Facial reanimation advances are restoring smiles

With current advances in treatment for facial paralysis, most patients can benefit from one of the many diverse approaches that now are available, says UCLA facial plastic and reconstructive surgeon Irene Kim, MD. “In the past, many patients with facial paralysis were told that they were going to have to live with it, but that should no longer be the case,” says Dr. Kim, who helped to establish a multidisciplinary facial reanimation center at UCLA. “There are many options now offered that can help these patients regain function as well as confidence regarding their appearance.”

While the manifestations of facial paralysis differ depending on the cause, the impact on quality of life is almost always substantial.

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News from UCLA Health

Researchers find adult stem cell characteristics in aggressive cancers from different tissues
UCLA researchers have discovered genetic similarities between the adult stem cells responsible for maintaining and repairing epithelial tissues and the cells that drive aggressive epithelial cancers.
[Link to article]

Brains of people with schizophrenia less reactive to social rewards
In imaging studies, UCLA researchers found that the brains of people with schizophrenia are less sensitive to social rewards, such as the positive feelings that can come from social interactions with people, than they are to so-called nonsocial rewards, such as money or objects.
[Link to article]

New therapy spurs nerve fibers to regrow through scar tissue
Neuroscientists at UCLA, Harvard University and the Swiss Federal Institute of Technology have identified a three-pronged treatment that triggers axons to regrow through scars after spinal cord injury in rodents and transmit signals across the damaged tissue.
[Link to article]

Researchers identify link between gut bacteria and eating for pleasure
A UCLA study showed that people with elevated microbiome levels of the metabolite indole — produced when gut bacteria break down the amino acid tryptophan — were more prone to eating for pleasure rather than for hunger.
[Link to article]
Center is a national resource for treating the full range of voice problems, from common to complex

The voice and the role it plays in our quality of life often is overlooked — until something goes wrong, says Gerald S. Berke, MD, founding director of the UCLA Voice Center for Medicine and the Arts and chair emeritus of the UCLA Department of Head and Neck Surgery. “The expression of our self-identity really lies in our voice. When that changes, it can make a tremendous difference in our ability to interface at work and with our family and friends, as well as in the way we are perceived by others,” Dr. Berke says.

The UCLA Voice Center for Medicine and the Arts is a national resource for treating patients with any type of voice problem, from common benign disorders such as vocal nodules, polyps and papillomas to more complex disorders such as spasmodic dysphonia, airway stenosis and laryngeal cancer. The center consists of a multidisciplinary team of experts — including laryngologists, voice scientists, speech pathologists and voice therapists — who work closely with referring physicians to optimize voice function tailored to the individual patient’s needs.

The most common cause of voice deterioration is stomach acid resulting from GERD. “A lot of patients think they know how to treat it, but they haven’t really dealt with the problem the way they should,” Dr. Berke says. Such patients are typically treated through dietary and other lifestyle changes, as well as medicines to help control the acid, he notes.

Other patients present with benign lesions on their vocal cords — often from misuse or overuse. Patients can have functional disorders, typically developed through poor habits in the use of their voice, for which they are treated by a speech pathologist. Neurogenic causes of hoarseness can involve a paralysis or weakness of the vocal cords, often resulting from surgery or a viral illness. Patients with neurological disorders, such as Parkinson’s disease or more rare forms of dystonia, can experience spasms that affect the vocal cords. The center also sees patients with serious swallowing problems, most commonly following radiation therapy or from neurogenic causes. Finally, premalignant lesions that can cause vocal changes, as well as more serious vocal cord malignancies, are treated in the least invasive way possible after a consensus is reached through a multidisciplinary tumor board.

The center offers a number of innovative procedures for voice and swallowing disorders, including office laser therapy, digital video endoscopy and Botox injections to the vocal cords — a minimally invasive treatment pioneered at UCLA. “People with severe hoarseness for more than a month that isn’t getting better with changes in the diet or voice rest should let a professional take a look at their vocal cords to see what’s happening,” Dr. Berke says. Patients with persistent swallowing problems or who find lumps or bumps in their neck should also visit a specialty center such as UCLA’s, he adds.

