OHNS Sialendoscopy Center Sheds Light on a Hidden Problem

For most people, the thought of a favorite meal makes their mouth water. But those with blocked salivary flow can’t enjoy that experience. Patients with salivary duct obstruction often complain of pain or swelling of their salivary glands, particularly at mealtimes. “Some patients have had swelling for months, and it is a subtle issue,” says William Ryan, MD, FACS, “or they can have periodic swelling that is really bad, and then it goes away. The symptoms can be intermittent.”

Dr. Ryan and Jolie Chang, MD, FACS, are taking a novel approach – using sialendoscopy – to treat UCSF patients with this condition.

**Mini endoscopes**

Sialendoscopy uses mini endoscopes to examine the salivary ducts in patients with symptoms of obstructed salivary flow. Sialendoscopes, which measure 0.8–1.6mm in diameter, are some of the smallest endoscopes used in medicine. Their small size allows access to the tiny ducts so that surgeons can see what is going on inside the ducts before developing a treatment plan.

Salivary glands produce saliva and funnel saliva into the mouth through salivary ducts. Common causes of obstructed salivary flow can include salivary duct stones (sialolithiasis) and scarring (stenoses).

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Message from the Chair

UCSF is the Nation’s #1 OHNS Department for NIH Funding

Our UCSF Department of Otolaryngology – Head and Neck Surgery now ranks #1 in the nation in NIH funding in Otolaryngology! Our research footprint at UCSF has rapidly expanded in the past few years. This expansion is enabled by resources, recruitment, and the institution’s commitment to cancer care at the UCSF Helen Diller Family NCI-Designated Comprehensive Cancer Center at Mission Bay.

Associate Vice Chancellor Jennifer Grandis, MD’s effort in the Head and Neck Oncology Lab is now up and running and expanding through her partnership with Patrick Ha, MD. UCSF is now participating in a head and neck oncology-focused SPORE program from the NIH.

Other areas of traditional research strength within our department are also growing. Hearing research and central auditory processing research within the Coleman Lab and Epstein Lab is secured by continuous NIH funding earned by our team over the past three decades. Dylan Chan, MD, PhD, has a new R21 grant to study connexin 26; Young-Wook Jun, PhD, has been funded with multiple grants devoted to nano particle research (he just had a paper accepted to Cell!); and John Houde, PhD, and Sri Nagarajan, PhD, continue an extremely successful collaboration incorporating imaging technology. And this is not even the whole story.

The department is also in the midst of major clinical recruitments. This year we will add two new pediatric otolaryngologists who will work at both UCSF Benioff Children’s Hospital Oakland and Benioff Children’s Hospital San Francisco, two new skull base and rhinology surgeons, and a vestibular otologist/neurotologist to round out our fantastic otology team. Our clinical activities continue to address unusual problems. As you will read in the cover story of this edition of Heads Up!, Jolie Chang, MD, and William Ryan, MD, are taking a novel approach to treating patients with salivary duct obstruction. They are using sialendoscopy to help diagnose salivary duct blockage problems and to guide minimally-invasive surgical techniques to treat the problems.

And yet… there is more to come. Please visit our new website (http://ohns.ucsf.edu) to become informed about the major strides being made in expert clinical care, research innovation, and a continuing tradition of expertise in teaching and mentorship.

Warmly,
Andrew H. Murr, MD
Chairman, Professor of Clinical Otolaryngology – Head and Neck Surgery, Roger Boles, MD Endowed Chair in Otolaryngology Education Department of Otolaryngology – Head and Neck Surgery

New Faces in the Department

The Department of Otolaryngology – Head and Neck Surgery is being bolstered with the addition of a seasoned administrator and three outstanding academicians.

In December 2015 Mary Bobel, MBA, joined UCSF as the Chief Administrative Officer for the Departments of OHNS and Radiology. Ms. Bobel has extensive management experience in institutional academic settings. She served as the manager of the Department of Radiology at the Stanford University School of Medicine and worked within Stanford’s Office of Institutional Planning. Previously, she managed the Department of Radiology at the University of Chicago Pritzker School of Medicine. Ms. Bobel holds a BA, an MA and an MBA from Stanford University.

