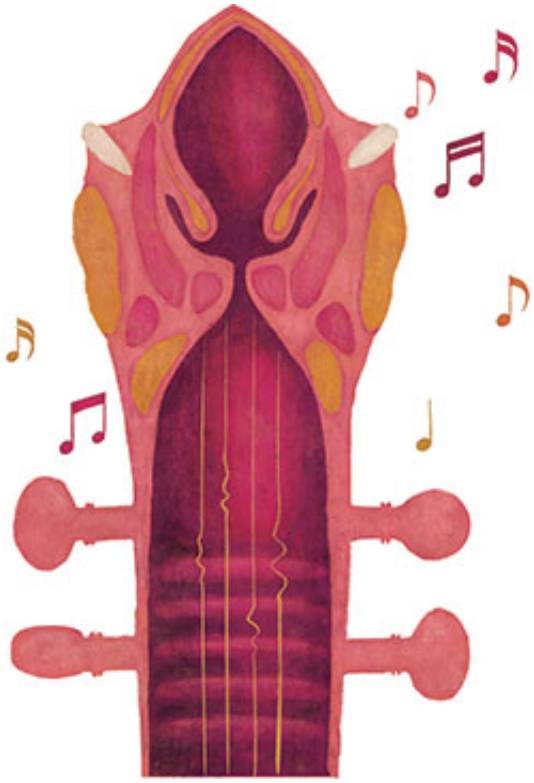
When words fail, a highly specialized center helps patients find their voices

November 24 2014, by Joan Voight



Credit: Traci Daberko

When Erik Laurence transferred to Shanghai, China, in 2009, as vice president of a software company, he thought his biggest challenge would be improving his Mandarin-language skills and learning the nuances of the Chinese business scene. But his vocal cords, not the foreign nation, turned out to be his undoing.

Laurence, who was in his mid-40s at the time, had struggled for about 20 years with a mild case of spasmodic dysphonia (SD), intermittently losing his voice at odd times. SD is a neurological disorder that involves spasms of the vocal cords, which causes the voice to break up or have a strained or strangled quality. "Building a career in marketing involved winning over new people, conference presentations and constant talking," he says. "My job had evolved to where I spent entire days on conference calls—with a voice I couldn't count on to work." He says the feeling of SD is "like you are running along and suddenly you trip, and you didn't see it coming. Your voice is fine, then suddenly it stops working in the middle of a sentence."

Speaking was even more difficult when he played sports and his heart rate went up. "It was like my brain was over-firing, causing the signals to the nerves to be too strong and making my vocal cords slam together, not allowing them to vibrate," Laurence remembers. "At social events, I wouldn't speak much, even though I had lots to say. Sometimes I'd get a sense of what words would work out for me, so I would say only what I could say."

His move to China made the problem markedly worse. "Work demands and trying to speak a new language aggravated all my vocal problems. It came to a head at a meeting where I was called on to speak to about 250 people," he says. "My voice was horrible, cracking and missing words. I wanted to crawl away and hide."

Clearly something had to be done. Laurence, who was trained as an engineer, methodically scoured the latest medical research on SD and took a week's vacation in New York to confer with specialists. That's when he learned about otolaryngologist Gerald Berke, MD (RES '80, '84), chair of the Department of Head and Neck Surgery, and UCLA's Voice Center for Medicine and the Arts. At UCLA, Dr. Berke performs a specialized surgery that severs the nerve pathway between the brain

and vocal cord and grafts a new nerve from the neck. It essentially rewires the larynx. The alternative for Laurence would have been Botox injections that usually correct the symptoms for about six months. But a Botox injection when he was younger left Laurence with only a whisper of a voice for two months, "which was miserable. So I was wary of the injections. I wanted a permanent solution."

For patients who have baffling problems with talking, breathing, singing or swallowing, the UCLA Voice Center for Medicine and the Arts can be an oasis in a desert of inconclusive tests, endless doctors' appointments and despair. The 10-year-old center flows from the life's work of its founder, Dr. Berke, who is an international authority on the physiology of the larynx. "Your voice is how you express yourself to others," Dr. Berke says. "If it's compromised, it impairs your personality and how you interact with the world, which can be overwhelmingly frustrating."

In addition to patients like Laurence, world-class singers such as Celine Dion and John Mayer have made their way to Dr. Berke for help with their ailing vocal instruments and then been public in their support of his work. "Through his medical care, I learned that the voice is an instrument ... and nobody sees that as delicately and carefully as Dr. Berke and his colleagues at UCLA," Mayer told an audience in January 2014 at a fundraising gala to benefit the Department of Head and Neck Surgery. Many other entertainers who have trekked to the center's understated facilities in one of UCLA Health's outpatient offices prefer to keep quiet about any problems with their voices.

