

Dr. Insoo Suh: my thoughts on transoral endoscopic thyroidectomy vestibular approach and transoral and submental thyroidectomy

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Editor's note

The focused issue “*The Management of Thyroid Tumors in 2020 and Beyond*” edited by Drs. Jonathon Russell and Jeremy Richmon is going to be released in *Annals of Thyroid (AOT)* in the coming months. This issue aims to review the state-of-art in the management of thyroid pathology, to provide a venue for original research focused on remote access or minimally invasive thyroid management and to review the success at extending proven management strategies into new geographic regions. Taking this opportunity, we have done a series of interviews with the authors discussing the highlights of their articles and sharing their experiences or stories in this field.

Dr. Insoo Suh is an Assistant Professor of Endocrine Surgery at the University of California, San Francisco (UCSF), and Staff Surgeon at the San Francisco Veterans Affairs Medical Center. He specializes in endocrine surgical diseases of the thyroid, parathyroid, adrenal, and pancreas. And his clinical interests include the application of minimally-invasive techniques such as laparoscopy and robotics to endocrine surgery. It is such an honor for *AOT* to interview Dr. Suh on his research and his thoughts on transoral endoscopic thyroidectomy vestibular approach (TOETVA) and transoral and submental thyroidectomy (TOaST).

Expert's introduction

Insoo Suh, MD (*Figure 1*) is an Assistant Professor of Endocrine Surgery at the UCSF, and Staff Surgeon at the San Francisco Veterans Affairs Medical Center. He specializes in endocrine surgical diseases of the thyroid, parathyroid, adrenal, and pancreas. Dr. Suh's clinical interests include the application of minimally-invasive techniques such as laparoscopy and robotics to endocrine surgery.

Dr. Suh received a BS in Molecular Biophysics & Biochemistry from Yale University, and obtained his MD



Figure 1 Insoo Suh, MD.

from UCSF. He also completed his surgical residency and endocrine surgery research fellowship at UCSF. He then completed an additional fellowship in surgical innovation from the Stanford University Biodesign Program prior to joining UCSF's faculty.

Dr. Suh has received several awards in recognition of his clinical and research achievements, including the Fred H. and Esther E. Nusz Achievement Award from UCSF, as well as the Paul LoGerfo Research Award from the American Association of Endocrine Surgeons. He is an active member of several national organizations including the American College of Surgeons, the American Thyroid Association, and the American Association of Endocrine Surgeons.

Dr. Suh has authored over 55 peer-reviewed journal articles, several book chapters, and serves on the editorial board for numerous peer-reviewed journals. He is the first surgeon on the West Coast to perform a new technique of “scarless” thyroidectomy, and has an active clinical program for this procedure. He is also an inventor of novel medical innovations, with several patent applications to

his name and multiple grants to research and develop new technologies.

Interview questions

AOT: What is your recent research focus?

Dr. Suh: I help lead a wide-ranging program in endocrine surgical research. Our projects range from clinical research (one example is the development of methods to study and improve decision making processes for patients with endocrine surgical disease), outcomes/health services research using large patient datasets such as the US National Surgical Quality Improvement Program (NSQIP) and National Cancer Database (NCDB), and surgical innovation of new techniques as well as new devices and technologies. We also have a focus in endocrine neoplasia basic science led by James Koh, PhD.

AOT: You are the first surgeon on the West Coast to perform a new technique of “scarless” thyroidectomy. What’s this surgery? Could you tell us the story of your first time performed this surgery?

Dr. Suh: The TOETVA is a technique that was popularized by Angkoon Anuwong in Thailand. It involves the placement of three small endoscopic incisions in the oral vestibule behind the lower lip, and using endoscopic (or robotic) instruments to dissect over the chin and into the neck in order to remove the thyroid without a visible neck scar. Dr. Anuwong should be credited for refining the technique and making it safe, feasible, and teachable. A number of US surgeons including myself visited and learned from him, and brought it back to our centers. I am fortunate to have been the first surgeon in the Western US to perform this procedure in 2017. In order to get to this point, I followed a comprehensive training and preparation process—involving numerous cadaver training sessions, co-training with my partner Quan-Yang Duh, educating my OR/hospital colleagues, and developing proper credentialing and QI procedures—to ensure that the development of this new technique could be safe and scalable.

AOT: You also have an active clinical program for the above-mentioned procedure. Would you briefly introduce this program to us?

Dr. Suh: As the first center to do this, we have built the

capacity for an active clinical program for this procedure, which is gaining in popularity and adoption. We have a dedicated and specialized nursing and administrative team from the outpatient clinic to the operating room and hospital ward staff who are trained to provide this technique to patients with the proper surgical indications. As a large training institution, I help train other attending surgeons and our postgraduate endocrine surgery fellows, and also welcome visiting surgeons from other institutions to learn this technique.

AOT: Could you describe to us what is a hybrid TOaST technique for thyroid lobectomy?

Dr. Suh: I developed the TOaST technique as a viable alternative to TOETVA to address some of its potential limitations – namely, the increased risk in some patients of mid-chin discomfort from the larger middle oral port incision, as well as limitations in ability to remove some larger specimens through the mouth without risk of specimen rupture. The TOaST technique relocated the middle incision from the mouth to the mid-submental crease, which is functionally hidden from view and is a popular incision used in cosmetic head/neck procedures. This incision involves no dissection at the mid chin, involves a shorter and straighter path to the thyroid, and can be stretched to accommodate larger specimens. The ease and ergonomics of performing the TOaST procedure is equivalent to TOETVA.

AOT: What are the advantages and disadvantages of TOaST?

Dr. Suh: The advantages are as I’ve mentioned above; in addition, the TOaST technique may increase the comfort for surgeons who are first training in the technique and would like to avoid a larger oral incision. The main disadvantage of TOaST is that it technically re-introduces a small skin incision; however, as I mentioned above, the submental area under the chin is hidden and functionally invisible from normal view (in fact, I’ve had many patients who showed me remote scars in that area from childhood falls or other accidents that were not noticeable). Nevertheless, for the patients who have a high priority for a totally scarless approach, such as a history of poor scarring and keloid formation, I would lean more toward offering them a conventional TOETVA.

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