Dan Johnson, PhD will join UCSF OHNS as a Professor in June, 2016. He matriculated at Princeton University, where he obtained an MA and PhD in Molecular Biology. Dr. Johnson completed a postgraduate fellowship at UCSF from 1988–1993. He then came up through the ranks within the Department of Medicine at the University of Pittsburgh until he became a professor there in 2012. Dr. Johnson has been on the editorial board of Cancer Research and is the section editor of Leukemia. He has been honored with the G. David Roodman Excellence in Mentorship Award from the Hematology/Oncology Fellows at Pitt in 2014.

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Interview: Patrick Ha, MD

Taking a Systematic Look at Clinical Care

Patrick Ha, MD, was named Chief of Head and Neck Oncologic Surgery at UCSF when he joined the Department of Otolaryngology – Head and Neck Surgery in October 2015. Heads Up! recently caught up with Dr. Ha and asked him about his new role at UCSF:

What attracted you to UCSF?
Over the course of 20 years I was at Johns Hopkins – completing medical school, otolaryngology residency training, a fellowship, and serving on the faculty. When I heard about this opportunity at UCSF, several aspects of the position intrigued me. There is a very well-rounded clinical team as well as great potential for growth. That is, we just moved to a new campus and there is a new cancer center director, Dr. Alan Ashworth, and a new Clinical Translational Science Institute director, Dr. Jennifer Grandis, who both recently moved to UCSF. So the culmination of all these forces, both clinical and research, made this a very appealing opportunity.

Describe your role as new chief of head and neck surgery?
From a clinical standpoint I am director of operations for the Division of Head and Neck Surgical Oncology at Mission Bay. I make sure everything runs appropriately, that we have the right staffing, and that we have the right people from a physician standpoint.

I view my role on a larger scale as a clinical provider – trying to provide the best care for my own patients, but also thinking about the role more systematically. One initiative that the institution has been really excited about is the concept of the Unit Based Leadership Team, or UBLT, which follows the philosophy of Lean Toyota Management. The goals are to institute continuous process improvement and to create systems that are sustainable and also increase satisfaction for providers and staff – to make the workplace both happier and more streamlined. These efforts will allow for a better patient experience, improve the efficiency of healthcare delivery, and improve patient access.

For example, we have decreased our wait time for patients to be seen. One of the metrics that UCSF uses is the percentage of patients who are seen within two weeks. Currently our division’s numbers are at 90 percent, which is well above our institutional goal, but I would like to see that go even higher. So we have done some things that have really made a difference in terms of providing access to care, and we will continue to assess our results.

From another clinical standpoint, my role is to integrate the team. I would submit that our patients are among the most complex – from an oncologic and general provider standpoint – in terms of the number of resources and individuals that touch the patient during their treatment. Patient care areas include medical oncology, radiation oncology, dental oncology, oral surgery, nutrition, speech language pathology, social work, physical and occupational therapy, symptom management, and neuropsychology. Trying to organize and capitalize on all our strengths in those areas has been a big part of my job as well.

What are your areas of research?
My research has been focused on the molecular biology of head and neck cancer and most specifically salivary gland cancers. One particular type of cancer, adenoid cystic carcinoma, is where I have dedicated most of my effort. It is rare – there are only about 1,000 cases in the U.S. per year – but it’s a very good tumor model to study in many ways. One problem is that the prognosis is very uncertain. Some patients do really well and other patients do not. It’s frustrating because we don’t have a good way of telling which patients are going to do well. About half the patients will develop metastases, but we can’t tell which patients. Our current treatment methods have not changed much in the past 20 years. It is coincidental that my Distinguished Professorship is named after Dr. Irwin Jacobs, who happened to have been treated for adenoid cystic carcinoma. He generously endowed this position, so I have even more inspiration to continue my research in this area.

Tell us your goals
The most important thing to me is to build a team that encompasses all of the core values that we hold every day – a team that works seamlessly, that provides the best patient care possible, in the best way possible. It’s a matter of engaging that team and facilitating that care so when a patient comes, our communication lines are open and our experts in all of the disciplines are ready to surround the patient and provide the best care possible.

From a research standpoint, I also want to build upon our current team of head and neck cancer researchers and engage the brilliant research community at UCSF to further our work. Ultimately, our goal is to develop novel therapies that will change the way head and neck cancer is treated.
Integrated Health Care Practitioner Team Benefits Patients

The UCSF Otolaryngology – Head and Neck Surgery department’s diverse clinician team comprises Physician Assistants (PAs) and Nurse Practitioners (NPs), who work collaboratively with department faculty physicians to provide excellent patient care.

