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MINUTES OF THE EXECUTIVE SESSIONS

REPORT OF THE SECRETARY

The membership prior to the April 2013 election included 146 Active members, 65 Emeriti members, 50 Corresponding members, 2 Honorary members, 6 Associate members and 47 Post-Graduate Members for a total membership of 319 Fellows and members.

Drs. Peter Belafsky and Michael Johns II were elected to Active Fellowship; Dr. Tack-Kyun Kwon was elected to Corresponding Fellowship and Drs. Robert Bone, Rinaldo Canalis, Willard Fee, Gerald Healy, and Eiji Yangisawa were elected to Emeritus status. Sixteen Post-Graduate Members, Drs. David Lott, Julina Ongkasuwan, Pavan Mallur, Joel Portnoy, Apurva Thekdi, Melin Tan, VyVy Young, Richard McHugh, Lowell Gurey, Neil Prufer, Joshua Silverman, Paul Pryson, Catherine Sinclair, Amanda Hu, and Michele Morrison were added to the roster.

After election of the nominees, the 2013 roster reflects 146 Active members, 68 Emeriti members, 51 Corresponding members, 2 honorary members, 9 Associate and 62 Post-Graduate members, for a total membership of 338 Fellows and members.

These totals also reflect that we were notified that 3 members who passed away prior to this report.

Dr. Har-El reported that proposals for two By-laws amendments were presented to the Membership during the first Business Meeting. They included one amendment pertaining to procedures used to select the Nominating Committee and the selection process of its members. The second amendment modified the criteria for qualification for post-graduate candidates. Both amendments were approved by the Membership.

Dr. Har-El provided an update to the COSM footprint for future meetings. He reminded the Fellowship that during the Second Scientific Session, there will be several podium presentations from members of the European Laryngology Society (ELS) and he encouraged everyone to attend.

Respectfully submitted,
Gady Har-El, MD, Secretary

REPORT OF THE TREASURER

The Treasurer’s report and financial statements were prepared by the ACS. The Treasurer stated that the relationship with the ACS continues to be successful.

Dr. Altman reported that the finances of the Association continues to show some improvement from previous years. The investment portfolio continues to experience growth. The Association continues to receive revenue from the Laryngoscope. The major source of continuing income is members’ dues. The remittance of dues improved for 2013 although there are members who remain delinquent. Our Administrator has reviewed those who are delinquent and the Council approved an action plan to encourage those fellows who are delinquent to bring their memberships current. As Treasurer, I encourage each fellow to pay any delinquent amount so his/her membership remains in “good standing.” The Council continues to maximize the Association’s assets by controlling expenditures while maintaining the high level of services for the fellowship.

The Council reduced expenses by scheduling the Winter Council Meeting during the TRIO Sectional meetings.

Although finances are stable, the greatest need still exists for additional funding resources. Dr. Altman reported that Prodigy has performed well with investments. The Sustainers’ Fund continues to receive contributions but the goal has not been met in several years. He reiterated that donations are vital to the Association’s educational and research efforts by becoming involved and become a member of the Sustainers’ Fund.

Respectfully submitted,
Kenneth W. Altman, MD, PhD
Treasurer
REPORT OF THE EDITOR

Transactions
Dr. Courey reported that the 2012 Transactions were compiled and uploaded on the website and positive feedback pertaining to the accessibility of the electronic copies continues to be received from Fellows. Hard copies may be printed by members or you may contact the Administrator if you experience difficulty in printing a copy.

ALA Website
The traffic during the past year has increased dramatically. Visits to the site continue to rise and multiple search engines are being used. The majority of visits were from the United States with others from Asia, South America, and the UK.
He informed everyone that the user name of each Fellow is that person’s first initial and last name. You may request a temporary password via the website or by contacting the Association’s Administrator. Dr. Courey requested everyone to access the site and update his/her profile with the accurate email address. This will allow the distribution of email blasts to increase.

Publication
Dr. Courey reported there was a significant increase in the number of abstracts submitted from the 2013 annual meeting. Again, the number of high quality manuscripts from the 2012 Annual Meeting were published. This rate also includes some manuscripts that originally were submitted for a poster presentation. The quality of abstracts continue to be of excellent quality that also provide some highly rated posters. The authors of each is to be commended.

Respectfully submitted,
Mark S. Courey, MD
Editor

REPORT OF THE HISTORIAN

Dr. Ossoff reported that he was notified of the passing of two Emeriti fellows since the 2012 annual meeting. After presenting a brief obituary for each deceased fellow. Dr. Ossoff requested the observation of a moment of silence on memory of Dr. John R. Ausband and Dr. Charles J. Krause.

Respectfully submitted,
Robert H. Ossoff, DMD, MD, CHC
Historian
RECIPIENTS OF THE DE ROALDES AWARD

1928 Chevalier L. Jackson  
1931 D. Bryson Delavan  
1934 Harris P. Mosher  
1937 Lee Wallace Dean  
1943 Ralph A. Fenton  
1949 George M. Coates  
1951 Arthur W. Proetz  
1954 Louis H. Clerf  
1959 Albert C. Furstenberg  
1960 Dean M. Lierle  
1961 Frederick T. Hill  
1966 Paul H. Holinger  
1970 Francis E. LeJeune  
1973 Lawrence R. Boies  
1976 Anderson E. Hilding  
1979 Joseph H. Ogura  
1982 John J. Conley  
1985 John A. Kirchner  
1985 Charles M. Norris  
1987 Walter P. Work  
1988 DeGraaf Woodman  
1989 John F. Daly  
1990 Joseph L. Goldman  
1991 William W. Montgomery  
1992 M. Stuart Strong  
1993 Douglas P. Bryce  
1994 Paul H. Ward  
1995 Hugh F. Biller

RECIPIENTS OF THE CASSELBERRY AWARD

1923 George Fetterolf  
1928 Ralph A. Fenton  
1929 Richard A. Kern  
1929 Edward H. Campbell  
1931 Arthur W. Proetz  
1934 Anderson C. Hilding  
1936 Francis E. LeJeune  
1939 H. Marshall Taylor  
1940 French K. Hansel  
1941 Noah D. Fabricant  
1946 Paul H. Holinger  
1949 Henry B. Orton  
1962 Hans von Leden  
1966 John A. Kirchner  
1968 Joseph H. Ogura  
1985 H. Bryan Neel III  
1987 Joseph J. Fata  
1991 James L. Koufman  
1993 Frank E. Lucente  
1994 Ira Sanders

RECIPIENTS OF THE NEWCOMB AWARD

1941 Burt R. Shurly  
1942 Francis R. Packard  
1943 George M. Coates  
1944 Charles J. Imperatori  
1947 Harris P. Mosher  
1948 Gordon Berry  
1949 Gordon B. New  
1950 H. Marshall Taylor  
1951 John D. Kernan  
1952 William J. McNally  
1953 Frederick T. Hill  
1954 Henry B. Orton  
1955 Thomas C. Galloway  
1956 Dean M. Lierle  
1957 Gordon F. Harkness  
1958 Albert C. Furstenberg  
1959 Harry P. Schenck  
1960 Joel J. Pressman  
1961 Chevalier L. Jackson  
1962 Paul H. Holinger  
1963 Francis E. LeJeune  
1964 Fred W. Dixon  
1965 Edwin N. Broyles  
1966 Lyman G. Richards  
1967 Joseph H. Ogura  
1968 Walter P. Work  
1969 John A. Kirchner  
1970 Louis H. Clerf  
1971 Daniel C. Baker, Jr  
1972 Alden H. Miller  
1980 Charles M. Norris  
1981 Stanton A. Friedberg  
1982 William M. Tribe  
1983 Harold G. Tabb  
1984 Daniel Miller  
1985 M. Stuart Strong  
1986 George A. Sisson  
1987 John S. Lewis

1996 Byron J. Bailey  
1997 George A. Sisson, Sr.  
1998 Stanley M. Blaugrund  
1999 Jerome C. Goldstein  
2000 Thomas C. Calcaterra  
2001 Eugene N. Myers  
2002 Robin T. Cotton  
2003 Gayle E. Woodson  
2004 Robert H. Ossoff  
2006 Stanley M. Shapshay  
2007 W. Frederick McGuirt, Sr.  
2008 Robert T. Sataloff  
2009 Andrew Blitzer  
2010 Marshall Strome  
2011 Gerald Healy  
2012 Robert T. Sataloff  
2013 James L. Nettenville
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**RECIPIENTS OF THE GABRIEL F. TUCKER AWARD**

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<td>2005</td>
<td>William P. Potsic</td>
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<td>Robin T. Cotton</td>
<td>2006</td>
<td>Amelia F. Drake</td>
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<td>Haskins K. Kashima</td>
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<td>Seth Pransky</td>
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**RECIPIENTS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION AWARD**

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**RECIPIENTS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION RESIDENT RESEARCH AWARD**

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<td>Alex J. Correa</td>
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<td>2000</td>
<td>James C. L. Li</td>
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<td>Andrew Verneuil</td>
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<td>Saman Naficy</td>
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<td>Michael E. Jones</td>
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16
RECIPIENTS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION
YOUNG FACULTY RESEARCH AWARD

1991  Paul W. Flint
1992  Yasuo Hisa
1993  Jay F. Piccirillo
1994  Hans J. Welkoborsky
1995  Nancy M. Bauman
1997  Ira Sanders
1998  Kiminori Sato
2000  Steven Bielamowicz
2001  John Schweinfurth
2005  Dinesh Chhetri
2006  Suzy Duflo
2007  Tack-kyun Kwon
2008  Bernard Rousseau
2009  Tsunehisa Ohno
2010  I-Fan Theodore Mau
2011  David Francis
2012  Mika Nomoto
2013  Seung Won Lee
THE MEMORIAL AND LARYNGOLOGICAL RESEARCH FUNDS

The Council earnestly requests that Fellows of the Association give consideration to making a special bequest to these important funds, or to becoming a Benefactor.

