treatment of trigger finger using the WALANT technique in a major city hospital procedure room as compared with the standard tourniquet, operating room approach.

METHODS: Patients who underwent trigger finger release either in the main hospital operating room or procedure room between 2012−2017 were identified. Both paper and electronic medical records were reviewed and demographics collected including age, BMI, smoking status, medical comorbidities, and chief complaint with any prior conservative management noted. Additionally, procedural information was obtained including date of surgery, procedure site and length of operation, amount of local anesthesia used, turnover time, and cost of supplies. Patients were followed for an average of 82 days in the procedure room group and 242 days in the operating room group, with post-operative complications noted.

RESULTS: Thirty-nine procedure room and 37 operating room patients undergoing A1 pulley release were identified from October 2012 to April 2017. Patients in the procedure room received solely local anesthesia, while patients in the operating room received local anesthesia, MAC, or general endotracheal or LMA intubation. In both the procedure room and operating room, each finger requiring release was treated with roughly 7.6 cc of local anesthetic.

Cases performed in the procedure room were of overall similar duration to those performed in the main operating