

HeadWay

NEWS FOR PHYSICIANS FROM JOHNS HOPKINS
 OTOLARYNGOLOGY-HEAD AND NECK SURGERY

How to Mend a Broken Voice

Most people imagine voice patients as opera singers or actors. But the reality is that most patients with voice complaints work more routine jobs—as lawyers, salesmen, marketing professionals and, says **Lee Akst**, especially elementary school teachers.

“A classic voice patient is someone who uses their vocal cords so much that they’ve developed a lesion on them that gets in the way of good vocalization,” Akst, a laryngologist, explains. And elementary school teachers, Akst continues, are especially subject to such injuries. It’s a population—along with the marketers and lawyers and other highly vocal professionals—that Akst plans to treat as he takes the helm of the Johns Hopkins’ Division of Laryngology. Most importantly, however, he wants to grow the division and the breadth of services it offers. And he’s primed to do exactly that.

Akst, who specializes in voice and swallowing problems, joined Hopkins from Chicago’s Loyola University Hospital, where, as director of laryngology, he helped establish a center for voice and esophageal disorders. Now he’s doing the same here, joining together with current otolaryngology faculty and staff and bringing them all under the umbrella of the newly established Johns Hopkins Voice Center, in the outpatient center of the hos-



Lee Akst believes most patients with voice complaints, including those with phonotraumatic lesions, can be helped.

pital’s East Baltimore campus.

“We really want to expand the variety of specialty services we’re offering patients with these issues,” Akst says.

Those patients can range from television newscasters to the countless number of teachers who have sought Akst’s assistance through the years. People in these professions, he explains, have one major thing in common: They must frequently use—and sometimes strain—

their vocal cords.

“Teachers are particularly high risk because they’re constantly talking and projecting their voices to the classroom, and they’re unable to rest their voices when they’re feeling tired or hoarse,” Akst says. “They have to keep pushing through in order to communicate with their students.”

Over time, he continues, their voices—and those of others in vocally demanding jobs—just

“A CLASSIC VOICE PATIENT IS SOMEONE WHO USES THEIR VOCAL CORDS SO MUCH THAT THEY’VE DEVELOPED A LESION ON THEM THAT GETS IN THE WAY OF GOOD VOCALIZATION.”

give out.

Fortunately, he says, most patients with voice complaints can be helped, especially if diagnosis is early and accurate. Patients with phonotraumatic lesions such as nodules, polyps and cysts can benefit from voice therapy and also surgery. Patients with growths on their vocal cords, like cancer or papilloma, can benefit from surgery as well, often through procedures that use advanced pulsed laser technologies to help preserve voice. For patients with vocal cord paralysis, there are medialization procedures and also injections that can help restore voice.

“There’s always something we can do,” Akst says. “We can always make someone at least a little bit better.” ■

To refer a patient, call 410-955-1654 or visit hopkinsmedicine.org/otolaryngology.

Inside



2
New Reach
 for the Robot



3
Taming the
 Stubborn Sinuses



4
Acceleration
 Time



Jeremy Richmon says surgeons are making advances in deploying robotic devices in head and neck procedures.

New Reach for the Robot

When a surgical robot first entered the minimally invasive surgery scene in the late 1990s, it quickly became the preferred tool for operating on patients with prostate conditions. Over time, it's made its way into other fields, including bariatric and gynecologic surgery, to name a few. But for the minimally invasive procedures performed by head and neck surgeons, robotic surgery proved far trickier.

That, says head and neck surgeon **Jeremy Richmon**, is changing.

The problem had been that the “arms” of the machine—used to manipulate surgical instruments—are too large to maneuver through the mouth, which is the preferred minimally invasive method for reaching tumors of the upper aerodigestive tract. “The robot wasn’t designed for this,” Richmon explains. “It was designed for operations on the prostate and abdomen,” which are usually performed by fitting the robotically controlled surgical instruments and viewing devices through several widely spaced openings in the body at once.

Today, however, surgeons have found ways to overcome the obstacles presented by the narrow spaces in the head and neck, and Hopkins is now among a handful of centers approved to use the robot for transoral procedures.