The department is also launching the Professional Voice Clinic Program for people whose work depends on their voice. “This is not only for professionals in the entertainment industry, but also for those who use their voice on a constant basis, such as teachers, lawyers and salespeople,” says Dinesh Chhetri, MD, a professor and laryngologist in the department whose practice is devoted to voice, breathing and swallowing disorders, and who is running the series of clinics. “Our focus will be on educating these individuals about how the voice works, how injuries occur and how they can be prevented.”
Advances in facial reanimation are restoring smiles

(continued from cover)

Dr. Kim notes that studies have documented that people with a paralyzed face can be viewed as less healthy, less agreeable and less approachable than others, hindering their ability to obtain jobs or find suitable mates. “Facial reanimation surgery isn’t just a cosmetic procedure to make people feel better about themselves,” Dr. Kim says. “Facial paralysis has an impact both on patients’ self-esteem and, given the social stigma, on the way they are perceived.”

The inability to fully smile or otherwise express the emotions they feel on the inside is the biggest complaint that Dr. Kim hears from patients with facial paralysis. But she points out that there are often significant functional issues as well. “People might see an asymmetric face, but there can exist deeper pain from struggles to do daily activities like brushing one’s teeth or drinking water from a cup,” she says. When the muscles around the mouth are weakened, many patients have difficulty eating food without spilling or drooling. Some patients can’t close an eye, leading to dryness of the cornea, which can impair vision.

Facial nerve surgery has to be tailored to the individual patient, taking into account the cause of the paralysis, the timeline of events and the health of the facial nerve and muscles. In patients with Bell’s palsy, an idiopathic form of paralysis that tends to affect one side of the face and is usually temporary, there is a tendency to treat medically and wait since a majority of patients regain their facial function without intervention. But in most other cases, Dr. Kim says, the UCLA team looks to be proactive with treatment to ensure that patients meet their facial-functioning potential. “The traditional thinking has been to wait two years before you do anything to see if there is some improvement,” Dr. Kim explains. “Most of us don’t think that way anymore. We don’t want to let the muscles atrophy.”

When, for example, a patient has an acoustic neuroma — a benign growth on the acoustic nerve in the brain also known as vestibular schwannoma — removal of the tumor can weaken the facial nerve. Traditionally, surgeons have waited to see signs of improvement; this can unfortunately lead to further weakening of facial muscles and poorer long-term outcomes, Dr. Kim says. There usually are options that can be implemented earlier on. For example, various nerve transfers that connect a portion of the masseteric, hypoglossal or facial nerve from the other side of the face to the weakened facial nerve can help “power” and instruct the paretic facial muscles to move.

“Facial reanimation surgery isn’t just a cosmetic procedure to make people feel better about themselves. Facial paralysis has an impact both on patients’ self-esteem and, given the social stigma, on the way they are perceived.”

Some patients may not be candidates for dynamic facial reanimation surgery, given their other health issues or inability to tolerate long periods of general anesthesia. They may benefit from more static procedures during which various tissues can be used as slings to suspend the patient’s face into a better position. They can help restore lip position and help with drooling and speech. Still, other surgeons are using minimally invasive temporalis tendon transfers to restore smile function. In this procedure, a small incision is made along the nasolabial fold or within the mouth itself. The temporalis tendon is secured to the tissues around the mouth, ultimately allowing patients to voluntarily smile when they bite down or clench.
For patients whose facial muscles are so weakened that there is no chance of recovery, Dr. Kim and her colleagues will perform a gracilis muscle free tissue transfer. This involves taking a piece of muscle (along with its artery, vein and nerve) from the inner thigh and attaching it to an artery, vein and nerve in the face and neck, where it can, over time, contract and pull the mouth, helping to perform the function of the lost facial muscle and enable the patient to smile.

Even if they aren't candidates for facial reanimation surgery, patients can benefit from adjunct procedures to help the paralyzed eye blink or lift a droopy eyebrow. Other aesthetic procedures such as a facelift, neck lift, brow lift, PRP injection, fillers or chemical peels can help provide a healthier, more rejuvenated and more symmetric appearance. In addition to performing these procedures, Dr. Kim offers Botox therapy for patients who, after recovering from their paralysis, develop synkinesis — abnormal involuntary facial movements that occur simultaneously with the voluntary movement of different facial muscles.

These and other procedures are performed in a multidisciplinary environment, with head and neck and facial plastic surgeons working closely with neurosurgeons and neuro-otologists to develop a unified treatment plan. “It is so rewarding to help patients be able to smile and feel better about themselves,” Dr. Kim says. “People who are experiencing facial paralysis shouldn’t feel hopeless, because there are almost always options.”