MEMORIAL FUND DONORS

Daniel C. Baker, Jr  George Fetterolf  Lyman G. Richards
John F. Barnhill  Joseph L. Goodale  Myron J. Shapiro
August L. Beck  William E. Grove  Burt R. Shurly
Gordon Berry  Gordon F. Harkness  Mark I. Singer
Stanley M. Blaugrund  Frederick T. Hill  Lester T. Sunderland
William E. Casselberry  George E. Hourn  H. Marshall Taylor
Cornelius G. Coakley  Samuel Johnston  Walter H. Theobald
Lee Wallace Dean  John S. Lewis  John A. Tucker
Arthur W. De Roaldes  H. Bryan Neel III  Francis L. Weille
Fred W. Dixon  James E. Newcomb  Eiji Yanagisawa
Charles F. Ferguson  Henry B. Orton

BENEFACTORS

Sally Sample Aall  Thomas C. Galloway  Harry P. Schenck
Mrs Daniel C. Baker, Jr  Joseph L. Goldman  Oliver W. Suehs
Edwin N. Broyles  Robert L. Goodale  William M. Tribe
Louis H. Clerf  Edley H. Jones  Gabriel F. Tucker, Jr
Seymour R. Cohen  A. P. Marchessini  DeGraaf Woodman
John J. Conley  Francis H. McGovern  Zelda Radow
John F. Daly  Charles M. Norris  Weintraub Cancer Fund, Inc
Francis W. and Mrs Davison  Samuel Salinger
Stanton A. Friedberg  Sam H. Sanders
PRESIDENT’S WELCOME

Clarence T. Sasaki, MD
New Haven, Connecticut

Good morning, everyone. Let me welcome you all to the 134th Annual Meeting of the ALA. Over the past 134 years, this Senior Society has contributed importantly to the foundation of our greater specialty by attracting the most capable clinicians and scientists into its membership. Because entry into our Association is in a sense gated in number and by achievement, it is too often regarded as an “elite honor society” when in fact we are indeed a “working society” with a singular purpose of enabling, promoting and directing laryngological contributions to the world of American Medicine.

The focus of my Presidency has been to formally recognize our legacy and definitively promote our ongoing efforts to reextend our influence across our field. We are fortunate this year to have been given a platform to interact with our colleagues in the ABEA and the ELS with whom we shall share a common scientific meeting. What better opportunity is there to jointly influence the field?

To promote our legacy as a “working society” I have invited Dr. Marvin Fried to serve as my Guest of Honor and to provide a cogent reminder of the ALA’s important contributions over the years in a presentation entitled “The American Laryngological Association: Its Legacy in American Medicine”.

Those of us who have been around for a while fully appreciate the emotional effort and intellectual equity needed to program a first rate panel discussion. So, will all be forgotten once the microphones are shut off?

To avoid lost opportunity, Dr. Gady Har El and Dr. Lucian Sulica will prepare their respective panel discussions for peer review and possible publication in the Laryngoscope, the former Panel entitled “Advanced Laryngeal Cancer” and the latter on “Neurogenic Cough”.

Drs. Babak Sadoughi, Andrew Blitzer, Lucian Sulica and Marvin Fried will in a sense challenge the contested AAO Hoarseness guidelines by presenting a transatlantic survey of experts in the form of a podium presentation also eligible for publication in Laryngoscope as will a manuscript entitled “Discussion of Evidence-Based Guidelines” represent an important initiative of our Council.

Thanks to the Editorial Staff of the Laryngoscope, the Baker Lecture itself, unlike in years past, will be peer reviewed for publication in our official Journal.

So, in my mind, these publishable efforts will better sustain our science and will remain some of the most important mechanisms to extend the enduring influence of the ALA in growing our field across American Medicine.
Let me extend a special thanks to our Council for supporting me both administratively and scientifically. My special appreciation extending to our Secretary, Dr. Gady Har-El who agreed to serve as my Program Chair years before we knew he would be simultaneously asked to assume duties as our Council’s Secretary. I have known Dr. Har-El for many years and instinctively believed he would accomplish the impossible with great dedication and distinction.

Finally, I thank you, our Membership, for the privilege of serving as your President and for the opportunity to welcome you to our scientific meeting this morning.
PRESIDENTIAL CITATIONS

Clarence T. Sasaki, MD
New Haven, Connecticut

One of the privileges given to Presidents of the ALA is the honor of bestowing Presidential Citations to those whose lives have made a difference. The following individuals have, in some manner or another, impacted my career and/or life:
Presidential Citations

Andrew Blitzer, MD, DDS
New York, NY

First, let me introduce to you Dr. Andrew Blitzer who preceded me both as ABEA President and President of the American Laryngological Association. Through the years, Andy and I have co-authored text books, manuscripts and shared in important research.

In his role as Director of the New York Center for Voice and Swallowing Disorders, he has influenced thousands of students, trainees, and colleagues and as Principle Investigator on NIH grants. And, as an NIH Study Section Member, he has quietly but importantly re-directed the focus and scope of basic and clinical research in Laryngology. Andy, we salute your significant accomplishments and contributions to our field. Please welcome a very good friend of our Society, Dr. Andrew Blitzer.

Daniel Brasnu, MD
Paris, France

Dr. Daniel Brasnu is not only Professor of Otorhinolaryngology at the School of Medicine Paris Rene Descartes, but also serves his University as Vice Dean of the School of Medicine. He has gained a worldwide reputation as a Head & Neck Surgeon with particular interest in cancer of the larynx. He has been an invited speaker globally while serving on the Editorial Boards of our most prestigious journals. Dan is a founding member and President of the Franco-Israeli Association of Otolaryngology. His many contributions continue to influence the way we view conservation laryngeal surgery.

Please welcome our good friend, Professor Brasnu from Paris, France.
I first met Dr. Har-El in Brooklyn, New York in the early 1990’s when I visited his Department as an invited Grand Rounds speaker. He was a junior faculty member at SUNY Brooklyn at the time. But I sensed in a moment that this young man would emerge as a leader of his Department and eventually, as he has demonstrated, a leader in our field. Gady was born and educated in Israel leaving his homeland in 1986 essentially to re-do his residency in NY. He has published extensively in our Journals, serving now as the Chair of Otolaryngology at Lenox Hill Hospital in New York and Professor of Otolaryngology and Neurosurgery at SUNY – Downstate.

During our sequential Presidential terms on the ABEA Council, I came to respect Gady’s masterful organizational talents and negotiating skills. Serving as your President with Gady, as our Secretary this year, gives me great comfort and sense of security that his skills will strengthen the infrastructure and stability for the future growth of our great Society. Please welcome Dr. Har-El.
Dr. Steffen Maune first visited me in New Haven in the 1990’s accompanied by his student, Jens Meyer, who had just completed his post doctoral rotation in one of our labs. It was at a time when endoscopic laser surgery found unprecedented growth in Germany.

Dr. Maune grew up in Potsdam, East Germany in the 1960’s escaping to the West to continue his academic growth there. In spite of the stigma associated with his origins, Steffen rose to Vice Chair at the University of Kiel under the great Professor Heinrich Rudert.

And so at that initial meeting over several glasses of wine and beer at Mory’s Tavern in New Haven, he offered to tutor me in the surgical methods developed by his boss, Professor Rudert - methods I believed were less aggressive and more philosophically conservative than the prevailing techniques we came to hear about from Germany. Out of this introduction, I learned the Rudert rules of endoscopic laser surgery and Dr. Maune benefited by an open exchange program for his students to our labs. Since then, Dr. Maune has moved on to assume the Chairmanship of Otolaryngology at the Municipal Hospital in Cologne.

Please welcome my good friend, Professor Steffen Maune of Cologne, Germany.
Dr. William Richtsmeier and I have known each other for most of our careers and I know and love his family as my own. His wife Mickey, my wife Carolyn and Rita Fried know their way around some of the best shops in New York. But these aren’t the reasons I asked Bill to join the short list of citations. Dr. Richtsmeier completed his residency at the University of Virginia, served as Chief of Head & Neck Oncology at John Hopkins where he occupied the John Bordly Chair before taking the position of Professor and Chief at Duke University Medical Center.

He now leads the Head & Neck Section at Bassett Hospital in Cooperstown, New York and is best known for his contributions to the immunology of Head & Neck Cancer.

How one of his perhaps minor contributions helped to generate a mind changing effect regarding Laryngologists in American Medicine is perhaps lesser known. In 1996, Scher and Richtsmeier published their experience with endoscopic repair of Zenker’s Diverticulum and with that, provided the first effective and safe method of managing a condition previously fraught with potential hazard, in fact so much so that internists and gastroenterologists would rather have withheld treatment than referred to us for care. Bill changed all of that with a global acknowledgment that Laryngologists who can safely care for Zenker’s deformities can also care for pharyngeal dysphagia in general.

In my recollection, that single contribution historically served to bring the diagnosis and management of pharyngeal dysphagia squarely and securely into the realm of clinical and research Laryngology.

Please welcome Dr. William Richtsmeier who is a wonderful friend of mine and an accomplished friend of this Association.
President Citations

Kiminori Sato, MD, PhD
Kurume, Japan

We all know and love Professor Kiminori Sato who proudly wears the legendary Kurume University banner, ably representing his illustrious Department now synonymous with the very best in investigative and clinical Laryngology.

Dr. Sato rose through the ranks at Kurume where he was influenced by his illustrious Professor Minoru Hirano, Professors Yoshida and Tadashi Nakashima. Like many of his Japanese colleagues here today, Dr. Sato has presented and published extensively in American Journals. He is the force behind the authoritative textbook: “Histological Atlas of the Human Larynx,” while his descriptive and functional histologic investigations have earned him both the Seymour Cohen Award from the ABEA and the Casselberry Award from the ALA.

Please welcome Professor Kiminori Sato of Kurume, Japan.
Dr. Marshall Strome is Director of the Center for H&N Oncology and Transplantation of the Roosevelt St. Luke’s Hospital in New York and is the immediate Past Professor and Chair of the Cleveland Clinic H&N Institute. Marshall and I share overlapping interests in pampering our Porsche cars and selected fine arts but our relationship runs deeper than that. I am forever lifted by his academic enthusiasm, his love of his family and devotion to his children and grandchildren.

Dr. Strome is the recipient of more than 50 awards and honors. As you know he served as Vice President of the Triological Society, President of SUO, President of the N.Y. Laryngological and President of our ALA.

He is perhaps best known for the world’s first total composite human larynx transplant. The science necessary for this achievement had the unprecedented effect of focusing the undivided attention of American Medicine onto our field and, in my opinion, importantly helped to establish the scientific credibility of our specialty.