“We are fortunate to have recruited and trained a group of knowledgeable and compassionate providers who evaluate and treat patients across the diversity of subspecialties in our department, including performing in-office diagnostic and therapeutic procedures,” says team leader, Laura Kirk, PA-C.

“Our collaborative approach ensures that both our new and established patients receive timely access to care for their concerns, with faculty otolaryngologists readily available for assuming care of more complex patients or those who require surgery,” she adds.

Both PAs and NPs are licensed health care professionals with extensive postgraduate training. PAs are nationally board-certified health care providers who have completed two to three years of postgraduate medical training. NPs are nationally board-certified advanced practice nurses who have completed two to three years of master’s degree nursing training. Both PAs and NPs are widely accepted by patients and may be more accessible to patients than physicians, often spending more time with each patient.

In the UCSF Department of Otolaryngology – Head and Neck Surgery, both PAs and NPs see patients with general otolaryngology, pediatric otolaryngology, and head and neck surgery conditions.

“We utilize the most up to date technology and evidence-based medicine to care for our patients in preventive care, diagnosis, and treatment. This includes prescribing medications, performing outpatient procedures, and assisting in surgery,” notes Ms. Kirk.

“The UCSF OHNS team’s collaborative approach is designed to directly benefit our patients by improving access to and coordination of care at all levels,” points out Department Chairman Andrew H. Murr, MD.

PAs and NPs are subject to periodic peer review and clinical outcome evaluations, just like the physician faculty. In addition to providing direct patient care, UCSF Otolaryngology – Head and Neck Surgery PAs and NPs are also involved in clinical education, clinical research, and quality improvement initiatives; and they may have supervisory duties.

Meet the OHNS PA and NP Team

Laura Kirk, MSPAS, PA-C (General Otolaryngology Practice and PA/NP Team Supervisor) joined the UCSF team in 2008 as the first PA or NP in the OHNS department. She sees patients of all ages and otolaryngology concerns, teaches nationally on dizziness and various pediatric otolaryngology topics, and also teaches in the UCSF Medical School and UCSF Pediatric Nurse Practitioner Program. Her clinical interests include infant feeding disorders, dizziness, tinnitus, and sudden hearing loss.

Trina Sheedy, MMS, PA-C (Head and Neck Surgical Oncology) joined the team in 2013. She sees adult patients with head and neck surgery concerns including benign and malignant tumors, thyroid and parathyroid disorders, and salivary gland disorders and has a clinical interest in diagnostic and therapeutic use of ultrasound for these conditions.

Brittany McGinnis Okimura, MMS, PA-C (Pediatric Otolaryngology) joined the team in 2014. She sees pediatric patients at both the San Francisco and Oakland locations of UCSF Benioff Children’s Hospital. Ms. Okimura’s clinical interests...
are obstructive sleep apnea, pediatric ear disorders, epistaxis, and newborn feeding difficulties. Roseanne Krauter, MSN, FNP-C (General Otolaryngology, Otology) joined our team in 2015. She sees adult patients with all otolaryngology concerns, and has interests in unilateral sensory hearing loss, cochlear implantation implementation for single-sided deafness, and vestibular disorders. Shauna Brodie, MS, FNP-C (General Otolaryngology) joined the OHNS team at San Francisco General Hospital in 2015. Ms. Brodie's clinical interests include addressing disparities in health care by improving accessibility and cultural competence, both locally and internationally. Regina Gould, MMSC, MPH, PA-C (General Otolaryngology) joined the team in 2016. She sees adult patients at the Parnassus campus, assisting in the operating room and providing inpatient continuity of care within UCSF's unique hospitalist-model of otolaryngology. She also sees adult outpatients at the Mount Zion clinic location. Her interests include sinus disease, airway emergencies, and cross cultural barriers to delivery of health care. Suzanne Petersen, MSPAS, PA-C (Pediatric Otolaryngology) joined the team in 2016 and sees patients at the Oakland campus of UCSF Benioff Children's Hospital. Ms. Petersen's clinical interests include pediatric hearing loss, craniofacial anomalies, and newborn feeding difficulties. Cosette Audirac, MSPAS, MPH, PA-C (Pediatric Otolaryngology) joined our team in 2016. Focused on providing care to Spanish-speaking patients and families and other underserved populations, she sees pediatric otolaryngology patients at both the San Francisco and Oakland locations of UCSF Benioff Children's Hospital. Ms. Audirac's clinical interests are congenital hearing loss, sleep disordered breathing, and naturopathic and alternative medical therapy.