Neurofibromatosis type 2 (NF2), a rare genetic disorder that causes tumors to develop in the sheath of the cranial and spinal nerves, often can lead to facial paralysis, among other comorbidities. But work being done at the Neural Tumor Research Laboratory in the UCLA Department of Head and Neck Surgery is making significant progress to identify pharmacological approaches to controlling these tumors.

NF2 tumors, known as schwannomas, usually are benign. They most often form in the acoustic nerve and affect hearing and balance. “Because of the acoustic nerve’s proximity to the facial nerve, the facial nerve can become compressed, leading to facial paralysis,” explains Marco Giovannini, MD, PhD, director of the Neural Tumor Research Laboratory and scientific director of the UCLA multidisciplinary NF2 clinic.

Surgery has been the mainstay of NF2 treatment, but it carries significant risks, including the potential for resulting in neurological deficits, facial palsy and hearing loss. Dr. Giovannini’s lab is exploring whether or not drugs that are FDA-approved for other indications could, based on what is known about the molecular pathogenesis of these tumors, stop them from growing, or even shrink them.

The progress being made by Dr. Giovannini and his colleagues is due, in large part, to their development of genetically engineered mouse models of NF2. This has allowed them to screen a large number of compounds in order to inform clinical trials. They have completed one such trial, using a molecule that was FDA-approved for other oncologic indications. They tested the drug in 12 patients and found that after a year of treatment, about half of the patients showed stabilization of tumor growth.

“We have a pipeline of drugs that we will be selecting for clinical trials,” Dr. Giovannini says. “Getting one or more drugs approved for use in patients with NF2 would be a huge advance in reducing the risk of neurological deficits potentially associated with surgery by delaying the necessity for surgical intervention. It also will provide an option for patients who either wouldn’t be surgical candidates or who don’t want surgery.”

The UCLA NF2 clinic was recently established as a resource for NF2 patients to see specialists in a multidisciplinary setting. The core team includes pediatric and adult neuro-oncologists, neurosurgeons, neuro-otologists and clinical geneticists.
New chair of head and neck surgery looks to the future

Maie St. John, MD, PhD, a renowned surgeon, scientist and educator, is the Samuel and Della Pearlman Chair in Head and Neck Surgery and co-director of the UCLA Head and Neck Cancer Program.

You joined the UCLA faculty after completing your residency in otolaryngology here in 2005, and you were named chair of the Department of Head and Neck Surgery in January 2018. You have had many years to observe this department. How do you assess its strengths?

In many ways, UCLA was the birthplace of this field, and it is my privilege to be a part of this great legacy. Dr. Paul Ward, who was the chair from 1968 to 1991, built a legacy of head and neck surgery beyond otolaryngology. Then, Dr. Gerald Berke stewarded the ship to where it is now — a top program of excellence in research, patient care and education, and a Mecca for people coming to be trained. I am humbled and thrilled to be in this position, and if I have learned anything, it’s been by standing on the shoulders of giants. I often liken this department to Michelangelo’s David. When Michelangelo was asked how he created David, he said it was all in the marble. Here it’s the same — it’s UCLA and the individuals in our department with their creativity and commitment to patients that allow us to create an outstanding team.

What is your vision for the future?

We want this to be the top head and neck surgery department in the world, and to work with international partners to shape the future of otolaryngology. I think the two main pillars for the future will be innovation and collaboration. We want to establish an innovation ecosystem. This will provide a space for the best and brightest who come to UCLA — students, residents, fellows and faculty — to think creatively about how we are going to change practice or change therapies to ensure a better future for all of our patients and our community. We are seeing that same vision throughout our health system, where people are being encouraged to think about and pursue trans-disciplinary approaches to real-life problems.

What would be an example of this?

One of my patients was a 32-year-old female who developed a tongue cancer. When she and her husband came into my office, they asked me two very salient and poignant questions. The first was how much of her tongue I was going to need to resect, and the second was how would I know that we have removed the entire cancer. With our current care approaches and knowledge, we can answer those questions, but the truth is we could still do a better job. The morning I was coming to the hospital to operate on her, I was backing my car out of my driveway and it started beeping as I approached the front hedges. That started me thinking. When we are operating, we use our clinical judgment, our vision and our tactile senses to ensure complete and adequate resection of tumors. But if my car can tell me when I’m near something more dense — and we know that biologically a cancer cell is different from a normal cell — why can’t we harness technology to come up with a tool that can query how far we are from the cancer in real time in the operating room? And so, after I operated on that patient, I went over to the engineering school and signed up to give a lunchtime seminar where I presented our clinical needs. That was the beginning of the development of a camera that can see cancer cells intraoperatively so that we can resect all of the cancer tissues and preserve all of the surrounding normal tissues. I wanted to get better answers for patients.
by working with our team in my research laboratory. This is the kind of environment we have at UCLA — a wide range of experts, all working in close proximity in an atmosphere where there is that “eureka” spirit, with the sense that anything is possible if we innovate together to make it happen for the sake of the patient.