Please welcome our good friend, Dr. Marshall Strome.
INTRODUCTION OF THE GUEST OF HONOR

Marvin P. Fried, MD

Bronx, NY

Clarence T. Sasaki, MD

It is with the greatest respect and honor that I now introduce to you our Guest of Honor, Dr. Marvin Fried. I first met Marvin in 1977 when Dr. Kirchner brought him by the Larynx Lab at Yale during one of my laryngeal physiology experiments. Although I regretted that Dr. Fried did not elect to join our faculty at that time, I continued to correspond with him as we came to share in our mutually overlapping research efforts. As it turned out, he served as Co-Principal Investigator on one of my NIH grants as I did on his.

Early on, Dr. Fried invited me to present a CPC for the New England Journal of Medicine and although I totally missed the diagnosis in what I remember as one of the most embarrassing moments of my life, I took his invitation as a signal of a growing trust and friendship.

Dr. Fried trained with the legendary Joe Ogura. He rose through the ranks at Harvard being named Professor at Harvard and now serves as Professor and Chair at Albert Einstein Montefiore Medical Center.

He serves on the Editorial Boards of our best journals and has been elected President of the American Rhinological Society, the NY Laryngological Society and our American Laryngological Association.

On a personal note, I confess our mutual affinity for good wine and food has taken us on many an expensive vacation trips together but what has done more to seal our friendship is the mutual friendship our wives have come to enjoy. Carolyn and Rita are virtually inseparable.

Please welcome a very good friend of this Association, Dr. Marvin Fried.
GUEST OF HONOR PRESENTATION
Marvin P. Fried, MD
Bronx, NY

American Laryngological Association: Its Legacy in American Medicine

President Sasaki, Fellows of the American Laryngological Association, members of the American Bronchoesophagological Association and European Laryngological Society and Guests, I am sincerely grateful to be the Guest of Honor for the 134th meeting of the ALA and most particularly during the presidency of Dr. Clarence Sasaki. The ALA gathers here as it has done since 1878 to bring together the finest laryngologists in the United States and at this extraordinary meeting, with colleagues from the ABRA and the ELS, a first for us all. I do believe that this is a very appropriate occasion to reflect on the special history of the ALA and what it and its fellows have contributed to our specialty and to medicine on a global level.

Being a New Yorker, born and raised, sojourning in Boston for over two decades and now back to my roots, it seems best to look back at the origins of the ALA and to the year 1873 when a group of New York physicians gathered at the home of Dr. Clinton Wagner to form the first society in the world devoted exclusive to the study of laryngology and rhinology. I find this of particular interest to me as I view myself as a rhinolaryngologist, and a past Secretary and President of both the American Rhinologic Society and the ALA. Dr. Wagner was born in Baltimore whose family were early settlers in Maryland. Dr. Wagner fought in the Civil War as saw action at Gettysburg and Little Round Top, one of the fiercest and most critical battles of the war. After the war he travelled to Europe and some of its great centers of learning, Berlin, Vienna and London. He returned to New York in 1873 and established the Metropolitan Throat Hospital, the first of its kind in America. The first NYLS organizing meeting was attended by George Lefferts, Frank Bosworth, Morris Asch, Woosley Johnson, Horatio Bridge, Charles McBurney who would be noted for describing McBurney’s point of appendicitis), Francis Kinnicutt, Mathew Mann and Robert Weir. Dr Weir was the first NYLS President and became Professor of Surgery at Columbia College of Physicians and Surgeons and one of the first surgeons to introduce Listerian principles of surgery in America. All of the men gathering on October 13th, had spent considerable time in Europe and held positions at local clinics for diseases of the throat. They were enthusiastic about their new specialty and teaching it to others. Honorary fellows of the NYLS were Jacob Solis-Cohen of Philadelphia, Charles Fauvel of France, Morrell MacKenzie of England, and Karl Stoerck and Leopold von Schroetter of Vienna. Thus the ties across the Atlantic were established quite early. New York was also the home of Dr. Horace Green who developed an interest in the larynx as early as 1832 and is known as the “Father of Laryngology” as well as Dr. Gordon Buck who was the first to expound upon intralaryngeal surgery and performed the first successful laryngofissure in 1864.

The American Laryngological Association had its inception in the mind of Dr. Frank H. Davis of Chicago who circulated a letter proposing a national organization to colleagues. The organizing meeting took place on June 3, 1878 at the Tifft Hotel in Buffalo New York, with Dr. Louis Elsberg elected the first president. Six of the founding members were from New York. It was decided that a Fellow of the ALA be a physician knowledgeable in the disease of the upper airway and chest and skilled in examination of the larynx as taught originally by Manuel Garcia, Johann Czermak and others. Dr Elsberg was born in Germany and attended the first class held by Czermak in laryngology. He then came to New York, established a practice exclusively in laryngology and the first instruction in the specialty that was held at New York University Medical School. Dr. Solis-Cohen attended the Inaugural meeting of the
ALA. He was acknowledged as the leader of American Laryngology, until he died in 1927 at nearly 90 years of age. He was a skilled surgeon, focusing much of his efforts on laryngeal cancer and successful laryngectomies. Dr. Samuel Gross, one of the most noted surgeons of the day, commented that he could not understand a physician being interested in one cubic centimeter of the human body and for a time Dr. Solis-Cohen was denied membership to the Philadelphia Academy of Natural Sciences. Solis-Cohen was a prolific writer and teacher as well as a civic and religious leader.

Early ALA Fellows included Dr. Ephraim Cutter who became the first chief of laryngology at the Massachusetts General Hospital and his protégé, Dr. Franklin Hooper who had a similar appointment at the Boston City Hospital and began experiments on laryngeal physiology at Harvard Medical School.

Chevalier Q. Jackson, a President of the ALA, advanced laryngology and bronchoesophagology like no one before and perhaps since. Not only did he devise the instrumentation needed for upper aerodigestive endoscopy, but also the safe techniques to be employed and spent his lifetime teaching to others. His work on retrieval of foreign bodies in children remains as a landmark achievement. He held chair positions at five Philadelphia medical schools. Besides his renown as an endoscopist, he was known for his work in precancerous laryngeal lesions and laryngeal surgery. And in 1917 he founded the ABEA.

In the decades that followed, many noted ALA members contributed to the advancement of our specialty in the United States and worldwide. Among these notables were Chevalier L. Jackson, Louis Clerf, Gabriel Tucker, Senior and Junior in Philadelphia all following in the endoscopic footsteps of Dr. Jackson. Harris Peyton Mosher was the exemplary laryngologist in Boston, having established the “Mosher Course” at Harvard to teach Otolaryngic anatomy. Dr. Mosher was president of the ALA. The ABEA, the Triologic Society, the American Academy of Otolaryngology and Ophthalmology and the American Otologic Society. He was the first American to deliver the Semon Lecture at the Royal British Medical Society. He received the de Roaldes and Newcomb Awards from the ALA.

At Johns Hopkins, Dr. Samuel Crowe was asked by Dr William Halsted to form the first Department of Laryngology and Otology and trained Edwin Broyles who contributed telescopes to endoscopy and defined the laryngeal ligament that bears his name.

In New Orleans, Dr. Robert Lynch developed the suspension system for laryngoscopy after his return from Vienna where he studied under Drs. Gustave Killian and Francis LeJeune developed color motion pictures of the larynx.

The list can go on and on, but I tried to highlight the early contributions that Fellows of the ALA have made to otolaryngology and medicine. I would however like to mention in particular those who mentored me throughout my career. It probably started with Drs. Werner Chasin and Collin Karmody at Tufts Medical School. My interest in laryngology and head and neck surgery was implanted by Drs. Joseph Ogura and Hugh Biller, two exemplary surgeons and teachers and who were innovators in conservation surgery for treatment of laryngeal cancer. Drs. Stuart Strong, Charles Vaughan and Geza Jako at Boston University who were the pioneers in devising the application of the carbon dioxide laser to laryngeal surgery as well as the instrumentation and procedures that we still use now. Drs. Daniel Miller and William Montgomery, two of the finest head and neck surgeons of the twentieth century, helped me early in my tenure at Harvard and were my mentors for my Triologic thesis which was awarded the Fowler Prize for Basic Research. Drs. Eugene Myers, Gerald Healy and Robert Ossoff who are passionate in their efforts and support of the ALA, helped and guided me during the time I was Secretary and President of this auspicious Association. Their contributions in the care of patients with head and neck
Guest of Honor Presentation

cancer, pediatric diseases and voice dysfunction have helped people throughout the world. To Drs James Kelly and Marshall Strome, I am eternally grateful for their friendship, advice and support. As you all know, Dr. Strome performed the first long term successful laryngeal transplant. Dr. Daniel Brasnu, one of the foremost head and neck cancer surgeons in Europe and who helped perfect and popularize innovations in laryngeal function preservation, showed me the potential of collaboration and teaching across borders and continents.

This brings us to our current President, Dr Clarence T. Sasaki, truly the exemplary physician, scientist and to me, one of my closest friends. Dr. Sasaki was born in Hawaii and come to the mainland for college at Pomona, graduating Phi Beta Kappa. He received his doctorate in Medicine at Yale Medical School. After his internship at University of California, San Francisco, he served in the US Army as a Captain in the Medical Corps, stationed for a year in Da Nang, Vietnam and then as Major at Fort Ord, California. He was a resident in Otolaryngology at Yale and essentially spent his entire medical career in New Haven except for sabbaticals in Europe with Dr. Ettore Bocca to learn the functional neck dissection, with Dr. Ugo Fisch to study the techniques of skull base surgery and in London with Mr. Dai Davies for improving skills in plastic and reconstructive surgery. Thus in his own life experiences, Dr. Sasaki has emulated the Founders of the ALA in traveling abroad to incorporate the best from outside America to bring back to his own practice and to teach others. He is the premier head and neck surgeon in his state and one of the finest in the US northeast and the busiest surgeon at Yale, even after stepping down as Chief of his Division after 30 years in that position. He continues to lead the Larynx Physiology Laboratory at Yale and has recently published his text “Laryngeal Physiology for the Surgeon”. His laboratory and clinical investigation into the function of the larynx have been elegant and insightful and highlighted in his Daniel C. Baker Lecture before this Association in 2011. He has been the Principal Investigator on six separate NIH Grants leading to nearly 300 publications. He has been the recipient of the Edmund Prince Fowler Award from the Triologic Society, the First Prize in Clinical Research by the American Academy of Otolaryngology- Head and Neck Surgery. The ABEA has given him the Broyles Maloney Award and the ALA has bestowed upon him the Casselberry Award and the ALA Award, all of these for research as well as professional contributions to our societies and patients. No one exemplifies the high ideals of the ALA and calling of a physician more than Clarence Sasaki. But most of all, Dr. Sasaki is most proud of his family: his wife and two sons, Peter and John, and daughter-in-law Rachel.

