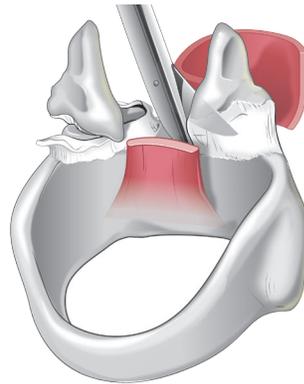


INNOVATIONS IN OTOLARYNGOLOGY – HEAD & NECK SURGERY



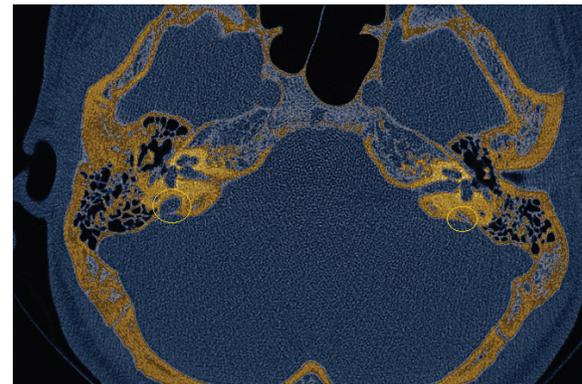
3

Researchers Focus
on Microscopic
Elements of Hearing



4 – 5

New Possibilities for
Tracheotomy Reversal



7

Demystifying Enlarged
Vestibular Aqueduct Syndrome

MACRA Changes Start Now

By Cliff Megerian, MD, Director,
UH Ear, Nose & Throat Institute



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We know there will be many changes occurring in the health care industry over the next several years. The new presidential administration has stated that repealing and replacing the Affordable Care Act is a priority.

But there is one change that we definitely know will take effect in 2017, which has been in the works for many years. That is the change brought about by MACRA (the Medicare Access and CHIP Reauthorization Act), legislation that was passed in 2015 and takes effect this year.

MACRA is considered the second most important health bill signed into law by President Barack Obama (the other being ACA), but it is unlikely to be repealed by Donald Trump and the Republican Congress. MACRA is changing the way Medicare pays doctors by tying reimbursement to quality. And many believe that it will save money and improve quality, which is why it has received bipartisan support. MACRA is considered the single largest regulation that will drive the business model for health care providers.

So how will it affect us? The law will fundamentally change how Medicare pays physicians and other clinicians who participate. It will establish two tracks for Medicare reimbursement. One is a merit-based incentive payment system (MIPS), which will affect providers who are reimbursed largely through fee-for-service. The other addresses the alternative payment model (APM) track. That second track is for physicians who take on a significant portfolio of APMs.

MACRA was designed to move physicians away from the fee-for-service approach to Medicare payments, and toward value-based medical care, which links reimbursement to an improved outcome for patients.

The implications for all providers are clear. Physicians will be measured by something they may not think about every day, but something they certainly strive for: the highest-quality patient care and the best possible outcomes. 🇺🇸

For more information from University Hospitals, visit UHDoctor.org. The UH online resource center features relevant content for physicians and other clinicians, covering clinical practice, patient care, research and education. Visit UHDoctor.org today.

INSTITUTE UPDATE

🔬 Researchers Focus on Microscopic Elements of Hearing

Martin Basch, PhD, is the newest member of the research team at University Hospitals' Department of Otolaryngology – Head & Neck Surgery.

A fundamental biologist studying embryonic development of the inner ear, Dr. Basch is investigating stria vascularis and their activity as the battery of the inner ear.

“If we’re going to regenerate cells to restore hearing, we have to understand how they’re formed in the first place,” he says. “A long-term goal is to restore hearing by regenerating and repairing stria vascularis in age-related hearing loss.”

Dr. Basch is pursuing funding from the National Institutes of Health (NIH); his fellow researchers at UH have secured NIH grants to pursue other hearing-related studies:

- **Qing Yin Zheng, MD**, is studying whether a mutant protein from a novel recessive gene induces endoplasmic reticulum stress, leading to hair cell loss and subsequent hearing loss. His studies could lead to protective therapies for Usher syndrome, autosomal recessive deafness 12 and age-related hearing loss.
- **Suhasini Gopal, PhD**, is using a zebrafish model to test the idea that the protein clarin-2 is an essential hair cell protein and its loss will result in loss of hearing and balance in vertebrates.
- **Ruben Stepanyan, PhD**, is investigating whether calcium ions released with acoustic stimulation can overwhelm hair cells, lead to cell death and result in hearing loss. Additionally, he is looking for small molecules that can protect hair cells. 📖

CAPITAL CAMPAIGN SEEKS PHYSICIAN SUPPORT

As UH concludes its 150-year anniversary celebration, the capital campaign is making a final surge toward its \$1.5 billion goal. The Ear, Nose & Throat division has been one of the largest recipients of donor funds.