How does that collaborative spirit translate to the clinical arena?

I have a dear friend who traveled around the country seeking opinions for the care of his cancer, and he told me that one surgeon would give an opinion and three weeks later he would get another opinion from an oncologist and a week after that he would get a different opinion from the radiation doctors. It made him wonder if they were working together to come up with what’s best for him. At UCLA, we started our multidisciplinary Head and Neck Cancer Program with patients in mind. Many of them travel here from far away, and so one afternoon we set up a high-level discussion designed to reach a consensus on the care the patient should receive. The patient is then seen in the clinic by all of our specialists together. That discussion includes not just surgery, but also clinical trials and other approaches, and it includes the voice of the patient.

Patient-centered care is obviously a top priority for you and the department.

Absolutely, I believe that if we take care of the patients, everything else takes care of itself. So many of us were motivated to go into medicine by our desire to care for the person in front of us, and as long as we remind ourselves of that, whether it’s thinking about innovation, compassion or personalized medicine, we will do our best. I want UCLA to be a place where patients know that we care at every level, and that we offer only the treatment we would offer to members of our own families.

With long-term survival from head and neck cancers becoming more common, programs to assist survivors are increasingly important. To read about the UCLA Head and Neck Cancer Survivorship Program, click on the link to this article at: uclahealth.org/physiciansupdate

Taking steps toward personalized treatment for patients with head and neck cancers

Advances in so-called big data and the “omics” revolution — the use of genomics, proteomics and metabolomics to better understand cancers at the molecular level — have enabled UCLA’s head and neck cancer researchers to move toward personalized treatments in ways that would have been unthinkable a generation ago. Among other things, this has paved the way for the development of targeted drug treatments. “As we gather more data, and as machine-learning and other data-evaluation systems are put into place, we will continue to see more targeted therapies for these diseases, allowing us to provide personalized care,” says Maie St. John, MD, PhD, chair of the UCLA Department of Head and Neck Surgery and co-director of the UCLA Head and Neck Cancer Program.

UCLA has been a leader in introducing immunotherapy for the treatment of head and neck cancers, including immune checkpoint inhibitor therapy — an approach, successful in a number of cancers, that uses drugs to block specific proteins that act as brakes on the immune system, unleashing a more robust immune response against the cancer. Dr. St. John and her team have also joined with bioengineering colleagues to design and synthesize a modular polymer platform that can deliver targeted chemoprevention or immunotherapy, enabling head and neck surgeons to release immunomodulators or other medications during the surgery to prevent recurrence and improve outcomes. Another exciting innovation involves the development of a UCLA-developed camera system capable of imaging and seeing cancer at microscopic levels intraoperatively, thus allowing for precise surgical resection. This system is now being developed for imaging tumors in patients undergoing robotic surgery, once again in order to allow for precision head and neck surgery. Dr. St. John and her team also are working collaboratively in multidisciplinary teams to develop screens for patients at risk for HPV+ head and neck cancers, as well as developing innovations in head and neck cancer personalized vaccine immunotherapy.

The translational nature of head and neck cancer research at UCLA is hastened by the workings of the UCLA Head and Neck Cancer Program and its Head and Neck Tumor Board, a multidisciplinary team of surgeons, radiation therapists, medical oncologists, pathologists, radiologists, pain specialists, psychologists and others who meet to discuss each patient’s case and recommend a treatment plan. “All of the experts in that room have clinical or basic research that they bring to the discussion, which ensures that the most cutting-edge options are being considered,” says Elliot Abemayor, MD, PhD, co-director of the UCLA Head and Neck Cancer Program. Dr. Abemayor is engaged in collaboration with David Wong, DMD, DMSc, in the UCLA School of Dentistry and the UCLA Molecular Biology Institute, to develop salivary diagnostics to detect markers for head and neck cancers. In conjunction with bioengineers, this group has developed sensitive biosensors for diagnostic saliva analyses to help in detection and treatment evaluation of head and neck cancer patients. The goals include earlier, non-invasive diagnosis of head and neck cancers to optimize treatment outcomes and assessing markers for rapid diagnosis of head and neck tumors, thereby personalizing individual care.