The Voice Center for Medicine and the Arts is known for novel treatments for such disorders as vocal-cord paralysis, airway stenosis and the SD surgery that Laurence underwent. In-office laser therapy, digital-video endoscopes and minimally invasive approaches are used to treat myriad complex and common disorders of the larynx and trachea. Dr.

Berke started the center in 2004 with Bruce Gerratt, PhD, a speech and language pathologist who consults on all Dr. Berke's patients, and Dinesh Chhetri, MD '97 (RES '03, FEL '05), an otolaryngologist who specializes in swallowing disorders. The younger generation of physicians at the center now includes otolaryngologists Jennifer Long, MD (RES '10, FEL '11), PhD, who joined the practice four years ago, and Abie Mendelsohn, MD '06 (RES '11, FEL '11), who joined in 2012.

For Laurence, the surgery itself was swift and without significant pain, but his long-term recovery process proved to be more difficult. Three weeks after his surgical procedure in Los Angeles, he was back on the job in China, but his voice, while no longer spasming, was weak, breathy and raspy. Because his vocal cords were farther apart than before due to the surgery, he also had to push out more air to make sounds. As a result, he got lightheaded when he talked for an extended time and often felt exhausted. Sometimes he pretended to be Marlon Brando in The Godfather to lighten the mood, but after months, it became increasingly difficult to carry out his work duties. Finally he bowed to the inevitable, quitting his job and taking a year off to travel and fully recover. He channeled some of his creative energy into a blog, SpasmodicDysphoniaSurgery.com, about his up-and- down recuperation. "Dr. Berke and his team told me it would take up to eight months to get my voice back to normal, but I selectively heard 'two months,'" he says.

Now, three years post-surgery, Laurence is in charge of marketing at FeeX, a New York startup, and his voice, to his great joy, is no longer an issue. "I don't have to measure my words anymore, and I'm back to the fun-loving person I was a long time ago," he brags. His only regret: going back to work too soon, without giving his body sufficient time to heal.

We listen in awe to the sounds emanating from the mouths of a Joan Sutherland or Luciano Pavarotti and marvel at how these vocal titans play their voices like fantastic musical instruments, but the truth is that

every healthy human voice is a complex and nuanced instrument. The flexible, versatile and emotional sounds produced by our bodies have been the envy of composers and musicians for generations.

Ironically, our vocal cords, also called vocal folds, have humble origins. Early in our development as human beings, they were simply a barrier to protect the airway against food passing into the lungs. Eventually they evolved to produce the array of sounds that form the basis of our voice. Located in the larynx, the cords consist of loose tissue that vibrates in a wave-like manner at 80-to-300 cycles a second when air from the lungs is pushed through them. "It's amazing that when we are talking, our vocal cords are robust enough to bang together about 100 times a second, without stress or strain," says Dr. Berke.

The cords are operated by specialized muscles that have exceptionally fine control. As we talk louder, the folds are closed longer and are pressed together more firmly. To manipulate the pitch of our voice, we automatically tighten the cords to make our voice higher or loosen them to make our voice lower. "It works in the same fashion as letting the air out of a blown-up balloon," Dr. Berke says. If you pull the neck of the balloon, it changes the sound coming out.

What makes each of our voices unique is the size of the cords we are born with—superstar-tenor Pavarotti, for instance, had massive vocal cords that could push large amounts of air through at high pressure—combined with the way we modulate sound through our throat, mouth, tongue and lips. "We learn how to control our voices as infants," Dr. Berke says. "A baby making seemingly meaningless baby talk is probably the child first experiencing how its voice works."

Dr. Dinesh Chhetri: “This center is unmatched in its combination of clinical care and research to advance the knowledge of these disorders, making a huge difference in patients’ quality of life.”

But to this day, the actual mechanism that causes vocal cords to vibrate is not very-well understood. "Because the cords are down low in the throat, and they vibrate so fast, it has been hard to study and measure the process until recently," says Dr. Berke. Only in the last 20-to-25 years have researchers had instruments that can examine the cords in detail and study the wave as it occurs over the cords, he says. The good news is that recent information about how the voice works has transformed what doctors at the voice center can diagnose and treat today.