“We’re the only center in Maryland that does this,” Richmon says, “and one of just a few on the East Coast.”

Minimally invasive procedures are especially beneficial in treating head and neck conditions, which have often required large incisions (and the deeper and less accessible a tumor or lesion, the more invasive the treatment might need to be). “The goal,” Richmon says, “has always been to decrease the morbidity of going through other areas of the head and neck and making large incisions.”

With the robot, he adds, “because we fit everything in through the mouth, what we’re doing is a new application of existing technology.”

Although some patients who undergo robotic surgery may also require radiation and chemotherapy, Richmon expects the need for such treatments to decrease in some cases. The risks of swallowing and speech problems may also be lessened. “This is a novel approach to treating tumors of the tonsil and base of tongue,” he says. “We’re following these patients very carefully for functional and long-term outcomes. So far, they’ve all recovered exceptionally well.”

To refer a patient, call 410-955-6420 or visit hopkinsmedicine.org/otolaryngology.

Fixing the Crooked Smile

The beginning of Jude Frank’s ordeal unfolded at the age of 2, when a pediatrician noted that the boy’s smile was a bit crooked. As a precaution, the physician requested an MRI, which showed a skull-base brain tumor, or schwannoma, that was paralyzing the facial nerve. To repair the nerve and remove the tumor, a surgeon would need to open up the skull.

Because of the difficulty and risk involved, Jude’s parents sought the advice of head and neck surgeon **John Niparko**, who in turn consulted with surgeons across the country. Eventually, though, he found the best opinion in his Johns Hopkins colleague **Kofi Boahene**, who agreed to operate.

But fixing Jude’s problem was much harder than finding a willing surgeon.

The facial nerve begins at the brain stem and makes numerous turns throughout the head and skull region, eventually ending in facial muscles in front of the ear. To remove the tumor and restore the boy’s facial function would require cutting the facial nerve from its normal position and reconnecting it to a muscle that moves tongue. The tongue, then, would be responsible for animating the rest of his face, a range of motion that



Kofi Boahene was worried that his little patient would need special smiling practice. He got a pleasant surprise.

typically requires considerable rehabilitation and training.

The operation was challenging, Boahene says, because children have a short facial nerve, making it even more difficult to connect it to the nerve in the neck. In a surprising—and fortunate—twist, what

physicians had believed to be a tumor turned out to be a benign neuroma.

Within a day of the four-hour procedure, Jude, then 4,

was back to himself. More surprising, however, was his quick adaptation to his re-engineered facial nerve. “Usually when we do these surgeries,” Boahene says, “you have to teach patients how to use their tongue to move the rest of their face.”

But, as the youngest patient at Hopkins to undergo this procedure, Jude was not the typical patient. “With no instruction,” says Boahene, “he learned to move his face, smile symmetrically, wink and do all the things a normal kid can do. It shows how powerful a child’s brain is and how great their capacity for learning and adaptation.”

To refer a patient, call 410-502-2145 or visit hopkinsmedicine.org/otolaryngology.

Taming the Stubborn Sinuses



Andrew Lane says some cases of chronic sinusitis demand a tailored response.

Imagine your last sinus infection. Now, imagine it lasting for months, even years.

That's a reality faced daily by patients with chronic sinusitis, who may endure years of blocked breathing, congestion, nasal drainage and a myriad of other symptoms that typically accompany sinus infections. For a subset of patients, antibiotics, surgeries, decongestants and steroids provide temporary relief, but ultimately the condition returns full-force.

"We are so successful in treating the majority of patients with sinusitis that it is difficult to understand why some patients don't respond to therapy," says Andrew Lane, director of the Johns Hopkins Sinus Center. "Their noses just stay in this chronic inflammatory state at all times. The million-dollar question is, why does that happen?"

It's a question—along with how to treat and cure patients who suffer from chronic sinusitis—that Lane hopes to answer by drawing on the many resources available in the Sinus Center. "Our clinic tends to draw people who've failed medical therapy elsewhere, and so they're referred here for the specialized care we can provide," he explains.