Research Profile: Aaron Tward, PhD, MD

Engineering Mutations to Defeat Squamous Cell Cancer

Aaron Tward, PhD, MD, has studied many things during a diverse career, but his current interest is cancer biology and how normal tissue goes awry in becoming cancer, with specific work in squamous cell carcinoma. To get to that subject he took a circuitous route, which included cancer research with former UCSF chancellor and Nobel laureate J. Michael Bishop, MD; work in Dr. Elizabeth Blackburn’s lab, which was focused on telomeres; and investigative activities at the Broad Institute, which he describes as the “center of the bioinformatics universe that had great sequencing expertise.”

During his residency at The Harvard Combined Program in Otolaryngology starting in 2007, he met Todd Golub, MD, of the Broad Institute. Dr. Tward took advantage of research blocks in his residency to investigate the genetic underpinnings of cancer in the Golub laboratory. As Dr. Tward describes it, “in the mid-2000s sequencing technology – that is the ability to determine DNA sequences – got much better. Basically it became feasible then, in an unbiased fashion, to say ‘okay I am going to, within a sample of tissue, determine the sequence of an entire genome.’”

At the time, one of the wealthiest men in the world, Carlos Slim Helú, donated enough money to the Broad Institute to fund the sequencing of many tumors, including breast cancer and head and neck cancer. As a PhD-trained cancer biologist who also knew about head and neck cancer, Dr. Tward was paired with Nico Stransky, a good friend of his, to sequence head and neck squamous cell carcinoma.

“We worked our tails off, and ultimately found all kinds of mutations that were of interest,” he says. They published a paper in Science in 2011, which was one of the very first reports of genome-wide mutations that are present in any tumor type.

In 2014, Dr. Tward accepted an appointment as an assistant professor at UCSF to start a lab that is currently engineering authentic models of the human disease.

“We engineer in the same mutations, in two percent of people in the world have – that’s a big impact.” he says. To recapitulate the disease, the lab is using primary human tissue. They are recreating the organ structure in culture and then putting in the same mutations that cause the human disease.

The hope is to create squamous cell carcinoma that faithfully recapitulates aspects of the disease. He and his team hope to create unbiased screens where they can alter the model and note the results.

“Squamous epithilium is tissue that has barrier function,” he explains. “The cells in the basal layer are the ones that make more cells. Ultimately the cells that reach the top layer lose their nuclei and slough off. Cancer of your skin looks like it harbors pretty much the same mutations that cancer of the squamous epithilium in your mouth does, which is the same as lung squamous cell cancer, which looks pretty much the same as bladder or cervical or the subset of cervical cancer. That means that if we find ways to target these mutations, it is probably applicable to many different types of cancer.”

“This will reform the entire three-dimensional structure in vitro,” says the researcher. “And even better, if you now engineer mutations into these, you will start seeing mutations that look like cancer. Squamous cell cancer in general is defined by when these cells pass through this basement membrane, and once they invade that, they are, by definition, cancer. You can see this in vitro also.”

The significance of Dr. Tward’s work rests on global best estimates that 1.5 percent of the world’s population will die of squamous cell cancer.

“That’s a lot of people,” he says. “It basically means that if a given mutation is really important and present in 20 to 30 percent of tumors, then if you reverse the mutation, at the very least you will extend somebody’s life a lot. This means that a drug could be applied to cancer that one to two percent of people in the world have – that’s a big impact.”
Sialendoscopy is a huge aid in diagnosing the salivary duct blockage problems, and it is used to guide minimally-invasive surgical techniques to treat the problems. “In addition to giving us visualization, sialendoscopes also have side ports through which basket snares or graspers or even plastic balloons can be delivered to the duct to remove the stones or widen the ducts when they are narrowed from scarring,” Dr. Ryan explains. “The sialendoscopes also let us see if the work that we have done is effective. So, if we have rerouted or bypassed a duct or created a new opening into a duct, we can use the sialendoscope to determine that the duct reconstruction was successful.”