The motto of the ALA is “Docendo discimus”, “By teaching, we learn”. That has been the guiding principle of the ALA for 134 years, what we do today and what will lead us forward in close collaboration with our colleagues in the United States and abroad, as so well evident at this year’s combined meeting.

I thank Dr. Sasaki and the ALA for this high Honor.

ii Ibid, p. 29
v Ibid, p. 74
PRESENTATION OF
THE AMERICAN LARYNGOLOGICAL ASSOCIATION
AWARD

HARVEY M. TUCKER, MD
Columbus, OH

Michael S. Benninger

The ALA award Established in 1987, the ALA Award is an annual award given as a mark of recognition and esteem for outstanding achievement either in medicine or another disciplines, which has contributed significantly to laryngology.

I would like to thank the ALA Committee and the Chair, Clark Rosen to allow me to present this award to my mentor and my friend, a person who has made a substantial impact on my career. It is with great pleasure that I present the 2013 ALA Award to Dr. Harvey Tucker.

Dr. Tucker received his Bachelors of Science at Bucknell University in 1960, going on to Jefferson Medical College, M.D. (1964). He did his Residency in Otolaryngology/Head and Neck Surgery at Jefferson in 1969 Head and Neck Fellowship at Washington University of Saint Louis, he joined the faculty at Upstate Medical Center, Syracuse, New York.

In 1975, he accepted the Chairmanship of Otolaryngology and Communicative Disorders at the Cleveland Clinic Foundation, where he served until 1993. I was very fortunate to be one of his residents. Dr. Tucker did not like to take elevators and would nearly always walk up the stair with a group of out of breath residents and medical students trailing after him. I had the good pleasure to try to do this with a cast and crutches after a repair of an Achilles tendon rupture. By the time I would get to the floor, they would just be moving on to another floor and I would follow trying to catch up. I think that this is the real reason that he accepted me into his residency program.

Since then, he has been Professor of Otolaryngology/Head and Neck Surgery at Case Western Reserve University School of Medicine/MetroHealth Medical Center of Cleveland, in which capacity he still serves.

His proudest accomplishment has been to have taken part in the selection and Otolaryngology training of over 130 residents and fellows at four different institutions, several of whom have themselves undertaken academic careers.

It is with great pleasure that I present the 2013 ALA award to Harvey Tucker.
The recipient of the 2013 American Laryngological Society Tucker Award is Dr. Andy Inglis. Andy is an Associate Professor of Otolaryngology at the University of Washington and Clinical Medical Director for Division of Pediatric Otolaryngology at Seattle Children’s Hospital and Regional Medical Center. He received his medical education at the Medical College of Pennsylvania, now known as Drexel University College of Medicine, Philadelphia, PA, 1981. His residency training in Otolaryngology – Head and Neck Surgery was completed in 1987 at the University of Washington in Seattle and a Fellowship – Pediatric Otolaryngology, Royal Alexandra Hospital for Children, Sydney, Australia, 1987 under the tutelage of Dr. Bruce Benjamin.

Andy is an active member of the ABEA and ASPO. Although he is not an ALA member, Andy’s contributions to the field of Pediatric laryngology are substantial and under-recognized. That is why when I was asked to Chair the Gabriel Tucker MD award committee I was pleased that we all agreed that Andy was deserving of this Award.

Andy is recognized by his colleagues as a progressive out of the box thinker. He pioneered the Endoscopic Posterior Cricoid Split and Rib Grafting for the management of posterior glottis stenosis or bilateral vocal cord paralysis in children and has become the “go to guy” for all of us in pediatric airway surgery to learn from or refer patients. Adaptation of this procedure to pediatric laryngology, we as pediatric airway surgeons are doing far fewer open procedures, thus improving our outcomes in voice preservation for these young children. Andy is also the Inglis in the most widely accepted classification of laryngeal clefts.
INTRODUCTION OF THE THIRTY-NINETH
DANIEL C. BAKER, JR. MEMORIAL LECTURER

Jonas T. Johnson, MD
Pittsburgh, PA

Clarence T. Sasaki, MD

One of the honors and traditional privileges given to ALA Presidents each year is to introduce the Annual Baker Lecturer. As you know, this lecturer is selected by committee only after an in depth review and scrutiny. The ALA is indebted to Scott Strome and his committee for identifying one of our “greats” to provide us this prestigious oration today.

Dr. Jonas Johnson is no stranger to us. He is the Eugene Myers Chair of Otolaryngology at Pittsburgh where he served as Editor-in-Chief of the American Journal of Otolaryngology between 1992 and 2002 and as Editor-in-Chief of the Laryngoscope between 2003 and 2011. In a Herculean effort, he has co-authored no fewer than 497 peer-reviewed journal articles and 176 book chapters. Chairing Otolaryngology was apparently not enough for him to do as he also managed to chair the Department of Neurosurgery for a time.

Jonas, a quintessential clinician-investigator with a global perspective not many of us have had the opportunity to experience, has chosen as his Baker Lecture “Management of Laryngeal Cancer: Contemporary Challenges in a Time of Rapid Change”.

Please welcome a wonderful personal colleague and a great friend of the ALA, Dr. Jonas Johnson.
Patients presenting with squamous cell carcinoma involving the larynx are best served when the diagnosis is made and the patient is treated when tumors are still small. Patients with Stage I and Stage II laryngeal cancer can be effectively treated with a single modality. The cure rates, after treatment with irradiation therapy, or transoral surgical approaches, are excellent and quite similar. Functional voice and swallowing are very good results. There does not exist good Level 1 evidence comparing radiation treatment to transoral resection directly, however, meta analysis of the available literature demonstrates that surgery is less costly, and laryngectomy-free survival may be better in the cohort of patients treated with surgery.

Small tumors of the supraglottic larynx may be effectively treated using transoral laser microsurgery or transoral robotic surgery. These surgical techniques have been demonstrated to preserve function and appear to be superior to open horizontal supraglottic resection, such as horizontal supracricoid resection or horizontal supraglottic resection. Patients having surgical treatment of supraglottic cancer should have bilateral neck dissection to help identify occult metastatic disease. This information helps the treatment team, as well as the patient understand prognosis and the potential need for adjuvant therapy.

Improved comprehensive post-treatment monitoring is essential to afford the few patients who fail primary treatment the opportunity for tumor control without laryngectomy.

Patients presenting with advanced laryngeal cancer often need multi-modality therapy. Efforts to preserve the larynx and avoid laryngectomy have been generally successful employing chemoradiation, however, approximately 40% of patients fail the initial treatment and eventually require laryngectomy. Additionally, over 40% of patients may suffer long term dysphagia.

Monitoring after CRT remains somewhat contentious. The timing of the first post-treatment PET/CT should be about 12 weeks after completion of treatment. Thereafter, CT may have similar sensitivity with less cost.
Contemporary challenges include avoidance of treatment-related toxicity following chemoradiation as well as improved techniques to insure healing when surgery is required after failed nonoperative intervention.

The treatment of advanced laryngeal cancer of patients presenting with T4 primary tumors remains contentious and is currently the subject of a prospective multi-institutional observational trial. All members of the treatment team must participate in the preoperative assessment and planning phases, as well as postoperative monitoring to maximize therapeutic benefits.

Introduction:

In the past two decades, we have observed seismic change in the way patients with squamous carcinoma of the larynx are treated. A landmark report, published in 1991, demonstrated that over 60% of patients presenting with Stage III/IV laryngeal carcinoma could be controlled without surgery. This resulted in renewed efforts at “organ preservation”. Subsequent studies provided level I evidence that concurrent chemoradiation therapy (CRT) resulted in improved laryngectomy-free survival compared to either induction chemotherapy followed by CRT or radiation alone. Overall survival was not statistically different. It is interesting to note that long term follow up (4.5 years) demonstrates a separation of overall survival curves in favor of induction chemotherapy. This was caused by a larger number of deaths unrelated to carcinoma of the larynx in the concurrent CRT group. Data do not allow determination if this trend is due to late long-term toxicity.

Early Laryngeal Cancer:

As we are all abundantly aware, a variety of therapeutic options are available for treatment of patients with squamous cancer of the larynx. Therapeutic selection is ideally based upon patient and tumor characteristics and the patient’s desires. Under ideal circumstances, patients with Stage I and Stage II laryngeal cancer can be successfully treated with a single modality. Thirty years ago, it was commonly held that radiation was the preferred treatment for small tumors because voice results were better, cure rates were similar, and irradiation treatment was associated with fewer morbidities. This, of course, is no longer true. Thirty years ago, radiation therapy for T1 glottic cancer was compared to open vertical hemilaryngectomy. This procedure, now largely obsolete, has been replaced by transoral approaches using microsurgical techniques.

The enthusiasm for transoral laryngeal microsurgical (TLM) approaches to small laryngeal cancer was initiated by the observations of some, such as Wolfgang Steiner of Germany (personal communication), that in many circumstances, small tumors could be completely eradicated with a biopsy. No further therapy was required. When TLM was formally embraced using modern instrumentation such as microscopes, microinstruments, and lasers, it became rapidly apparent that TLM could be accomplished for patients with small glottic cancers with survival, functional, and quality-of-life outcomes comparable to radiation therapy. Subsequent meta analysis suggested that there are no differences in local control.
or in voice. But patients treated with surgery had lower medical costs, and a trend toward a survival advantage (OR 0.81).\textsuperscript{4-7}

Similarly, T\textsubscript{1} and T\textsubscript{2} supraglottic cancers are ideally treated with a single modality. Surgery offers the potential to have the most sensitive biologic information about the extent of disease because elective bilateral neck dissection should be accomplished in every case.\textsuperscript{8} Transoral procedures using either TLM or transoral robotic surgery (TORS) have similar efficacy and afford patients reduced length of stay and facilitate functional recovery when compared to open partial laryngectomy. All supraglottic resections result in temporary dysphagia, which is accommodated in the overwhelming majority of patients who have adequate pretreatment pulmonary reserve.