While sinusitis is common, unrelenting chronic sinusitis isn't, Lane says. Most people, in fact, do get better with the right treatment. But the ones who don't might endure scores of medications and surgeries—and even lose their sense of smell—

before anything ever improves, if it ever does.

To best treat these complex patients, Lane believes it's important to know what causes their condition in the first place. And to that end, Lane studies cells and sinus tissue obtained from patients with chronic sinusitis, and he has also developed mouse models that mimic aspects of the sinus disease human patients suffer.

His goal is to determine what sets patients with chronic sinusitis apart and what remedies prove most valuable. Recent work in his laboratory has focused on the inner lining of the nose, called the epithelium, finding that it may be failing to do its job in blocking germs that cause infection.

Lane estimates that three-quarters of his practice is made up of people with chronic sinusitis. Many have a decreased sense of smell, a problem that is

challenging to research or treat because the area of the nose responsible for the ability to smell is difficult to access.

What physicians do know is that inflammation of the nasal passages—one of Lane's primary research targets—is a defining characteristic of chronic sinusitis. In the nose, he explains, the neurons that recognize odors regularly die off and are replaced when

"OUR CLINIC TENDS TO DRAW PEOPLE WHO'VE FAILED MEDICAL THERAPY ELSEWHERE, AND SO THEY'RE REFERRED HERE FOR THE SPECIALIZED CARE WE CAN PROVIDE."

exposed to trauma, including inflammation. In most people, those odor-detecting neurons are regenerated as the epithelium works to fight off disease.

But in chronic sinusitis patients, those processes go awry, and the sense of smell remains decreased or absent as the sinus inflammation persists. Lane hopes his mouse models can contribute to a better understanding of why some patients cannot seem to fight off their illness and keep it off.

Until then, chronic sinusitis patients must rely on the right combination of drugs, surgeries and medical management.

"Sometimes we can help people with just the right antibiotic," Lane says. "Others need more intensive and prolonged medical treatment or revision endoscopic sinus surgery. Even those referred to us for very recalcitrant chronic sinusitis do experience significant improvement in their symptoms and overall quality of life." ■

To refer a patient, call 443-287-4687 or visit hopkinsmedicine.org/otolaryngology.

A Rising Partner in Sinus Surgery

Murray Ramanathan knew early in his medical school education that he wanted to specialize in otolaryngology. Working alongside Andrew Lane as a resident and fellow in the Johns Hopkins Department of Otolaryngology–Head and Neck Surgery only convinced him further.

"The main reason I came to Hopkins is that I was so impressed by the clinical breadth of this department," Ramanathan says. "There are so many opportunities for translational basic science research."

With his practice in rhinology and sinus surgery, Ramanathan sees mostly patients with chronic rhinosinusitis who require sinus surgery, such as those in need of revision procedures to repair previous operations or cerebrospinal fluid leaks.

It was during medical school at the University of Texas that he began researching chronic sinusitis—a topic close to the heart of his colleague Andrew Lane. "His research and work complements mine," Lane says. "And it will lead to new treatments, new ideas for treatments and advancing this field in general."



Murray Ramanathan

Acceleration Time

How one clinic found ways to speed up their system.

At most hospitals, under normal circumstances, any clinic would welcome an increase in its number of physicians. But when the clinic's facilities don't grow to match, that progress can be too much of a good thing.

Such was the case in the Johns Hopkins Department of Otolaryngology–Head and Neck Surgery. During the past 15 years, even as the number of physicians in its outpatient clinic doubled, the available clinic space remained the same, putting an increased strain on the system. Over that time span, patient waits gradually grew longer, an increasing number of patients arrived without a necessary referral, and physicians became frustrated with the delays that often erupted when patients couldn't be placed quickly in exam rooms.

"We realized there were a lot of things that needed realignment," says otolaryngologist **Sandra Lin**, who was asked to lead an effort to improve clinical efficiency in the department. "From the start we knew we weren't going to get any more space. So we asked how we could do all of our procedures and move patients through the clinic more efficiently, thereby cutting down on wait times and confusion."