“We are privileged to work in an environment that is highly conducive to collaboration, innovation and translational research all with the patient as our focus,” Dr. St. John says. “Our goal is to listen to and address what patients want, and to continue to advance the field.”
For most people, sinus problems or allergies are associated with symptoms such as postnasal drip, nasal mucous, nasal congestion, loss of smell and taste, and headaches. But Jeffrey Suh, MD, an associate professor in the UCLA Department of Head and Neck Surgery and a rhinologist in the UCLA Nasal and Sinus Disease Center, points out that these nasal-focused symptoms are most often characteristic of acute sinusitis. For patients with chronic sinusitis, the symptoms can be much more systemic, and have much more profound effects on one’s quality of life.

“In these patients, we can see a variety of symptoms such as depression, loss of productivity, problems concentrating and sleeping, and the sense that you’re constantly living in a brain fog,” Dr. Suh says. “It’s these intangible effects, not just the runny nose, that tend to bring patients to us for surgery.”

The UCLA Nasal and Sinus Disease Center offers medical and surgical management of complex nasal and sinus problems, including chronic sinusitis, allergic rhinitis and nasal-breathing problems associated with allergic and structural problems of the nose. For the patients seen by the center’s rhinologists, the health impact of their condition is far greater than is appreciated. Dr. Suh points to research indicating that chronic sinusitis sufferers report lower scores on measures of bodily pain and social functioning than patients with congestive heart failure, chronic obstructive pulmonary disease and back pain.
on measures of bodily pain and social functioning than patients with congestive heart failure, chronic obstructive pulmonary disease and back pain, for example.

These patients can improve significantly from endoscopic sinus surgery, a minimally invasive approach to opening up and cleaning out the sinuses. The center’s endoscopic techniques avoid the facial incisions and numbness associated with more conventional forms of sinus surgery, Dr. Suh notes. The majority of patients are treated on an outpatient basis and are completely or nearly symptom free within weeks. “Many patients feel better after sinus surgery than they have for decades, if not their entire lives,” Dr. Suh says.

The patient’s care doesn’t end after the surgery, Dr. Suh explains. “Just as important is that we identify the cause of the sinus problem and make sure it’s treated postoperatively,” he says. He notes that unlike acute sinusitis, which is almost always caused by a viral or bacterial infection, chronic sinusitis is usually multifactorial, with infections, genetic conditions, immunodeficiencies and long-standing, untreated allergies all serving as potential culprits. The UCLA rhinologists work closely with allergists and other specialists to ensure that patients receive proper postoperative medical management.

Aside from chronic sinusitis, other types of cases treated at the UCLA Nasal and Sinus Disease Center include rhinitis, a potentially debilitating condition characterized by a stuffy or runny nose; allergic or structural problems, such as a deviated or crooked septum that can interfere with nasal breathing; and more complicated cases, including revision surgeries, sinus tumors and cerebrospinal fluid leaks. Many of these conditions can be resolved endoscopically, sometimes in conjunction with other specialists at UCLA. Dr. Suh says “Most patients who walk into an ENT doctor don’t need a super-specialist,” he notes. “Our goal is to be a resource for the more complicated or unusual problems.”

Rhinology didn’t exist as a subspecialty until the last 20 years, Dr. Suh notes, but it is now widely appreciated that for a subset of patients who need sinus surgery, especially those with challenging anatomies, complicated comorbidities or complex pathologies, physicians with special training are needed to maximize the likelihood of success. Dr. Suh notes that rhinology surgery has changed substantially over the last decade, particularly with the advent of high-definition audiovisual technology and intraoperative navigation — analogous to a GPS system for the inside of the nose. The nasal packing that in the past caused significant trauma when removed in the week after surgery has been replaced by absorbable materials and mucosal sparing techniques, helping to minimize the discomfort from the surgery.

“There is a misconception that sinus surgery is ineffective, and that patients who go through it are likely to have recurrent disease and require multiple operations,” Dr. Suh notes. “But sometimes that is only the case if patients aren’t getting appropriate long-term follow-up and care. Sinus surgery does work, and our goal, by managing these cases from beginning to end, is to make sure it is the patient’s only operation.”