“We’re reaching out to alumni and others who want to fund nonreimbursable expenses, such as education, research and mission work in other countries,” says Cliff Megerian, MD, Director of UH Ear, Nose & Throat Institute.

If you’d like to contribute to the UH capital campaign, please email Cliff.Megerian@UHhospitals.org. 📖

ENT RESIDENCY PROGRAM THRIVES

UH Ear, Nose & Throat Institute’s five-year otolaryngology – head and neck surgery residency program matches four of the nation’s top candidates each year to create a 20-person team. Additionally, the institute has one fellow training in complex head and neck oncology.

Four newly endowed chairs since 2012 provide funds for education and research. Residents have ample opportunity to research with five PhDs who are studying hearing loss and head and neck cancer. 📖

UH ENT COURSES OFFERED NATIONALLY

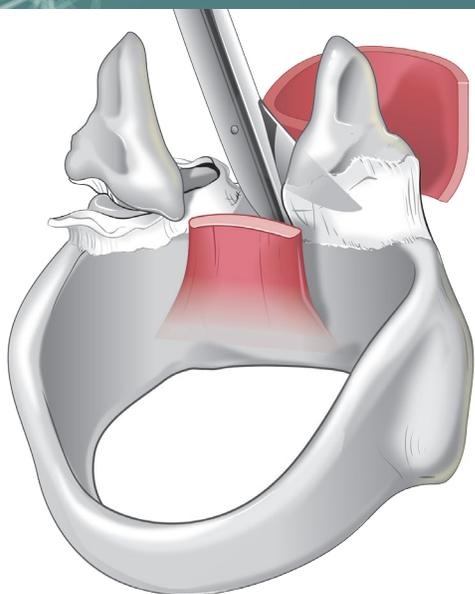
Annual, hands-on surgical training courses that combine computer simulation and cadaveric training include:

- **Microvascular Surgery for Fellows** – Free flap surgery and microvascular reconstruction training presented by UH otolaryngologists Chad Zender, MD; Rod Rezaee, MD; and Nicole Fowler, MD, in conjunction with Matthew Old, MD, of The Ohio State University Wexner Medical Center
- **Otology/Neurotology Temporal Bone** – In its 14th year, this course is taught by Dr. Megerian; Sarah Mowry, MD; and Maroun Semaan, MD
- **Anterior Sinus Skull Base Surgery** – Presented by Kenneth Rodriguez, MD, Chief of Allergy, Rhinology/ Anterior Skull Base Surgery, along with rhinologists Brian D’Anza, MD, and Nipun Chhabra, MD, and neurosurgeon Nick Bambakidis, MD

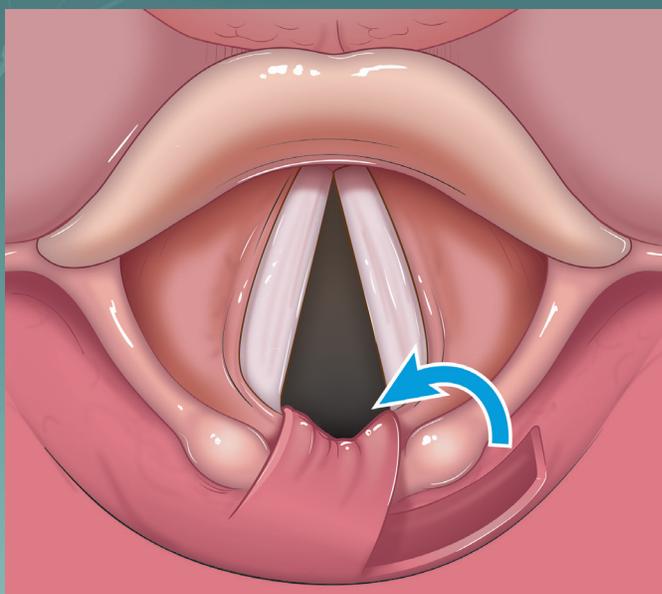
For more information, call **216-844-7435**. 📖

NEW POSSIBILITIES FOR TRACHEOSTOMY REVERSAL

Surgical technique restores normal breathing, talking in 12-year-old



Endoscopic treatment of high-grade posterior glottic stenosis. The scar between the arytenoids is incised, and the cricoarytenoid joints are circumferentially released in order to enlarge the glottic airway and establish vocal cord mobility.