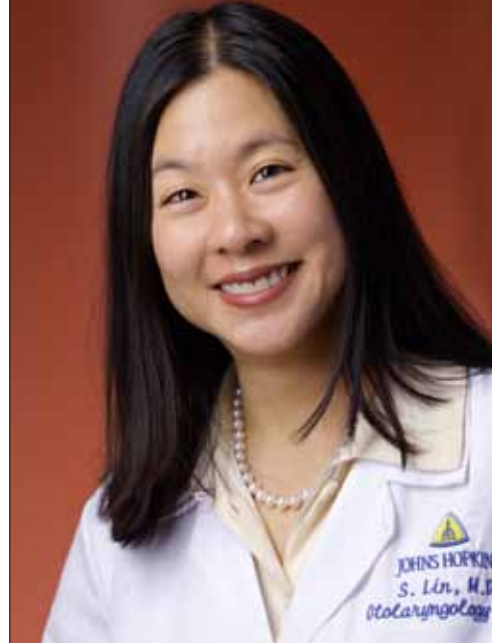
With assistance from members of Hopkins' Center for Innovation in Quality Patient Care **Julie Reh** and **Deann Gavney**, Lin set out to dissect exactly where the kinks in the system were occurring. Using what are called LEAN principles—methods originally designed and applied in the streamlining of manufacturing processes—Lin and

her group identified areas that had become prone to bottlenecks. For instance, Lin says, many patients arrived with no referrals, causing a back-up at the registration desk while they tried to right the situation. Or delays would begin while patients waited to have their stats taken at the clinic's sole vitals station before they could be taken to an exam room.

"Our primary goal became to decrease the amount of time between a patient's arrival and the moment they see a physician," Lin explains. "We worked with all of the people who were important to this, from the people who take phone calls, to nurses, to physicians, billing and administrators. We wanted to take a comprehensive approach, because we realized that if you change one thing, you ultimately affect other things as well. We wanted to avoid the kind of snafus that had put us in this position in the first place by looking at how changes can impact the big picture."

So they got to work. Among other things, the group eliminated the vitals station in favor of checking patients' stats right in the exam rooms, designated one person to deal

“OUR PRIMARY GOAL BECAME TO DECREASE THE AMOUNT OF TIME BETWEEN A PATIENT’S ARRIVAL AND THE MOMENT THEY SEE A PHYSICIAN.”



Tasked with streamlining, Sandra Lin led a successful realignment.

with patients who lacked referrals, made schedule changes so that patient service coordinators were present for peak hours, and threw out paperwork that they deemed repetitive. The process, Lin says, took only about six months—which is comparable to the speed of light in the time zone of an academic medical center. And the results, Lin says, have been impressive.

Patient wait times decreased by 12 percent, while the amount of face time patients spent with physicians increased by 21 percent. Meanwhile, the number of patients seen by a provider within 10 minutes of their scheduled appointment time nearly tripled. "We have about 30,000 patient visits every year," Lin says. "We have a lot of people who want to see our physicians and need our services, and they're important to us. By going through the clinic with a fine-tooth comb, we were able to make the changes we needed to so that we can accommodate those patients and give them and our staff a better experience." ■

HeadWay

Department of Otolaryngology–Head and Neck Surgery
601 North Caroline Street, Suite 6210
Baltimore, Maryland 21287

This newsletter is published for the Department of Otolaryngology–Head and Neck Surgery by Johns Hopkins Medicine Marketing and Communications.

Department of Otolaryngology–Head and Neck Surgery
John K. Niparko, M.D., Interim Director

Marketing and Communications
Dalal Haldeman, Ph.D., M.B.A., vice president
Lauren Glenn Manfuso, editor/writer
Maxwell Boam, designer
Keith Weller, photographer

For questions or comments, contact:
mayd@jhmi.edu or 410-955-2902

© 2010 The Johns Hopkins University and
The Johns Hopkins Health System Corporation.

CHANGE SERVICE REQUESTED

Non-Profit Org
U.S. Postage
PAID
Permit No. 5415
Baltimore, MD