**Sparing the gland**

“An overall goal for these minimally invasive techniques is to preserve the salivary gland,” says Dr. Chang. “To avoid the need to surgically remove the entire gland – the traditional recommendation – we aim to treat the source of obstruction within the duct. We have found that removing the stone or treating a stenosis directly has produced excellent results and high rates of patient satisfaction.”

Dr. Ryan adds that “after sialendoscopy there is just a small surgical wound that needs to heal. The patient wakes up and can eat and go home right away. They will notice a fairly dramatic change, and the change seems to be durable for most patients. For salivary stones, sialendoscopic assisted techniques work very well.”

**Pioneers in the field**

UCSF has a rich history in pioneering sialendoscopy and minimally invasive salivary duct surgery. David Eisele, MD, was one of the first American surgeons to bring the equipment and techniques to the United States from Europe when he was the chair of UCSF’s Department of Otolaryngology – Head and Neck Surgery.

“Thanks to David Eisele, UCSF pioneered one of the first U.S. sialendoscopy centers in 2004. At UCSF, we are dedicated to advancing the field with our research and by teaching physicians around the country how to incorporate these techniques into their practices,” says Dr. Chang, who notes that “we started a sialendoscopy and salivary duct surgery instructional course in 2014 and have been offering it annually due to interest from otolaryngologists around the country.”

“The mentorship that I received at UCSF as a fellow has been a springboard to develop this part of my career,” comments Dr. Ryan. “Dr. Eisele really developed sialendoscopy at UCSF to the point where he had a robust practice. Jolie Chang and I both learned from him. We currently collaborate with a group of U.S. experts in sialendoscopy and have developed our own training course.”

“As a newer technique, I have found it interesting to define how sialendoscopy can be used to help our patients, and we continually strive to find ways to improve how surgery is performed – how to reduce morbidity, how to be less invasive, how to be better at diagnosing and choosing effective therapies,” Dr. Chang adds.

**Tracking outcomes**

“Will Ryan and I have developed the first specific clinical questionnaire for patients with obstructive salivary disease to help understand how patients improve after surgery” notes Dr. Chang. “We aim to use it as a clinical tool to characterize disease severity and understand patient outcomes.”

The two surgeons are collecting feedback from patients with obstructed salivary flow both before treatment and at intervals after treatment. “The questionnaire scores not only symptoms, but it has an aggregate score, and the scores have shown what procedures work” notes Dr. Ryan. “We are really interested in the subtleties of the treatments we give and what works best so that we can counsel patients and predict real outcomes of the procedures for patients.”

Gretchen M. Oakley, MD, will join the department in August 2016 as a Clinical Assistant Professor. Dr. Oakley received her MD from Saint Louis University School of Medicine in Missouri in 2010, followed by a five-year otolaryngology – head and neck surgery residency at the University of Utah Hospitals and Clinics in Salt Lake City. She was the 2014 recipient of the Steven D. Gray Memorial Research Award from the University of Utah’s Otolaryngology – Head and Neck Surgery Department and is first author on five scientific publications. Dr. Oakley’s fellowship, in rhinology and skull base surgery, will be completed at St. Vincent’s Hospital in Sydney, Australia, in June 2016.

In June 2016, Jordan Virbalas, MD, will join the department as a Clinical Assistant Professor and will be situated at UCSF Benioff Children’s Hospital in Oakland as a member of the pediatric otolaryngology team. Dr. Virbalas earned his masters in the Science of Teaching from Pace University in New York and attended the Harvard Extension in Health Careers. Dr. Virbalas received his MD in 2010 from Weill Cornell Medical College in New York. His residency in otolaryngology – head and neck surgery was completed in 2015 at Albert Einstein College of Medicine in New York, followed by a fellowship in pediatric otolaryngology – head and neck surgery at the Children’s Hospital Colorado in Aurora.
The Ragnar Relay Series (named for Ragnar, a king and hero of early 9th Century Scandinavia) has grown from a single 188 mile relay from Logan to Park City, Utah in 2004 to the largest overnight running relay series in the nation. On October 23-24, 2015, a 12-person OHNS team ran a grueling but gorgeous 197-mile Ragnar Race in Northern California. Molly Naunheim, MD, a PGY-3 OHNS resident, led the team and describes her experience:

All of our 12 participants committed to up to 36 hours for the race. We ran Friday day and through the night, and then through the next day. Each runner completed three legs of between three and 13 miles each, so after runners #1 through #12 completed their first legs of the race, runner #1 would start again and the sequence was repeated three times.