While disease can contribute significantly to voice issues, that is not always the cause. Sometimes we do it to ourselves. Because the voice operates more-or-less on automatic pilot, without our having to think about it, we sometimes unknowingly put extra strain on our already hard-working vocal folds. We overburden our voices by talking a lot when we have a cold, or by smoking, or by yelling. Like an overworked muscle, the vocal cords can get tired and stiff and prone to injury. The result can be calluses, nodules, ulcers and other painful damage to our cords.

That damage can show up years later. In fact, the center is seeing an "epidemic" of voice issues in people who survived the 1960s era of sex, drugs and rock 'n' roll, Dr. Berke says. Members of that cohort, now in their 60s, 70s and 80s, are being seen with throat cancers and other problems tied to the common sexually transmitted human papilloma virus (HPV), apparently contracted from risky behaviors in their free-wheeling youth. The Centers for Disease Control and Prevention reported in 2013 that each year about 8,400 people in the U.S. are diagnosed with cancers of the back of the throat that may be caused by earlier HPV infections.

Singer Harley Jay was convinced he overtaxed his voice while performing the lead role in the play Rent for two years, both on Broadway and on tour. It made sense; he was performing eight shows over six days each week. "It got to where we had to hide containers of water all over the stage because I'd have to keep sipping water to be able to get any notes out," he recalls.

Later, Jay cut back to singing his signature city-country style with a band for four or five nights a week. But by then his voice had become "impossible," he says. "Sometimes my voice would crackle and crack and make horrendous sounds, or I'd open my mouth to sing and no sound would come out."

After a few years of putting up with it, he found his way to UCLA and Dr. Berke, who he vaguely remembered meeting years earlier. The news was not good. Dr. Berke's examination showed that Jay had cysts and a hemorrhage, which meant that Jay had to stop talking entirely for four weeks until the hemorrhagecleared up. Only then could the cysts be surgically removed.

In the fall of 2013, after a month of jotting messages on his cell phone and the nearest napkin or turning to his wife to be his voice, Jay

underwent a three-hour operation. Six more weeks of silence—not even a whisper—followed. "Being unable to speak was depressing. I felt like a hermit," Jay says. His old way of relieving stress was to drive around in his car and sing his heart out, but during recovery he had to learn other ways to cope. "I made videos on Instagram, and I wrote poetry—things you can do without a voice," he says. After six weeks, he could talk again, but Dr. Berke forbade him to sing for another four weeks. For Jay, all the waiting was more painful than his healing vocal cords, which he says felt like a bad sore throat.

Then the time finally arrived for him to sing. "I immediately scheduled a voice lesson and the results were so good that I hopped in my car and sang really hard," he recalls.

Jay says he now, at age 31, sounds better than he did when he was 20. "Since the surgery, my voice is not quite as gravelly, which [is a sound that] many rock singers may like. But, hey, I can sing like this for six hours a day. That sure beats being a gravelly singer who can sing only two hours a week," he says. To show off his new, improved vocals, he plans to release an EP with his band in October 2014.

Inside the voice center, nostalgic photos of John Lennon and other rock 'n' roll artwork decorate the walls of the Westwood Boulevard offices. The atmosphere is homey and warm, in contrast to the gleaming state-of-the- art technology. All new patients receive a comprehensive evaluation that includes an analysis of speech and voice quality and a videostroboscopic examination of the larynx, designed to assess the motion and pliability of the vocal folds. Laryngeal electromyography is performed as needed. Then a comprehensive management plan is developed, which may include voice therapy, surgery or in-office or operative procedures.

A fully equipped sound studio in the middle of the center allows patients

like Jay to record their voices to test quality and effectiveness. "Our work is all about balance," says Dr. Long. "The larynx is there to protect the airway, so sometimes procedures to improve breathing or swallowing interfere with a patient's voice. We often need to strike a delicate balance."

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Lucila Toche was one of those patients whose voice was out of balance. For more than four decades, she would run out of breath whenever she talked a lot, walked briskly or went dancing. When she slept, she woke up breathless every couple of hours. Asthma treatments didn't seem to help so she just learned to put up with it. That was until September 2013 and what she calls her "nightmare at Disneyland."

That day, Toche spent about eight hours showing her nieces from Peru around the Magic Kingdom, translating for them "and chatting, laughing and screaming. We were having lots of fun," she remembers. Then, suddenly, she collapsed and could hardly breathe, nearly blacking out. "When paramedics arrived, I was terrified of having to go to the

hospital, so I insisted that as soon as I stabilized they would let me go home to see my own doctor," she says. The next day, her doctor took one look at her throat and sent her to UCLA's Department of Head and Neck Surgery. There, she met Dr. Long and was introduced to the voice center.