In order to prevent posterior glottic restenosis a mucosal flap is elevated from the postcricoid area and the medial piriform sinus and endoscopically sutured between the arytenoids.

Prolonged intubation can cause posterior glottic stenosis with respiratory distress, presenting patients with an undesirable choice: either (1) a permanent tracheotomy to restore adequate airflow but maintain a good voice, or (2) removal of part of the vocal cords to establish an adequate glottic airway, which causes permanent hoarseness.

“Both of these procedures obviously have a significantly negative impact on quality of life,” says otolaryngologist Mark Weidenbecher, MD, of University Hospitals Ear, Nose & Throat Institute. He recently introduced a third surgical option that has allowed for the reversal of a tracheotomy and restoration of normal breathing, swallowing and phonation in an adolescent boy.

The boy was born at 25 weeks’ gestation with mild cerebral palsy. Physicians intubated him for approximately four months due to respiratory insufficiency. After extubation, he developed chronic stridor due to a posterior glottic stenosis. He was ultimately unable to maintain adequate respiration and had to undergo a tracheotomy.

As he grew, the boy could not engage in typical childhood activities such as swimming or playing outside with friends. He and his parents had seen several physicians, who gave no hope of removing the tracheostomy because of his severe posterior glottic stenosis with cricoarytenoid joint ankylosis.

When the boy reached age 12, his parents brought him to Dr. Weidenbecher for another opinion. Dr. Weidenbecher proposed a procedure to establish normal vocal cord mobility with a normal glottic airway.

CRICOARYTENOID JOINT RELEASE WITH INTERPOSITIONAL PIRIFORM SINUS MUCOSAL FLAP RECONSTRUCTION

Dr. Weidenbecher has used a novel vocal cord joint release technique with great success in nearly a dozen cases. He endoscopically removed the interarytenoid scar with a laser, while using microlaryngeal instruments to carefully incise and release the fibrotic cricoarytenoid joint capsule circumferentially, which, according to Dr. Weidenbecher, is key in establishing full vocal cord mobility.

To prevent the formation of new scar tissue that would pull the vocal cords back together, he endoscopically raised a pedicled flap from the piriform sinus, which he sutured into the posterior commissure to prevent restenosis and to maintain arytenoid mobility.

“Because it’s fresh mucosal tissue that’s not scarred or exposed to any trauma, scar tissue is less likely to form,” Dr. Weidenbecher explains.

He continues, “Patients with posterior glottic stenosis and fairly intact cricoarytenoid joint facets without bony remodeling of facet joints tend to do very well and benefit from this procedure. We are often able to establish normal vocal cord function.”

Dr. Weidenbecher performs the procedure on both adults and children. Flap procedures have been described in the past, but as Dr. Weidenbecher explains, releasing the joints from their scar and mobilizing them is an important step in this novel procedure.

A SUCCESSFUL OUTCOME

Dr. Weidenbecher’s 12-year-old patient underwent surgery without complication. He kept the tracheostomy for a few weeks while his surgical site healed, and then physicians removed the tracheostomy cannula.

“In my opinion, there are no major drawbacks to this procedure. The advantage compared to previous procedures, such as a posterior cordotomy, is that the membranous vocal cord is not affected from the surgery and patients are, therefore, not expected to be hoarse. Restoring laryngeal function and allowing patients – particularly pediatric patients – to live a normal life is very gratifying.

“Since surgery, my 12-year-old patient has been able to talk, swallow and breathe normally,” Dr. Weidenbecher says. “He is able to go swimming and play in the backyard. We were essentially able to give him back a normal life.”

Dr. Weidenbecher, Clinical Assistant Professor, Otolaryngology, Case Western Reserve University School of Medicine, specializes in larynx disorders and airway management. If you have a patient who may benefit from cricoarytenoid joint release with interpositional piriform sinus mucosal flap reconstruction, please contact Dr. Weidenbecher at **216-844-5470** for a consult. 🍷



MARK WEIDENBECHER, MD
*Laryngologist, UH Ear, Nose & Throat Institute
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Case Western Reserve University
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UH ENT INSTITUTE SERVES AS A REGIONAL REFERRAL DESTINATION

A network of ENT specialists for nearly 4 million people spreads across Northeast Ohio, from Sandusky in the west to the Pennsylvania border in the east and 65 miles south to Ashland. The University Hospitals Ear, Nose & Throat Institute includes 42 employed otolaryngologists and 25 independent ENTs in 15 practice sites, supported by 18 hospitals and more than 30 ambulatory care centers.

