

skin. The pharmacokinetics, biodistribution, and clearance of the two dyes were evaluated.

RESULTS: Inconsistent pharmacokinetics of the two dyes led to refinement in both fluorophore delivery and composition. Reproducible fluorophore delivery into the dermis was achieved utilizing a novel delivery platform VAX-ID® that provides standardized, accurate, and user-friendly intradermal injections. Moreover, we modified our fluorophore by removing human serum albumin, thereby optimizing the pharmacokinetics of the optical dye for ultimate clinical translation.

CONCLUSION: Developing a model for noninvasive measures of direct lymphatic flow in real-time remains a critical unmet need in the field of lymphatics. We continue to focus on the clinical translatability of our model with the goal of human translation in the near future.

SP45. SYSTEMIC LYMPHATIC IMPROVEMENT AFTER LIPOSUCTION FOR PRIMARY EXTREMITY LYMPHEDEMA

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PURPOSE: Liposuction is an effective treatment for solid-predominant lymphedema by debulking pathologic tissue. Although studies demonstrate significant volume reduction and improvement in patient reported outcomes, there is concern that liposuction can lead to further lymphatic injury. This study investigates lymphatic drainage following liposuction using indocyanine green (ICG) lymphography. We hypothesize that following liposuction, there is not only improvement in lymphatic function in the operative limb but also systemically in other affected areas.

METHODS: All primary lymphedema patients who underwent lymphedema liposuction between January 2020 to April 2022 were included. Patients who underwent previous lymphatic procedures or those without follow up imaging were excluded. All patients underwent standardized diagnostic and tracking protocol including patient reported outcomes, limb circumference measurements, and ICG lymphography pre-operatively and post-operatively.

RESULTS: 25 patients were included in our analysis, 22 females and 3 males. The average age was 52.2 ± 17.2 years old, with average BMI of 27.0 ± 4.9 . 88% (n=22) were symptomatic in the lower extremities, 8% (n=2) complaining of bilateral upper extremity swelling, 4% (n=1) with swelling in all four extremities. Total of 25 limbs underwent lymphedema liposuction, 23 lower extremities and 2 upper extremities. On average, 2.7 ± 1.3 L of lipoaspirate was removed. 64% (n=16) underwent skin reduction as well. Mean follow up was 5.8 ± 3.7 months (range 3-18 months). No complications were seen. When comparing pre-operative ICG to post-operative ICG, 100% (n=25) had improvement in lymphatic flow in the operative limb ($p < 0.001$), with reduction in pathologic and/or emergence of normal lymphographic patterns. Interestingly, 96% (n=24) had improvement in lymphatic flow in at least 1 non-operative limbs as well ($p < 0.001$).

CONCLUSION: We have demonstrated that liposuction does not lead to further lymphatic injury, rather we found improvement in lymphatic function post-operatively. Counter to current belief, we have also found there is systemic improvement in lymphatic drainage, not just isolated to the surgical limb.

SP46. ANATOMIC ANALYSIS OF A MASSETERIC TO ZYGOMATIC NERVE TRANSFER IN RAT AND PIG MODELS

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PURPOSE: Facial reanimation is frequently achieved by performing a masseteric to zygomatic nerve transfer. This procedure enables nerve fibers of the fifth cranial nerve to re-innervate the facial muscles. Even though re-innervation is usually successful, the clinical outcome is commonly unsatisfying. This nerve transfer is one of multiple surgical techniques to treat facial paralysis. However, none of the current treatment options achieve fully satisfying results. In order to improve outcomes and establish new therapeutic approaches, translational research with preclinical animal models is inevitable. This anatomical study aimed to demonstrate the feasibility of a masseteric to zygomatic nerve transfer in rats and pigs.