subcutaneous flap (called an ‘interspace wall flap’) is used to isolate the surgical spaces, reducing complications.

**SURGICAL TECHNIQUE:** The interspace wall flap is made between the two surgical spaces and is composed of Scarpa’s fascia, deep fat, muscle fascia, and muscle. Because the interspace wall flap is strongly attached to the 5th and 6th rib cartilage and intercostal muscle, the two surgical spaces are completely isolated.

**RESULTS:** This method has been evaluated in 31 patients (27 with primary breast augmentation, 4 with revisional breast augmentation) who underwent both operations simultaneously. At the current follow-up duration (ranging from 2 to 12 months), all patients are satisfied with the scar, and there have been no complications.

**CONCLUSION:** The innovative method described above addresses two key issues in simultaneous augmentation rhinoplasty and breast augmentation. First, scaring is minimized by using the same incision for harvesting rib cartilage and performing breast augmentation. Second, an interspace wall flap is used to completely isolate the implant pocket space from the harvesting rib cartilage space, preventing potential complications associated with using the same incision line.

Thus, this method appears to be promising for simultaneous augmentation rhinoplasty and inframammary breast augmentation.

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**Where Does It Hurt? The Distribution of Painful and Non-Painful Sensory Disturbances in Carpal Tunnel Syndrome**

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**PURPOSE:** Hand diagrams were first studied in 1990 by Katz et. al. as a diagnostic tool, but the use of the hand diagram as an epidemiologic investigational tool has not been thoroughly explored. The compiling and tracking of patient perceived data can also be used to establish clinically relevant normative data. We explore a novel method of patient reported symptom mapping to establish and compare the normative distribution of painful and non-painful symptomatology in patients diagnosed with median neuropathy.

**METHODS:** New patients were given a visual questionnaire consisting of a photo of human hand and wrist and a superimposed numbered grid. Patients were instructed to map their symptoms, painful symptoms noted with an “X” and non-painful sensory disturbance (i.e. numbness or tingling) noted with an “O.” Patients were instructed not to put marks where they lacked any symptoms. Grid cells could contain both an “X” and an “O.” All patients were then evaluated by a single, hand fellowship trained surgeon, who was blinded to questionnaire results, and a visit diagnosis was made. Questionnaires of patients with an isolated clinical diagnosis of carpal tunnel syndrome were compiled for inclusion in the study. Those with any conflicting or confounding diagnoses (e.g. symptomatic osteoarthritis, tendinosis, recent trauma) in the same limb were excluded. The frequency with which patients marked either painful or non-painful sensory disturbance was tallied and recorded for five discrete anatomic areas: the volar forearm (zone 1), carpal tunnel (zone 2), distal palmar (zone 3), radial three digits (zone 4), and ulnar two digits (zone 5). A frequency score was calculated by dividing the total number of marks in that symptom area across all patients by the total number of marks made by all patients. Photo-editing software was then used to create a visual frequency distribution for both painful sensation and non-painful sensory disturbance. Higher frequencies of marks by the study population were depicted by darker shades for each cell.

**RESULTS:** A total of 34 hands in 26 patients were included in the study. Painful symptoms were clearly centered over the carpal tunnel with a frequency score of 46%. Painful symptoms in the digits were reported less frequently with scores of 23% and 0.3% for the radial and ulnar digits, respectively. Non-painful sensory
disturbances (e.g. numbness, paresthesias) were found to have a more peripheral distribution, with the radial three digits demonstrating a score of 60%. Non-painful disturbances were seldom localized to the area over the carpal tunnel (score 12%).

**DISCUSSION AND CONCLUSION:** Our study is the first to compile patient-reported data to establish the normative distribution of symptoms in carpal tunnel syndrome. This represents valuable epidemiologic information that will assist surgeons in making a sound clinical diagnosis, as well as serving as a reference point for the comparison of pre-treatment and post-treatment clinical data.

### Cervical/Submandibular Dead Space Filling Type Chimeric Anterolateral Thigh Flap Reconstruction for Head and Neck Cancer Surgery

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**INTRODUCTION:** Surgical site infection (SSI) occurrence is a common postoperative complication in head and neck cancer surgery. According to a study by Osborn et al., 19.8% of patients who underwent free or pedicled flap reconstruction following head and neck cancer resection were readmitted mainly for SSI with an occurrence rate of 45.2%. In another study, Karakida et al. reported that SSI occurred in 40.6% of 276 patients who underwent oral cavity cancer resection followed by free flap reconstruction. Once SSI develops, there is a risk of sudden death due to abscess formation complicated with carotid or vertebral artery stenosis. Dead space formation in the primary excision site as well as cervical and submandibular area due to lymph node dissection is also common in these patients. This dead space formation facilitates the risk of abscess formation. Here we share our experience of using a chimeric anterolateral thigh (ALT) flap as a countermeasure for the aforementioned complications.

**MATERIALS AND METHODS:** Fourteen patients who were treated between October 2016 and February 2017 were included in this study. ALT flaps were elevated as cutaneous perforator island flaps and then the pedicled vastus lateralis muscle was added to the distal end of the pedicle to prepare the chimeric flap. The cutaneous island flap was adapted to the resection site defect, then the muscle part was used to fill the dead space in the cervical/submandibular area to prevent effusion accumulation or wound dehiscence. The range of motion of this flap is superior compared with the perforator-only chimeric ALT. Filling dead spaces is possible by adjusting the size of the pedicled muscle.

**RESULTS:** Mean age of the patients (9 male, 5 female) was 74.5 years and the mean follow-up period was 6.2 months. Primary tumor location was tongue in 3 patients, buccal mucosa in 3 patients, lower gingiva in 4 patients, parotid gland in 3 patients and maxilla for 1 patient. All patients underwent dead space filling type chimeric ALT flap transfer. There were no partial or total flap losses, wound dehiscence or SSI. None of the patients had any motion impairment due to loss of vastus lateralis muscle.

**CONCLUSION:** We believe that this application of the ALT flap is a valuable addition to the surgeon’s arsenal. The dead space filling process could be used as a prevention measure for SSI or vessel exposure due to radiation-induced skin damage following radiotherapy. This flap also allows same-site reconstruction if the primary tumor recurs by using the pedicle of the chimeric flap for reattachment of another free flap.

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### Belatacept and Rapamycin with Short-Term Use of Tacrolimus Delay Allograft Rejection in a Novel, Large Animal Vascularized Composite Allotransplantation Model

**Presenter:** Tarek Elgendy, MD