“We have highly trained general otolaryngologists in the community that provide a continuum of ear, nose and throat care according to consistent, well-established algorithms,” says Cliff Megerian, MD, Director of UH Ear, Nose & Throat Institute. “For complex cases, there’s a safety net of subspecialists at the main academic medical center in Cleveland.”

Subspecialties at the main medical center include:

- Rhinology/anterior skull base
- Head/neck oncology
- Pediatric otolaryngology
- Laryngology
- Otology and neurotology
- Facial plastic surgery/facial reconstruction
- Audiology and cochlear implant hearing rehab

Following a consult with a subspecialist, patients return to their primary ENT as soon as possible for ongoing care. “Patients often have long-term relationships with their primary otolaryngologist, and they’ve developed trust and comfort as they see their doctor for chronic issues such as hearing loss, voice issues, allergies or sleep conditions,” Dr. Megerian says.

To make a referral to the UH Ear, Nose & Throat Institute, call **216-844-6000**. 📞

NEW PHYSICIANS JOIN UH EAR, NOSE & THROAT INSTITUTE

Our institute team continues to expand, adding depth and breadth and allowing us to better serve our patients.

Our five new physicians are:

Nipun Chhabra, MD, formerly served as an instructor at Rush University Department of Otorhinolaryngology – Head & Neck Surgery and clinical assistant professor at the University of Illinois at Chicago. He completed fellowship training in rhinology and skull base surgery at Harvard Medical School’s Massachusetts Eye & Ear Infirmary. Dr. Chhabra did residency training in otolaryngology – head and neck surgery at University Hospitals Cleveland Medical Center and earned his medical degree from George Washington University.

Brian D’Anza, MD, completed a fellowship in advanced rhinology and skull base surgery at Cleveland Clinic and his residency in otolaryngology, head and neck surgery, and facial plastic surgery at Pennsylvania’s Geisinger Medical Center. He earned his medical degree from Loyola University in Illinois.

Carissa J. Wentland, DO, specializes in hypoglossal nerve stimulation, as well as airway disorders, chronic ear disease and hearing loss in children. She completed fellowship training in pediatric otolaryngology at Harvard Medical School’s Massachusetts Eye & Ear Infirmary. Dr. Wentland completed her residency in otorhinolaryngology and facial plastic surgery at Michigan State University and earned her DO from A.T. Still University and Kirksville College of Osteopathic Medicine.

Sarah E. Mowry, MD, FACS, has special interests in middle fossa surgery, cochlear implant surgery, quality of life outcomes, clinical predictors of tympanoplasty success and chronic otitis media in the elderly. She did a fellowship in neurotology at the University of Iowa and completed her residency in otolaryngology at the University of California, Los Angeles. Dr. Mowry earned her medical degree from Tulane University.

Turker Yilmaz, MD, MS, has both his MD and a master’s in audiology and speech pathology from Hacettepe University Medical School in Ankara, Turkey. He was a resident in otolaryngology – head and neck surgery there and has completed fellowships at M.D. Anderson Cancer Center, Children’s Hospital of Michigan and St. Elizabeth’s Medical Center in Boston. 📞

Demystifying Enlarged Vestibular Aqueduct Syndrome

New national EVA patient registry will clarify prognosis, identify risk factors for EVA-related hearing loss

It's a clinical conundrum: An enlarged vestibular aqueduct (EVA) is the most common inner ear malformation linked to sensorineural hearing loss in children. Yet pediatric otolaryngologists know relatively little about how and why EVA syndrome progresses to hearing loss – and which interventions might stop the process. Some patients develop profound hearing loss, while others do not – a difference seemingly unrelated to the size of the EVA.

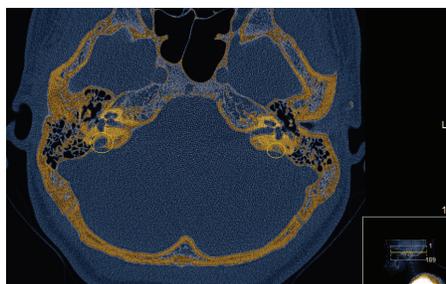
“Much of what is known about EVA syndrome comes from small studies of fewer than 100 people,” says Todd Otteson, MD, MPH, Division Chief of Pediatric Otolaryngology at University Hospitals Rainbow Babies & Children’s Hospital. “Because of this, there’s a lack of reliable information we can give patients and families about how much hearing loss will occur and how it will – or will not – progress.”

To further complicate things, there’s also controversy about events that may exacerbate the progression of EVA-related hearing loss. Although some studies point to minor head trauma as an exacerbating factor, others have found no association.