A quick exam solved the mystery. When Toche underwent thyroid surgery in her native Peru 40 years before, doctors inadvertently injured the nerves in both of her vocal cords, essentially paralyzing the cords so they could not regulate her breathing properly. Dr. Long conducted endoscopic laser surgery to open up the frozen cords in December 2013, and Toche was out of the hospital the following day. "I had not been in a hospital since 1981, and I was really afraid and nervous about staying there overnight," she says. "But the UCLA hospital and staff made me feel really safe and well-taken- care-of."

Recovery meant almost no talking for three days, and she had to speak softly for a few weeks afterward. The upside: Her breathing was immediately better, and it stayed strong for three months. When it became strained again, in March 2014, Dr. Long performed a follow-up, inpatient surgery. In the months since, Toche revels in how much her life has improved. She says she hasn't had an asthma episode since the first surgery, she sleeps through the night without interruption, can keep up through an entire Zumba fitness class and doesn't wheeze when she goes salsa dancing. Her voice sounds a little different than it did before, but "that's nothing. My breathing used to be so bad, people were always asking me, 'Are you okay?'" she says. "But nobody asks that anymore."

George Hicker always quietly suspected that the source of his nagging sore throat was cancer. The discomfort started in 2011, and over the next year his doctors treated him with antibiotics and steroids. But he still had two serious bouts of bronchitis, "and the coughing, pain and hoarseness just wouldn't go away," he says. Almost every night, the constant

hacking disrupted his sleep. But Hicker, who was 64 at the time, kept working at his industrial-real-estate company in Sherman Oaks, California.

Dr. Abie Mendelsohn examines patient George Hicker, who underwent robotic surgery to remove a cancerous growth from his throat. It's been more than 18 months since the surgery, "and my check-ups show I've had no recurrence," Hicker says.

Near the end of 2012, just before he was slated to take a vacation in Kenya, the answer finally came, loud and clear. His throat specialist found a growth on his left tonsil, ordered a biopsy, and confirmed that, yes, it was cancer. Surgery, radiation and chemotherapy were recommended. But because of the upcoming trip, Hicker couldn't wait the weeks it was going to take to schedule an appointment with a surgeon from the health system where he was a member. Instead, he reached out to friends in the medical field and was referred to Dr. Berke. Within a week, Dr. Berke examined Hicker and gave him the go-ahead for his trip. When Hicker returned, Dr. Berke and Dr. Mendelsohn used the da Vinci robotic system to remove the cancerous growth. They also performed a lymph-node biopsy, with only a small incision on Hicker's neck.

A week later, he went back to the hospital for another night's stay to get an additional procedure to improve his swallowing. Returning home afterward, "I stopped for an In-N-Out burger and milkshake, which I had no problem swallowing," he recalls. The robotic surgery "saved him six-to-seven weeks of chemo and radiation therapy and damage to his jawbone," Dr. Mendelsohn says. Hicker took about a month to fully recover. "That's more than a year-and-a-half ago, and my check-ups show I've had no recurrence," he says. A college basketball player and sports-radio announcer in his younger days, Hicker boasts that his voice is stronger now than it was before the treatment.

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The voice center is about more than just clinical treatment. There also is a large research component to the work done there. The center's physicians attract numerous grants from the National Institutes of Health, as well as gifts from private philanthropy. In one research project, Dr. Long has spent five years researching how to use adipose-derived stem cells to grow tissue for vocal-cord replacement. And Dr. Mendelsohn, a fellowship-trained specialist in transoral robotic surgery and laser microsurgery, notes that the center incorporates national clinical trials for his throat-cancer patients, the first such trials in many decades. The center's research programs help develop treatments that are less invasive and more effective for patients, Dr. Chhetri says. "This center is unmatched in its combination of clinical care and research to advance the knowledge of these disorders, making a huge difference in patients' quality of life," he states.

"Our work is more than just medical care to help people make sound; it also is about the way we form sounds to make words," Dr. Berke says.

But "words mean more than what is set down on paper," he continues, quoting from the poet and author Maya Angelou's I Know Why the Caged Bird Sings. "It takes the human voice to infuse them with the shades of deeper meaning." Thus, the voice is at the very core of our gift to communicate. It is in essence what makes us human, and Dr. Berke's mission and that of the center he founded is to preserve that humanity by returning a lost gift to its rightful owners.

Provided by University of California, Los Angeles