The era of widespread use of CRT has resulted in the clear understanding of difficulties in providing surgical salvage after failed chemoradiation. In a study of laryngeal cancer, the fistula rate is 30-50\%, and over 70\% of patients initially staged T\textsubscript{1} or T\textsubscript{2} require total laryngectomy for salvage.\textsuperscript{9-10}

The bottom line is that cancer control of early laryngeal cancer with surgery equals or exceeds irradiation therapy for early stage disease. Multimodal therapy is not indicated for patients with Stage I and Stage II laryngeal cancer. Neck dissection gives the most sensitive prognostic information available for patients with supraglottic cancer and allows the treatment team to adjust therapy when patients must be upstaged based upon the identification of occult metastasis. Lastly, under any circumstances, patients treated with primary irradiation need improved monitoring to reduce the number of patients eventually subjected to total laryngectomy for persistent disease.

Advanced Laryngeal Cancer:

In many organizations, CRT is currently considered the standard of care for patients with Stage III and some Stage IV laryngeal cancer. This does offer the potential for laryngeal preservation to many patients. Unfortunately, review of prospective randomized clinical trials demonstrates that 43\% of patients treated with CRT suffer severe late toxicity.\textsuperscript{11} The enhanced efficacy of irradiation attributed to concurrent administration of chemotherapy results in more profound mucositis and sometimes grade III injury, which may eventuate in pharyngeal stenosis and severe fibrosis.

Review of the randomized clinical trial, RTOG 91-11,\textsuperscript{2} demonstrates that up to 70\% of patients in that trial potentially could have been amenable to partial laryngeal surgery.\textsuperscript{11} In a retrospective review of 60 patients treated with partial laryngeal surgery at the University of Pittsburgh, 2- and 5-year disease-free survival was outstanding (86.2\%, 72.9\%, respectively).\textsuperscript{12} Transoral microsurgery outperformed supracricoid laryngectomy in terms of communication and swallowing function. Laryngeal preservation was achieved in 100\% of patients offered TLM. Additionally, patients upstaged based upon findings at neck dissection were treated with adjuvant therapies. Of the total group, 74\% required no adjuvant therapy, while 18\% required CRT, and 9\% required reported that functional results after
radiation alone. Others have similarly partial laryngeal surgery is improved when compared to open, horizontal, supraglottic laryngectomy. Similar results are obtained with TORS. Sasaki et al described observations suggesting that the glottic closure reflux is maintained after TLM, while many patients having undergone open procedures apparently have lost function of the superior laryngeal nerve. Direct comparison of swallowing function between patients treated for oropharyngeal and supraglottic cancer with TORS vs CRT demonstrate fewer toxicities in the surgically treated group.

The bottom line is that transoral procedures result in fewer functional problems when compared to open, partial laryngeal surgery. This functional advantage is even greater when comparing transoral procedures to chemoradiation therapy. The potential that surgical intervention may allow reduced CRT and, accordingly, fewer long term toxicities awaits randomized clinical trials.

Most surgeons today concur that patients with laryngeal cancer, which would require a total laryngectomy, should be considered for primary CRT. The current data suggest that approximately 40% will fail and require re-treatment, many will suffer treatment-related complications, and many will die. We all await newer approaches to targeted therapy, so patients who will fail nonoperative care can be spared it altogether and proceed directly to surgery.

What is at issue, however, is the ideal management of patients with advanced (T₄) laryngeal cancer. The big prospective, randomized trials systematically excluded T₄ tumors for appropriate reasons. The designers of those trials did not expect CRT to control advanced primary tumors. CRT has been promoted to preserve function, so the issue really comes down to the determination if function can be preserved in an organ in which cancer has already destroyed cartilage and limited motion causing airway obstruction and aspiration. These issues remain unanswered, although speculation is abundant. Data suggest that patients with T₄ laryngeal cancer offered surgery and appropriate adjuvant therapy have better disease-free control when compared to patients offered CRT as primary treatment, and then offered salvage surgery for failure.

Single institution attempts to use chemoselection of inpatients with T₄ laryngeal cancer suggest that some patients can be spared laryngectomy. The bottom line for T₄ laryngeal cancer is that this disease entity is largely unstudied in randomized clinical trials. Disease control is less likely, organ dysfunction is more likely, and many surgeons continue to feel that resection, reconstruction, and adjuvant therapy should be the first line of treatment. A multi-institutional prospective evaluation, called the Treatment of Advanced Laryngeal Cancer (TALC), is currently ongoing and may have results in the next few years.

In the meantime, the United States has observed a rather dramatic reduction in the number of partial laryngectomy procedures, while we have seen almost doubling in the number of surgeries performed following prior irradiation. It is apparent that there
remains room for improvement. The best identified (we hope). We continue to adjuvant therapies are yet to be struggle with early identification of persistent disease therapy, the methods of targeting treatment for patients most likely to respond favorably must be improved, and we risk the potential that a generation of surgeons will not be prepared to afford patients optimal intervention as the pendulum swings away from nonoperative care to partial laryngectomy procedures.

At the very least, all patients should be seen by a multi-disciplinary team during the diagnosis and treatment planning stage. Thereafter, careful multi-disciplinary monitoring offers the best opportunity for preservation of both function and life.
Regenerative Treatments for Vocal Fold Scar and Sulcus with Basic Fibroblast Growth Factor

Shigeru Hirano, MD, PhD; Mami Kaneko, MS; Ichiro Tateya, MD, PhD; Shini-ichi Kanemaru, MD, PhD; Juichi Ito, MD, PhD

Introduction: Vocal fold scar is a challenge. Basic fibroblast growth factor (bFGF) has proven to be effective to resolve scar tissue in animal models. This study reports the efficacy of bFGF on vocal fold scar and sulcus in human cases. Methods: Fifteen cases (7 scar and 8 sulcus) were treated by either local injection of bFGF (n=6) or regenerative surgery using bFGF (n=9). The surgical procedure consisted of dissection of scar and implant of gelatin sponge with bFGF. Follow up periods varied 6 through 24 months. Results: Maximum phonation time, VHI-10, and GRBAS scale were assessed. Injection group showed significant improvement on VHI-10 and GRBAS. Regenerative surgery group showed significant improvement in all parameters. Jitter and shimmer was evaluated in surgery group, indicating improvement in 6 and 5 of 9 cases respectively. Conclusion: Regenerative treatments using bFGF has shown to be effective for improvement of vocal function in scar and sulcus.

Comparison of Treatment Modalities for Contact Granuloma: Nation-Wide Multicenter Study

Jae Wook Kim, MD, PhD; Young-il Son, MD, PhD; Byung Joo Lee, MD, PhD; Hong Sil Choi, MD, PhD; Seung Ho Choi, MD, PhD; Young Hak Park, MD, PhD; Sang Phil Chung, MD, PhD; Sung Min Jin, MD; Seung Won Lee, MD

Objectives: Treatment options for contact granuloma of the larynx are greatly diverse, which include simple observation, voice therapy, proton pump inhibitor (PPI) medication, steroid inhalation, botulinum toxin injection, surgical excision, and radiotherapy. However, there has been no randomized trial or large cohort study to establish a standard treatment algorithm. The purpose of this study was to evaluate the efficacy of commonly applied treatment modalities and to determine predictive factors of poor treatment outcome.

Methods: Twenty otolaryngologists from 18 university hospitals reviewed recent 3-year medical records of contact granuloma patients of their own. To be enrolled as a valid case, each treatment should be continued at least more than 3 months. After exclusion of intubation granuloma, 590 cases of contact granuloma were analyzed. Treatment outcomes were assessed as complete response (CR), marked improvement, partial response, and no response. Chi-square test was used to compare the efficacy of each treatment modality and logistic regression to determine the predictive factors of poor treatment outcome.

Results: CR rates at 3 month after each treatment were 20.5% for observation, 31.6% for steroid inhaler, 44.0% for PPI, 44.3% for voice therapy, 60.0% for surgical removal, and 74.2% for botulinum toxin injection. Recurrences were commonly observed after surgical removal (37.1%), steroid inhalation (10.5%), and simple observation (10.3%). Fibrotic and/or bilateral contact granulomas proved to be as poor prognostic factors.

Conclusions: Voice therapy and/or PPI medications are recommendable as the first line of treatment. Surgical removal should be reserved only for selected patients because of the high chance of recurrence. Botulinum toxin injection can be used not only for fresh cases but also for refractory cases with an expectation of a high response rate.
**SCIENTIFIC SESSIONS**

**Spontaneous Vocal Fold Necrosis Induced by Angiogenesis Inhibitors**

Dana M. Hartl, MD, PhD; Rastislav Bahleda, MD; Antoine Hollebecque, MD; Jacques Bosq, MD; Christophe Massard, MD; Jean-Charles Soria, MD, PhD

Objective: Report three cases of spontaneous vocal fold necrosis induced by bevacizumab.

Methods: Two patients presented with dysphonia 1 week after beginning treatment with paclitaxel-bevacizumab for metastatic breast and lung cancer, respectively. The third patient became dysphonic after 4 years of maintenance therapy with bevacizumab for metastatic lung cancer.

Results: In all cases we observed fibrin on the superior surface and the free edge of both vocal folds, sparing the anterior commissure and the vocal process. Microlaryngoscopy showed disappearance of the mucosa and the vocal ligament at the middle 2/3 of the vocal folds. Histopathology showed necrosis, edema and inflammation. There was no fungal or bacterial infection or malignancy. Voice has so far not recovered in one patient 3 months after discontinuation of bevacizumab.

Conclusions: Further studies of laryngeal targets of angiogenesis inhibitors may provide insight into toxicity and provide evidence for future use of these agents in laryngeal diseases.

**Vocal Fold Pseudocyst: Factors Guiding Clinical Management**

Christine Estes, MM, MA-CCC-SLP; Lucian Sulica, MD

Purpose: Pseudocysts are distinctive phonotraumatic lesions for which clear treatment recommendations are not established. This study aims to define these based on outcomes of a large clinical series.

Study Design & Methods: Retrospective review with follow-up of patients presenting with pseudocyst. Demographic information, vocal demand, VHI-10 score, dysphonia severity, and clinical findings (laterality, reactive lesion, paresis, varix, hemorrhage) were analyzed to determine predictors of surgery.

Results: Data from 46 patients (5M:41F) were analyzed. All initially underwent behavioral management. Seventeen (37%) required surgery to return to acceptable voice quality. Although not statistically significant, hemorrhage and/or varices showed a trend in predicting need for surgery. Other aspects did not correlate with surgery.