At UH Rainbow Babies & Children’s Hospital, Dr. Otteson and otolaryngology colleagues from the UH Ear, Nose & Throat Institute are working to shed light on this problem with a new, national EVA patient registry. Parents of children diagnosed with EVA are invited to complete a detailed online questionnaire featuring several open-ended questions

that encourage them to describe their child’s experiences.

Items cover when and how the child was diagnosed with hearing loss, if and how the loss has progressed, and whether the child has received any treatment for EVA-related hearing loss, such as steroids. Also included are questions on any family history of hearing loss or EVA syndrome and the child’s history of airplane flights, head trauma, vertigo symptoms and use of assistive services or devices, such as speech therapy, hearing aids or cochlear implants. Parents can also upload hearing test results and CT and MRI scans directly to the site.



This CT scan shows a patient with an enlarged vestibular aqueduct (EVA) within the right inner ear (left on this image). Note the difference in size of the enlarged vestibular aqueduct circled in yellow on the left of the image, as compared with the normal vestibular aqueduct on the right.

“This registry will help address fundamental questions regarding EVA, such as radiological definition, the safety of pressure changes that accompany airplanes or swimming, the expected progression of hearing loss over time and the correlation of hearing loss to vestibular width,” Dr. Otteson says. “Such questions remain controversial,

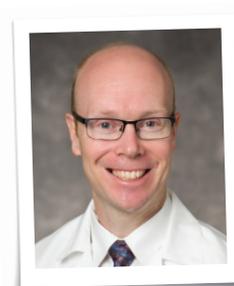
and this large, centralized repository of patient information will advance our current understanding.”

Dr. Otteson and his otolaryngology colleagues at the UH Ear, Nose & Throat Institute plan to make the EVA patient registry data available to otolaryngology researchers at other institutions who present study proposals approved by their institutional review boards (IRBs).

“This is one of those areas where collaboration is vital,” he says.

“By collecting this data from patients across the U.S., we hope to identify those events and modifiable risk factors that can be monitored, with the goal of slowing or stopping the progression of EVA-related hearing loss.”

To learn more about the UH Rainbow Babies & Children’s EVA patient registry, go to Rainbow.org/EVAResearch or ClinicalTrials.gov/show/NCT02798783, or email Todd.Otteson@UHhospitals.org or EVA Project Manager Mustafa.Ascha@UHhospitals.org.



TODD OTTESON, MD, MPH

*Division Chief, Pediatric Otolaryngology, UH Rainbow Babies & Children’s Hospital
Associate Professor of Otolaryngology and Pediatrics, Case Western Reserve University School of Medicine*

UH rhinologists tackle complex nasal, sinus and anterior skull base cases

University Hospitals' three fellowship-trained rhinologists welcome referrals for several complex conditions and procedures, including:

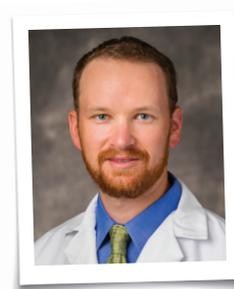
- Endonasal removal of pituitary tumors or tumors along the anterior skull base, and reconstruction of damaged areas
- Repair of cerebrospinal fluid leaks using tissue within the nose, for either a primary leak or a leak secondary to tumor removal or trauma
- Difficult, chronic rhinosinusitis cases, including nasal polyps; many of these patients have asthma, sensitivity to aspirin, a restricted airway or scarring from previous sinus procedures
- Benign and malignant nasal tumors such as squamous cell carcinomas, inverted papillomas and osteomas, and mucoceles
- Septoplasty and inferior turbinate reduction to decrease nasal obstruction
- Endoscopic work on chronic tear duct blockage or chronic tearing
- Intraorbital biopsies that are difficult to reach
- Endoscopic orbital decompression for Grave's ophthalmopathy
- Vasomotor rhinitis and chronic nasal drainage, including surgical and medical management

"We combine both leading-edge medical and surgical aspects of care for people and have helped many who have otherwise failed with treatment by a general ENT," says Brian D'Anza, MD, a rhinologist at University Hospitals Cleveland Medical Center.

Because incisions can be made entirely within the nasal and sinus cavities, recovery time and discomfort after procedures are significantly less than with previous techniques.

UH rhinologists frequently collaborate with other experts at UH, including neurosurgeons, ophthalmologists, head and neck surgeons, and otologists. A monthly skull base multidisciplinary conference and head and neck tumor board provide opportunities for discussion of difficult cases. The rhinologists also work with the LeRoy W. Matthews Cystic Fibrosis Care Center at UH to help CF patients who have nasal and sinus complaints.

To refer a patient, please call **216-844-5037** or email **Brian.D'Anza@UHhospitals.org**.



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