flap could leave poorly-hidden scar on the forearm and sometimes cause cold intolerance over the hand.\textsuperscript{1} In our institution, peroneal flap has been the workhorse flap for the soft tissue defect in head and neck reconstruction.\textsuperscript{2-4} The goal of this study is to present the peroneal flap as a feasible option for head and neck reconstruction.

**METHODS:** With the same perforator anatomy of fibula flap\textsuperscript{5} and slight modification of harvest technique of fibula flap, the peroneal flap could be harvested within 1 to 2 hours. Between 1996 and 2015, 246 peroneal flaps and 114 ALT flaps were used in the head and neck reconstruction by the senior author (Dr. Yang). A variety of applications to different types of defects will be demonstrated to show its versatility. We retrospectively reviewed the medical records, looking for all the perioperative complications. The perioperative complication rate of ALT flap was used as a comparison group to validate the viability of the peroneal flap. Stata 9.1 software (StataCorp, Inc., Texas, USA) was used for statistical analysis. Fisher’s exact test was conducted to compare the two groups. A $p$ value less than 0.05 was considered statistically significant.

**RESULTS:** Compared to radial forearm flap, none of our patients after peroneal flap harvest complaint about cold intolerance over the foot, and skin grafted flap donor sites were shifted to less noticeable lower legs. Compared to ALT flap, because peroneal flap was thinner and more pliable, in some conditions, it was more suitable for head and neck reconstruction. For example, an aesthetically pleasing and saliva-leakage preventing neo-commissure could be easily created\textsuperscript{4}. Statistically speaking, in our series, there is no difference between ALT and peroneal flap in terms of perioperative complications rates ($p=0.18$).

**CONCLUSION:** Due to its easy learning curve, better-hidden scar than radial forearm flap, thinner skin paddle than ALT flap, and comparable complication rates with ALT flap, peroneal flap should be considered a feasible option for the head and neck reconstruction.

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**Venous Anastomosis to Control Lymph Flow for Lymphatic Malformations**

**Presenter:** Motoi Kato, MD

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**INTRODUCTION:** There are several lymphatic diseases that could be treated surgically. Lymphatic venous anastomosis (LVA) was developed to improve lymphedema. On the other hand, in children settings, the majority of lymph diseases are not lymphedema, but lymphangioma or also called lymphatic malformations (LM). This LM especially micro-cystic type LM (mLM) had been challenging to treat because the conventional therapy had been limited efficacy and highly cause complications. To change the strategy, focusing on the lymph flow was the key for this disease. Thus we modified and analysed LVA to improve mLM of children.

**METHODS:** We indicated 14 sequential cases of mLm patients who appeared to our clinic from July 2015 to June 2016, 10 males and 4 females, between 0 to 12 (mean 4) year-old. All cases underwent indocyanine green (ICG) lymphangiography and modified LVA under general anesthesia. Single surgeon (presenting author) performed all surgeries. Depend on the ICG findings of flow pattern we classified anastomosis manners into 2 groups; 1, LVA to decrease the in-flow and 2, increase the out-flow directly from the cysts.

**RESULTS:** In all cases successful assessment with ICG were possible. 11 out of 14 (79%) cases were
improved their situations such as size decrease, vesicle disappearance, or prevent following functional loss. Only one case increased vesicles on the surgical site. No complications such as allergy reactions, lymphorrhea, functional loss, surgical site infections or post-operative bleeding were observed.

CONCLUSION: We applied ICG and modified LVA for mLm patients and found they are effective. This flow oriented surgical strategy with ICG and LVA for LM was very unique. To our best knowledge, this is the first report that shows the effectiveness of ICG and of LVA on LM.

mLM were considered that related to the obstruction of lymph flow proximally. Conventional surgeries were limited, so this surgical strategy could be a break-through for this challenging disease. And also ICG and LVA could spread their indications to a new field.

The limitation of this study was the short time follow-up period after the surgery, so more cases should be indicated.

Postoperative Hematoma in Microvascular Reconstruction of the Head and Neck

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INTRODUCTION: Free tissue transfer has become a safe and reliable means for repairing soft tissue and bony defects of the head and neck. Although success rates for free flaps in the head and neck are high, at around 97 to 98%, the incidence of postoperative complications is also relatively high. One significant complication is postoperative hematoma formation. However, few published studies have addressed its incidence, etiology, or outcome. Therefore, we carried out a retrospective analysis to investigate this issue.

METHODS: A 3-year review of 288 patients with 293 consecutive microvascular free tissue transfers to head and neck defects at Taipei Veterans General Hospital for the period January 2013 to December 2015 was conducted. Patients with postoperative hematoma were identified via chart review. Demographic data, perioperative conditions, medications and outcomes were evaluated.

RESULTS: Thirty-four patients (11.8%) developed postoperative hematoma. Compared with the patients without hematoma, these patients had higher wound infection rates (34.3% VS 19.7%, p = 0.049), longer hospital stay (28.9±24.0 VS 21.6±15.3 days, p = 0.04) and needed more secondary procedures (1.89±1.35 VS 0.94±1.38, p <0.001). Lower platelet count and the use of non-steroidal anti-inflammatory drugs (NSAIDs) are associated with higher incidence of hematoma formation (p = 0.04 and p < 0.001), but age, flap types, drain types, radiation and post-operative blood pressure have no significant associations.

Among the 34 patients with hematoma, 18 had flap compromise and underwent emergent re-exploration. Sixteen patients were salvaged while 2 patients had flap failure. After flap salvage, the final flap failure rate of hematoma patients was similar to the others. (5.7% VS 4.7%, p = 0.68).

CONCLUSION: Postoperative hematoma in head and neck microvascular reconstruction is not uncommon and may lead to poor outcome and more complications. The avoidance of NSAIDs preoperatively may prevent hematoma formation. Surgeons should be alert to this situation with prompt recognition and intervention that a high salvage rate can be achieved.

Microvascular Composite Reconstruction of the Skull and Scalp: Assessment of Treatment Options

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INTRODUCTION: Microvascular reconstruction of the scalp and skull is difficult for numerous reasons. Composite defects require careful consideration of both soft tissue and bony reconstructive