Conclusions: No factors predicted the need for surgical excision of pseudocysts, although vascular-related lesions tended to correlate with surgical management. Therefore, a trial of behavioral management appears to be appropriate for all patients with pseudocyst, sparing the majority surgical intervention.
Endoscopic Fibromucosal Flap Reconstruction of Anterior Commissure Webs

Steven M. Zeitels, MD; Robert E. Hillman, PhD

Anterior-commissure (AC) cicatrization and web formation is a difficult problem that can result from a variety of clinical scenarios. A procedure was created to lengthen the glottal/subglottal aperture by resurfacing the medial aspect of one vocal fold while the second side re-epithelialized secondarily, thereby re-establishing a more normal AC architecture. This was done by endoscopically suturing (technical aspects to be described) advancement-rotation fibromucosal flaps and often utilizing epithelium from the contralateral vocal fold. A retrospective review was done on 16 cases (papillomatosis-8, dysplasia-4, trauma-4). Thirteen of 16 had >3mm of lengthening. There was a wide spectrum of objective and subjective voice results commensurate with the disparity of the underlying pathology. The vocal outcome was generally better after reconstructing surgically-induced webbing that resulted from prior treatment of epithelial diseases. The differing voice results provide insights into the philosophy, goals, and principles of reconstruction of anterior-commissure webbing.

The Urgent Airway Team: Creation, Implementation, and Early Results: The Ford Experience

Robert J. Stachler, MD; P. Joseph Patton, MD; Manu Maholtra, MD; Ilan Rubinfield, MD; Carrie Tuskey, RN; Jose Garcia, MD; Morris Brown, MD

Objective: With the occurrence of a few sentinel events resulting in airway deaths in 2009, a multidisciplinary group of physicians was developed to create an urgent airway team to improve patient quality and safety.

Procedures: This presentation will detail the creation of the Urgent Airway Team at The Henry Ford Hospital in Detroit, MI. Difficulties with adaptation will be discussed. Our early results for the first 9 months of implementation will be presented.

Results: Since the implementation of the Urgent Airway Team, our near miss and minor airway severity events has trended downward. The level 1, 2 and 3 (moderate, serious, catastrophic) airway events have also trended downward. Out of 67 events, 3 were catastrophic and could not be avoided. An improved outcome is the norm with Urgent Airway Team activation.

Conclusion: The creation of a multispecialty team to handle acute airways is a vital addition to any healthcare system.
**SCIENTIFIC SESSIONS**

**Airway Control and Operative Management of Traumatic External Laryngotracheal Injuries: Experience from a Large Canadian Centre**

Derrick Randall, MD, MSc; Luke R. Rudmik, MD; Chad G. Ball, MD, MSc; J. Douglas Bosch, MD

Introduction: Laryngotracheal trauma represents life-threatening, uncommon injuries requiring prompt intervention to prevent short- and long-term aerodigestive tract sequelae.

Methods: In-patient and emergency visit diagnostic codes from April 1, 1995, to December 31, 2011, were queried for laryngotracheal injuries according to International Classification of Diseases codes. Health records and diagnostic imaging were evaluated for mechanism, injuries, airway management, and aerodigestive function.

Results: 94 patients met inclusion criteria, equating to 1/965 admissions and 1/2293 emergency presentations. Seventeen percent of injuries were severe (Schaefer-Fuhrman score≥4). Airway capture was performed in 66% of patients, with 12.7% necessitating emergent surgical airway. Nine patients (16%) had long-term moderate/severe dysphonia; 8% had dysphagia. Odds ratio for long-term dysphonia among severe compared to minor laryngotracheal injuries was 19.6 (95% CI=4.5–84.6).

Conclusions: Traumatic laryngotracheal injuries are more common than previously reported, due to increased recognition. Many can be managed non-surgically, but emergent management remains important to minimize complications.

**UAB Experience in Modified Cricotracheal Resection**

Ahmed Aldkhyyal, MD; Paul Castellanous, MD

Introduction: intubation and tracheostomy are the most common causes of benign acquired airway stenosis. Management varies according to etiology, location, grade and extent of the stenosis.

Methods: We performed a retrospective chart review of all patients undergoing cervical tracheal or cricotracheal resection from January 2008 through April 2012.

Result: There were 40 patients who underwent tracheal or cricotracheal resection(CTR) and reconstruction; 24 of the patients (60%) were women. The median body mass index (BMI) of the patients is 35.4 kg/m2.(Rang,22.3 to 50.8). The etiology in the majority of patient was due to prolonged intubation and tracheostomy 14 (35%). Location of stenosis mainly was on subglottic (SG) and trachea 29 (72%) patients. The majority of the patient had grade 3 stenosis 35(88%). The most common comorbidity in our patients is gastro esophageal reflex disease (GERD) 26(65%), then diabetes mellitus 13 (32%) patients. 37 (92 %) patients had preoperative dilatation (laser and balloon), 7 patients had post operative dilation (laser and balloon), 4 (10%) had revision open laryngoplasty. 38 (95%) patients were decanulated. Complication occurred in 12 patients. 3 patients had granulation. 2 patients had limited tracheal dehiscence. 2 patients had wound infection and 2 patients had neck abscess. 1 patient had transient vocal cord immobility.

Conclusion: Modified CTR has comparable result to traditional CTR and may offer advantages over the traditional CTR.
**SCIENTIFIC SESSIONS**

**Electrical Stimulation of a Denervated Muscle to Promote Selective Reinnervation Prevents Synkinesis and Restores Function**

David Zealear, PhD; Yike Li, MD; Isamu Kunibe, PhD, MD; Akihiro Katada, PhD, MD; Rajshri Mainthia, BS; Cheryl Billante, PhD; Kenichiro Nomura, MD, PhD

A clinical model of laryngeal paralysis was studied in the chronic canine where both laryngeal nerves were sectioned and ventilation compromised. The PCA muscles were implanted with electrodes leading to a pulse generator. Animals were randomly assigned to 3 groups to assess the effect of different stimulus paradigms on reinnervation quality and functional recovery. Spontaneous vocal fold movement was measured endoscopically. Exercise tolerance was measured on a treadmill. EMG potentials were recorded from abductor muscles and adductor muscles during hypercapnic respiration to index reinnervation by inspiratory motoneurons, and during SLN stimulation to index reinnervation by adductor motoneurons. Nonstimulated and 40 pps stimulated animals showed paradoxical closure of the glottis during hypercapnea and decreased exercise tolerance due to faulty reinnervation. In contrast, stimulated 10 pps animals showed no paradoxical closure, normal exercise tolerance, and less faulty reinnervation. Muscle histochemistry showed greater percentage of type II fibers in 10 pps animals.

**Are RLN Re-Innervation Techniques Really Effective for Treating Thyroidectomy–Related Vocal Fold Paralysis?**

Seung Won Lee, MD, PhD; Kee Nam Park, MD; Jaw Wook Kim, MD, PhD

Objectives: The purpose of this study was to assess the long-term efficacy of the voice outcomes for the management of thyroidectomy-related unilateral vocal fold paralysis using recurrent laryngeal nerve (RLN) re-innervation techniques.

Methods: A prospective human clinical trial (SCHBC_IRB_2012_142) was performed from January 2008 to June 2012 at Soonchunhyang University Bucheon Hospital. Nineteen patients who received RLN re-enervation using direct re-innervation (neurorrhaphy) or ansa–RLN re-innervation and who completed subjective and objective voice measurement over 1 year were enrolled in this study.

Results: The causes of VFP were cancer direct RLN invasion (68.4% 13/19) and nerve transection (31.5% 6/19). The reinnervation techniques were direct neurorrhaphy (63.2%; 12/19) and ansa-RLN reinnervation (36.8%; 7/19). The average voice improvement time following the procedure was 4.3 ± 2.6 months. Subjective parameters, such as GRBAS scales, the voice handicap index (VHI), glottic closure, mucosal wave, and aspiration showed statistically significant improvement six months postoperatively, and these remained stable up to twelve months after surgery (P <0.05) Objective parameters, such as MPT, jitter, shimmer, and HNR, showed statistically significant improvement until twelve months (P <0.05).

Conclusions: Recurrent laryngeal nerve re-innervation techniques demonstrated statistically significant voice improvement up to twelve months postoperatively and could be effective alternatives for treatment of thyroidectomy-related vocal fold paralysis.
CONTRIBUTION OF THE PHARYNGEAL Plexus TO REFLEX VOCAL CORD ADDUCTION

Boris Pashkover, MD; Hirouni Matsuzaki, MD, PhD;
Clarence T. Sasaki, MD

Introduction: Our aim is to elucidate whether the pharyngeal plexus (PP) contributes to protective vocal cord adduction in the porcine model.

Methods: Thyroarytenoid muscle (TA) contraction was recorded with electromyography (EMG) by electrical stimulation of the internal branch of the superior laryngeal nerve (iSLN) and PP in seven pigs. To reduce statistical noise, 6 stimulus recordings were averaged per experimental presentation.

Results: Glottic closure reflex (GCR) was detected with stimulation of iSLN in all subjects. Stimulation of PP evoked a response from TA in 6/7 pigs. In 1/7 pigs, TA EMG mean latency was noted to be 18.8 msec with simulation of PP. Antidromic nerve pulses generated responses from TA with a medium latency (mean: 6.32 msec) in 3/7 pigs. TA responses with a short latency (mean: 1.8 msec) were identified in 2/7 pigs.

Conclusions: We identified multiple sensory and direct motor innervation patterns of the pharyngeal plexus leading to vocal cord adduction. Such alternate pathways may be useful in rehabilitating the impaired GCR when the dominant iSLN mediated response is either disabled or weakened.

SWALLOWING PRESSURE OF NORMAL SUBJECTS MEASURED BY HIGH RESOLUTION MANOMETRY WITH A CATHER OF 2.64MM DIAMETER

Keigo Matsubara, MD; Yoshihiko Kumai, MD, PhD;
Yasuhiro Samejima, MD; Eiji Yumoto, MD

Objective: To obtain normal control measurements of the swallowing pressure (SP) examined by a high resolution manometry (HRM) catheter with 2.64mm diameter and 36 entire circumferential sensors.

Materials and Methods: Thirty healthy subjects swallowed water of different temperature and amount to examine the maximum SP at the soft palate, mesopharynx, hypopharynx, and UES, and duration of lowered pressure at UES. Moreover, we compared these data with those with 4.0mm HRM previously obtained in other studies.

Results: In comparison with previous data, 1) Pressure and width of UES at rest were significantly lower and narrower (p<0.01). 2) Maximum SP at UES was significantly lower (p<0.01). 3) Maximum SP at other locations and duration of lowered pressure at UES were not significantly different.