The route took us from San Francisco, up into the Marin Headlands, and ended in Calistoga, in California wine country. We ran among beautiful vineyards; we had incredible views; and the scenery was just magnificent.

In a Ragnar Race, the team of 12 is split into groups of six, who travel together in a van. Each group is in charge of dropping a runner off and making sure that they pick up the runner who is just completing their leg. At that checkpoint the first runner transfers a slap bracelet to the new runner.

Each group also provides “van support,” where the van pulls to the side of the road at an unexpected place along the route to cheer for their runner during their leg and then drives on to the next checkpoint. At night, because you are running in near darkness, it’s important to wear reflective vests and LED lights. It can really feel lonely out there – in wine country, pretty much by yourself, in the dark. But seeing your van ahead on the side of the road and hearing your teammates cheering (despite the fact that it is 4:00 a.m.) really pushes you forward.

Organizing the OHNS team
It takes a lot of time and logistical coordination to allow for six OHNS residents to be away from the hospital and make sure that there is still sufficient coverage. But I figured 2015 was the year, and everybody signed up and had a great time. In addition to myself, our six residents included Drs. Dan Faden, Conor McLaughlin, Sean Alemi, Phil Perez, and Eric Formeister. Rounding out our team of 12 were faculty members Drs. Steven Pletcher and Chase Heaton; nurse practitioner Shauna Brodie; graduate medical education administrator Joanna Times; and friends of the department, Rachel Baum and Sam Rowen.

A unique event
The race was a great opportunity to build department camaraderie in a new way. Part of me was worried because when you aren’t running you are spending 36 hours, sweaty, in a cramped van. Although the residents all knew each other well, some of the other team members don’t know each other that well. Luckily, everyone really enjoyed themselves as there is plenty to do between runs. All the teams decorate their vans, for example. We had markers listing everyone’s name and nickname, along with three boxes so that after each runner completed a leg of the race, a box got checked off. When the race was over, all boxes were filled and the vans were covered in writing. It turns out, when you are not running, you are certainly occupied by cheering on team members and rushing to the next checkpoint. Everyone was enthused, sleeping when we could, but dedicated to getting up and cheering on the next runner.

Raising funds
Many of us residents would like to go on global missions – for example to fix cleft lips and cleft palates or perform chronic ear surgery. Because those trips are often paid for out of the residents’ own funds, we wanted to create a resident education fund. So, any money raised from the Ragnar Race was to be designated for resident education in the future. Dr. Pletcher helped me arrange for pledges of $1.00 per mile from OHNS alumni and current department members.

I’m happy to report that our official finish time was 28 hours and 24 minutes. Thanks to everyone who supported the team, we raised $4,158 for the education fund!
Upcoming Events

The Annual Francis A. Sooy, MD Lectureship
June 18, 2016, 7:30 am–Noon
Mission Bay Hospitals, William & Susan Oberndorf Auditorium
Speaker: Kathleen Sie, MD, FACS, University of Washington

The Roger Boles, MD Lectureship
September 15, 2016, 5:00 – 6:45pm
Location to be determined
Speaker: Bevan Yueh, MD, MPH, University of Minnesota

Soy Society Alumni Reception at the AAO/HNS Academy Meeting
September 18, 2016, 6:00–8:00 pm
San Diego Yacht Club, 1011 Anchorage Lane, San Diego, CA

Sialendoscopy / Salivary Duct Surgery Course
November 17, 2016 | JW Marriott, San Francisco, CA

Head and Neck Cancer and Endocrine Surgery Update
November 18-19, 2016 | JW Marriott, San Francisco, CA

23rd Annual Advances in Diagnosis and Treatment of Sleep Apnea and Snoring
February 17-19, 2017 | Disney’s Boardwalk Inn Resort, Orlando, FL

Pacific Rim Otolaryngology Head and Neck Surgery Update Conference
February 18-21, 2017 | Moana Surfrider Hotel, Waikki Beach, Honolulu, HI

Otolaryngology Update: 2017
November 2-4, 2017 | Palace Hotel, San Francisco, CA

For further information about CME courses, please go to http://cme.ucsf.edu.
For information on Ground Rounds and departmental events, please visit http://ohns.ucsf.edu or contact Linh Nguyen at linh.nguyen@ucsf.edu.