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Multidisciplinary expertise is best approach to treating balance disorders

Balance disorders can be incapacitating, affecting one’s ability to walk, drive and even sit or lie still without the sense of spinning, dizziness or lightheadedness. Although specialists often are able to diagnose these conditions with a simple history and physical exam, it is not uncommon that they are overlooked or misinterpreted outside of the expertise of a specialty center.

At UCLA Health’s multidisciplinary Neuro-Otology Program, neurologists who specialize in balance disorders work closely with neuro-otology surgeons such as Akira Ishiyama, MD, to evaluate and treat the full spectrum of neuro-otology disorders, including benign and malignant tumors, recurrent infections and disabling conditions resulting in loss of hearing and balance. That close collaboration across disciplinary boundaries — highly unusual for a program treating balance problems, Dr. Ishiyama says — is important given that...
symptoms such as dizziness can arise both from the inner ear and from other parts of the body, including the brain or the autonomic nervous system, and from migraine headaches.

“When patients have balance disorders, they need comprehensive neurotologic evaluation for accurate diagnosis and treatment,” notes Dr. Ishiyama, who collaborates with Gail Ishiyama, MD, a UCLA neurologist, in seeing patients with complicated balance disorders.

UCLA has been a leader in the diagnosis and treatment of balance disorders. The program’s Vestibular Function Testing Laboratory, established in 1961, developed the computerized analysis and rotary testing that continues to serve as the gold standard for assessment of vestibular function under the leadership of Drs. Robert Baloh and Vicente Honrubia. Dr. Baloh, a UCLA neurologist with a joint appointment in the Department of Head and Neck Surgery, pioneered the field of neuro-otology, training the majority of the medical neuro-otologists — board-certified neurologists who limit their practice to patients with balance disorders — currently in the field.

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Most of the balance problems seen by the program’s neuro-otologists and neuro-otology surgeons can be successfully diagnosed and treated, resulting in dramatic improvements in the quality of patients’ lives. Dr. Akira Ishiyama notes. Patients with benign paroxysmal positional vertigo, an inner-ear disorder characterized by extreme dizziness with eye or head movements resulting from displaced calcium crystals in the inner ear, can be cured in the doctor’s office with a head-movement procedure referred to as canalith repositioning. The program also developed a powerful MRI scanner used to monitor the accumulation of fluid in patients treated for Meniere’s disease — a debilitating condition marked by repeated bouts of vertigo, tinnitus and hearing loss. Treatment programs also are tailored for patients with age-related gait and balance disorders, as well as balance problems associated with stroke, multiple sclerosis, Parkinson’s disease and inherited ataxia syndromes, among others.

UCLA also receives worldwide referrals for the treatment of a rare condition known as superior semicircular canal dehiscence (SSCD), in which the normal bony structure around the inner ear is opened, leading to unusual and highly debilitating auditory and balance symptoms. The auditory dysfunction includes hearing loss as well as internally amplified sounds such as heartbeats and eye movements; SSCD patients also experience severe dizziness from loud noises, along with brain fog, fatigue and headache.

“This condition was only identified in 1998, and it’s not commonly known,” says Quinton Gopen, MD, associate professor in the UCLA Department of Head and Neck Surgery. “As a result, a lot of patients bounce around from doctor to doctor, and when they say they’re hearing strange sounds inside their head, they are sometimes sent to a psychiatrist without any realization that there is an actual pathology causing this.”

Dr. Gopen, working in partnership with Dr. Isaac Yang in UCLA’s Department of Neurosurgery, has developed a minimally invasive surgical technique that patches the hole in the inner ear, restoring normal balance and hearing. Through a small incision in front of and above the ear, they create a window through which bone wax material is used to close the opening responsible for the symptoms. The surgeons have performed nearly 200 of these procedures, done under a special image-guided navigation system, with high success rates.

“If a patient is complaining of internal amplified sounds, there are very few things that can cause that other than SSCD,” Dr. Gopen says. “Those patients should be referred for this surgery.”
UCLA Neurosurgery Update 2019

A comprehensive update on emerging diagnostic and treatment modalities for diseases of the brain and spine, this course focuses on primary and metastatic brain tumors, neurovascular diseases, skull base lesions, movement disorders and spinal pathologies, as well as traumatic brain injury. The course is designed for neurosurgeons, medical oncologists, radiation oncologists, neurologists and allied health professionals.

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