Conclusion: Our data obtained with 2.64mm HRM were partially different from those previously obtained with 4.0mm. Thinner catheter is less invasive and thus might contribute to obtain more physiological measurements.
The Effect of a Speaking Valve on Laryngeal Aspiration and Penetration in Children with Tracheotomies

Julina Ongkasuwan, MD; Ellen M. Friedman, MD

Introduction: Aspiration of food and liquids during swallowing can occur after tracheotomy. In adult patients, use of a Passy Muir Speaking Valve (PMV) has been shown to decrease laryngeal penetration and aspiration.

Methods: Pediatric patients with tracheotomies able to tolerate a PMV were identified. Modified barium swallow (MBS) was performed with and without the PMV using thin liquids and purees. Two SLP's, blinded to the PMV status, reviewed the MBS’s. Three swallows of each consistency were graded on an 8 point Penetration-Aspiration Scale. Residue in the valleculae, pyriform sinuses and posterior pharyngeal wall was also graded.

Results: Twelve patients were included for analysis. Laryngeal penetration and aspiration was decreased with purees over liquids (p=0.5 and p=0.005 respectively). The presence of the PMV decreased piriform sinus residue (p=0.01), however did not decrease laryngeal aspiration or penetration.

Conclusion: Unlike in adults, the presence of PMV did not improve laryngeal aspiration or penetration in children with tracheotomies. It did, however, improve piriform sinus residue.

Laryngeal Sarcoidosis: Proposal for Clinical Staging and Treatment

Rupali N. Shah, MD; Anthony Delsignore, MD; Elizabeth Demicco, MD; Kenneth W. Altman, MD, PhD; Peak Woo, MD

Objective: Sarcoidosis is a systemic disease that may present with laryngeal paralysis and/or laryngeal involvement. We propose three clinical stages and offer treatment options based on stage. The three stages are inflammatory, granulomatous, and cicatricial.

Method: Retrospective case series.

Results: Forty patients were reviewed. Ten patients had paralysis; the remaining had laryngeal involvement. Sites of involvement were: supraglottis (n=19), glottis (n=4), subglottis (n=3), and combined (n=4). Fifteen patients presented with diffuse inflammation, 4 with granulomatous disease, and 10 with cicatricial stenosis. Medical management, including oral prednisone, antimalarials, antireflux therapy, or infliximab, was used as primary treatment for the inflammatory stage. Office and endoscopic steroid was used for the granulomatous stage; and, endoscopic or open treatment was reserved for cicatricial disease. Endoscopic treatment included balloon, CO2 laser, and steroid injection. Three patients required tracheostomy.

Conclusion: Clinical staging of laryngeal sarcoidosis is proposed. Recognition of progression from inflammatory to granulomatous to cicatricial forms can guide treatment.
Organ Preservation Surgery for Laryngeal Low- and Intermediate Grade Chondrosarcoma

Caesar Piazza, MD; Francesca Del Bon, MD; Giorgio Peretti, MD; Paola Grazioli, MD; Stefano Mangili, MD; Diego Barbien, MD; Piero Nicolai, MD

Introduction: Endoscopic resection (ER), open-neck partial laryngectomies, and crico-tracheal resection and anastomosis (CTRA) represent single-stage procedures achieving a good balance between oncologic radicality and organ preservation for laryngeal low- (LCS) and intermediate-grade chondrosarcoma (ICS).

Material and methods: Between 2001 and 2012 we treated 12 cricoid plate, 2 thyroid, and 1 arytenoid chondrosarcomas. Two cricoid LCS and the only arytenoid LCS were managed by ER. Two thyroid ala LCS were submitted to thyroid laminctomy. Three ICS and 7 LCS of the cricoid were managed by CTRA.

Results: Eleven (73%) patients were extubated at the end of surgery. The rest was submitted to temporary tracheotomy. Immediate complications included one bleeding and one partial dehiscence of the anastomosis. The only late complication was an anastomotic stenosis. All regained oral feeding and voice ranging from normal to moderate dysphonia. At the last follow-up, 1 patient died for unrelated causes, 7 are alive and well, 6 are alive with asymptomatic and stable residual disease. One (7%) patient received total laryngectomy 11 years after CTRA for recurrent disease.

Conclusions: Organ preservation surgery for laryngeal LCS and ICS represents a good option with low morbidity, good quality of life, and fair possibility to obtain oncologic radicality.

Survival in T4a Laryngeal Cancer Patients Treated by Primary Total Laryngectomy with Adjuvant Therapy

Nayla Matar, MD; Evana Francis, MD; Charbel Nassif, MD; Nadim Khoueir, MD; Chadi Farah, MD; Amine Haddad, MD

Introduction: The trend toward non-surgical treatment of locoregionally advanced laryngeal cancer has been synchronous with a decrease in overall survival (OS). We assessed the survival outcomes of an homogeneous group of pT4a laryngeal cancer patients treated, at our institution, by primary total laryngectomy and neck dissection with adjuvant therapy when indicated (TL-R/CT).

Material & Methods: We conducted a retrospective study including all consecutive pT4a laryngeal cancer patients treated by primary TL-R/CT between 1998 and 2010. Overall and disease free survival (DFS) at 2 and 5 years are reported.

Results: From a cohort of 108 TL, 30 met the inclusion criteria (22 men and 8 women). The mean age was 62.8 years. The median follow-up was 3.13 years. Eighteen patients received adjuvant RT and 3 received adjuvant chemoradiation therapy. At 2 years, OS was 77.9%. We could not demonstrate a significant correlation between survival and lymph node staging (N0: OS=76%; N1, N2b: OS=66.7% and N2c: OS=33.3%; p=0.5). DFS at 2 years was 74.2%. Fifteen patients were followed for 5 years; the 5-years OS and DFS rates were 65.6%.

Conclusion: In our series, primary total laryngectomy, with indicated adjuvant therapy, provides a high survival rate for pT4a laryngeal cancer patients.
The Guideline of the European Laryngological Society (ELS) for the Performance of Laryngeal Electromyography

Orlando Guntinas-Lichius, MD; Christian Sittel, MD; Gerd Fabian Volk, MD; Rudolf Hagen, MD; Gerhard Friedrich, MD; Tadeus Nawka, MD; Christoph Arens, MD; Andreas Mueller, MD; Ruth Lang-Roth, MD; Claudio Storck, MD; Claus Potoschnig, MD

Introduction: Many laryngologists do not routinely use laryngeal electromyography (LEMG) although it is recognized as an important diagnostic tool for many years. This may be due to a persisting lack of agreement on methodology, interpretation, validity, and clinical application of LEMG.

Material & Methods: To achieve consensus in these fields, the Working group on Neurolaryngology of the European Laryngological Society (ELS) has reviewed the literature on performance and interpretation of LEMG. Based in this analysis the group has developed a guideline. During the process the group performed LEMG together in patients with different neurolaryngological pathologies.

Results: This guideline has several differences to the US-American guideline published by members of the American Academy of Otolaryngology Head and Neck Surgery, the Neurolaryngology Subcommittee and the Neurolaryngology Study Group (Otolaryngol Head Neck Surg. 2009 Jun;140(6):782-793). The European guideline describes the following aspects of LEMG: (1) minimum requirements for the technical equipment required to perform and record LEMG; (2) best practical implementation of LEMG; (3) criteria for interpreting LEMG.

Conclusion: The guideline is actually used and validated for LEMG examinations in an ongoing prospective multicenter trial on surgery for bilateral vocal cord paralysis performed by members of the Working group on Neurolaryngology of the ELS. The guideline should help to spread LEMG in the European laryngological community, improve the standardization of LEMG and thereby the quality of evidence of this important neurolaryngological tool.
The Role of Colour Duplex Sonography in Preoperative Perforator Mapping of the Anterolateral Thigh Flap

Lukasz Luczewski, MD; Pawel J. Golusinski, MD; Jakub Pazdrowski, MD; Tomasz Synowiec, MD; Piotr Pieńkowski, MD; Pawel Checinski, MD; Wojciech Golusinski, MD

Introduction: The anterolateral thigh (ALT) flap was first described by Song and since 1984 its use has become widespread in reconstructive surgery following extensive tumour resections in head and neck cancer. Before harvesting, the perforators must be located using one of several possible imaging techniques.

Material and Methods: In this study, we evaluated the utility of Colour Duplex Sonography (CDS). Twenty-two patients considered candidates for reconstruction following resection of head and neck tumours were evaluated. ALT flap harvesting and implantation was performed in 20 of the 22 patients. In the remaining two cases, no perforators were located and harvesting was ruled out. Preoperative ultrasound was performed with the colour Doppler Duplex option.

Results: The positive predictive value and sensitivity of CDS was 89.4% and 94.4%, respectively, when compared to the surgical report. CDS also identified the perforator course (myocutaneous or septocutaneous) with 100% accuracy.

Conclusions: The sensitivity of CDS to assess perforator course is quite high. Colour Duplex Sonography is a useful tool in preoperative perforator mapping for ALT flap planning.
The Effect of Anti-Reflux Therapy on Phonomicrosurgical Outcomes: A Retrospective Study

Ryan Ruiz, BA; Stratos Achlatis, MD; Shaum Sridharan, MD; Yixin Fang, PhD; Ryan C. Branski, PhD; Milan R. Amin, MD

Introduction: This study was designed to determine the clinical yield of anti-reflux medication on post-operative outcomes in patients undergoing surgical treatment for benign vocal fold lesions.

Methods: A retrospective chart review evaluating the effect of anti-reflux medication use on VHI and RSI scores in adult patients with benign vocal fold lesions that underwent either phonomicrosurgery or KTP ablation for corrective treatment from 2009 to 2012.

Results: Of the 51 patients included in the study, 12 (23.5%) were using anti-reflux medication and 39 (76.5%) were not. The mean ΔVHI and ΔRSI for the reflux group were -14.75 and -7.5 respectively while control values were -9.87 and -5.05 respectively. Linear regression analysis showed that there was no statistical difference between reflux groups and control groups for ΔVHI and ΔRSI.

Conclusion: Anti-reflux medications did not significantly affect post-operative outcomes in our cohort of patients with benign vocal fold lesions.

Vocal Fold Hemorrhage: Factors Predicting Recurrence

Christen Lennon, BA; Thomas Murry, PhD; Lucian Sulica, MD

Objective: Vocal fold hemorrhage (VFH) is an acute phonotraumatic injury treated with voice rest; recurrence is an accepted indication for surgical intervention. This study aims to identify factors predictive of recurrence based on outcomes of a large clinical series.

Methods: Retrospective review of cases of VFH presenting to a university laryngology service. Demographic information was compiled. Videostroboscopic exams were evaluated for hemorrhage extent, presence of varix, mucosal lesion, and/or vocal fold paresis. VFH recurrence was the main outcome measure.

Results: 47 new instances of VFH were evaluated (25M:22F). 11 patients experienced recurrence, while 36 did not. A greater proportion of those with recurrence had localized hemorrhage and varix, although only varix demonstrated significant association with recurrence (p=0.021).

Conclusion: VFH recurs in approximately 25% of patients. Localized hemorrhage and varix were predictors of recurrence. Earlier surgical intervention may be indicated to treat patients with such characteristics.
Bedside Injection Medialization Laryngoplasty in the Acute Care Setting

Anca M. Barbu, MD; John P. Gniady, MD; Richard Vivero, MD; Aaron D. Friedman, MD; James A. Burns, MD

Objectives: Injection medialization laryngoplasty is an effective means of treating glottic insufficiency due to unilateral vocal fold immobility, yet no prior experience with bedside injections in the acute care setting has been reported. This study measures outcomes with this treatment strategy.

Methods: A cohort of 70 patients who underwent bedside vocal fold injection (VFI) with Restylane in the last 5 years was identified. Pre- and post-injection data regarding voice, cough, and ability to advance diet was collected.

Results: Mean time to injection was 8.2 days post-operatively. 36/70 (51%) were performed in the ICU setting. 28/40(70%) advanced their diet from NPO within 5 days of the injection. All patients subjectively had stronger voice and more forceful cough. There were no major complications.

Conclusions: Injection laryngoplasty can be safely performed at the bedside in the acute care setting, and patients may benefit from early improvement in glottic function.

Excised Larynx Evaluation of Wedge-shaped Adjustable Balloon Implants for Minimally Invasive Type I Thyroplasty

Matthew Hoffman, MD; Erin E. Devine, MS; Timothy M. McCulloch, MD; Jack J. Jiang, MD, PhD

Introduction: We performed medialization thyroplasty with a wedge-shaped adjustable balloon implant (wABI) via a minithyrotomy approach in excised larynges.

Methods: Thyroplasty with the wABI was performed on six excised larynges with simulated vocal fold paralysis (VFP). Mucosal wave, aerodynamic, and acoustic parameters were measured for three conditions: normal; VFP; and VFP with the wABI.

Results: Phonation threshold pressure for wABI (8.13±3.65 cmH2O) was significantly lower than VFP (18.57±3.97; p<0.001) and similar to normal (7.23±2.49; p=0.184). Percent jitter for wABI (0.79±0.31%) was also lower than VFP (5.77±2.08; p=0.002) and not significantly greater than normal (0.51±0.31; p=0.206). The mucosal wave was preserved after implant insertion.

Conclusions: Effective medialization with preservation of the mucosal wave was observed with the wABI in this preliminary experiment. The wABI offers the potential for a minimally invasive insertion in addition to postoperative adjustability. Further studies in animals and humans are warranted to evaluate clinical utility.
**SCIENTIFIC SESSIONS**

**Patient-Based Outcomes of In-Office KTP Ablation of Benign Vocal Fold Lesions**

Shaum Sridharan, MD; Stratos Achlatis, MD; Ryan Ruiz, BA;
Ryan C. Branski, PhD; Milan R. Amin, MD

Introduction: The Potassium Titanyl Phosphate (KTP) laser is being used increasingly to treat benign vocal fold lesions in the office setting. Despite excellent data on its effectiveness in reducing lesion size, standardized patient-based outcome data is lacking.

Methods: A retrospective review of 28 consecutive patients with benign vocal fold disease treated with in-office KTP laser therapy. The Voice Handicap Index (VHI) as well as acoustic and aerodynamic data were obtained prior to treatment and throughout follow-up.

Results: Across all patients, the mean VHI scores decreased at first follow-up (m=~38 days) from 20.4 to 9.4 (p<0.001). At subsequent follow-up visits, the VHI scores remained stable (mean=8.0). This shift in VHI scores was accompanied by favorable alterations in both acoustic and aerodynamic measures.

Conclusions: The current data corroborate our previous data showing significant alterations in vocal fold appearance and function in patients treated with the KTP for benign vocal fold lesions.

**Prevalence and Risk Factors for Musculoskeletal Problems Associated with Microlaryngeal Surgery: A National Study**

Adrienne Wong, MD; Libby J. Smith, DO;
Nancy A. Baker, ScD, MPH, OTR/L; Clark A. Rosen, MD

Microlaryngeal surgery (MLS) presents ergonomic challenges and potential risk for musculoskeletal injury. This study aims to describe the prevalence and risk factors of MSK problems associated with MLS. A survey was administered to otolaryngologists on MLS experience, operating room set-up, and MSK problems. Out of one-hundred-sixty surveys, 77% of respondents reported MSK symptoms during MLS. 32% reported taking breaks during MLS to due to MSK symptoms. 48% experienced symptoms persisting to 48 hours after MLS. Surgeon height correlated with hip/back pain, while BMI was not correlated with experiencing symptoms. Females demonstrated a trend toward increased wrist/elbow/hip symptoms. Older surgeons reported more hand symptoms. 10% reported rushing during MLS and 6% reported stopping procedures due to MSK symptoms. This represents the first attempt at characterizing surgeon positioning and MSK symptoms in MLS. These findings highlight the importance of paying attention to proper support and positioning during MLS to protect surgeon health.
**SCIENTIFIC SESSIONS**

**Hoarseness Evaluation: A Transatlantic Survey of Laryngeal Experts**

Babak Sadoughi, MD; Marvin P. Fried, MD; Andrew Blitzer, MD, DDS; Lucian Sulica, MD

Introduction: Hoarseness is a symptom of laryngeal dysfunction. No clear consensus exists regarding its appropriate evaluation. A survey of laryngologists is used to establish expert opinion on the initial methodology for evaluation of hoarseness, and to identify practice patterns and divergence of opinion regarding appropriate management.

Methods: An online questionnaire consisting of 13 items was designed and submitted electronically to the membership of three laryngology societies: the American Laryngological Association, the American Broncho-Esophagological Association, and the European Laryngological Society.

Results: This study is currently under way. Collected responses will be analyzed using standard descriptive statistics methods, and opinion trends highlighted.

Conclusions: Responses to this questionnaire will be used to formulate recommendations for clinically sound algorithms for hoarseness evaluation and timely referral, and contribute to rational, effective care of patients presenting with hoarseness.

**Perioperative Anticoagulation Management for Microlaryngeal Surgery**

David Francis, MD, MS; Jennifer Dang, BS; Mark Fritz, MD; Gaelyn Garrett, MD

Objectives: No guideline exists to direct management of anticoagulation in patients undergoing microlaryngeal surgery. We compared perioperative-bleeding risk among patients on and off anticoagulation for surgery.

Methods: Patient records who underwent microlaryngeal surgery at our facility (2008 – 2009) were reviewed. Primary outcomes were intra- and perioperative difficulty with hemostasis and estimated blood loss.

Results: Of 287 surgeries, 79 (28.1%) were performed on patients with baseline anticoagulation. We compared the: 1) 29 who stopped, 2) 50 who continued, and 3) 202 never anticoagulated. There was no difference in intra-operative hemostatic difficulty between groups (p=0.46). No post-operative bleeding complications occurred. Estimated blood loss was “none” or “minimal” for all patients and did not differ between groups (p=0.71). Surgical outcomes were not affected by anticoagulation status.

Conclusions: Active anticoagulation did not increase bleeding risk in microlaryngeal surgery. Risks of discontinuation can be avoided and surgery performed safely without affecting surgical outcomes.
Voice Quality after Treatment of T1a Glottic Cancer

Samia Laoufi, MD; Haïthem Mirghani, MD; Francois Janot, MD; Dana M. Hartl, MD, PhD

Objective: Compare voice handicap and quality of life after radiotherapy (RT) versus transoral laser surgery (LS) for T1a glottic carcinoma.

Methods: Retrospective study (1996-2011). Disease-free patients were assessed using Voice Handicap Index (VHI 30) and European Organisation for Research and Treatment of Cancer Head and Neck Quality of Life (EORTC QLQ-HN35) questionnaires.

Results: Of 147 patients, 95 (65%) completed the questionnaires: 51 patients an average of 8 years after RT, and 44 patients an average of 4 years after LS (no difference in age or sex ratio). The average total VHI 30 was 13.1 for RT and 29.2 for LS (p<.0001), with average emotional, physical and functional subscores significantly different. The average total EORTC QLQ-HN35 was 37.7 for RT versus 40.7 for LS (p=.72), with a difference only in the speaking subscore (p=.046).

Conclusion: Long-term subjective voice-related quality of life was worse after LS, with no difference in other domains.

Longitudinal and Multidimensional Voice Evaluation after Transoral Laser Cordectomy

Yaniv Hamzany, MD; Stephane Hans, MD, PhD; Lise Crevier Buchman, MD, PhD; Gideon Bachar, MD; Benjama Luna-Azoulay, MD; Daniel Brasnu, MD

Objective: To multidimensionally analyze voice evolution in patients during the first year after transoral laser cordectomy (TLC).

Methods: Fifty-five males underwent TLC for previously untreated early glottic cancer. Multidimensional voice evaluation was performed before treatment and at 3, 6 and 12 months after surgery. The patients were divided into Group A (34 patients) and Group B (21 patients), who underwent cordectomies types I-III, and types IV-VI, respectively.

Results: In both groups the longitudinal comparison at 3, 6 and 12 months showed statistically significant changes for the voice handicap index (VHI) scores but not for the acoustic analysis. Further comparison of the VHI scores showed significant changes only between 3 and 6 months.

Conclusion: VHI was found to be the most accurate measurement for longitudinal voice evaluation after TLC. Voice quality improved and achieved subjective stability 6 months after surgery. This study shows the limitations of acoustic analysis after TLC.
Endoscopic Partial Laryngectomy: Surgical Salvage after Primary Radiotherapy for Recurrent Laryngeal Cancer

Lindsay S. Reder, MD; Jayme R. Dowdall, MD; Phillip C. Song, MD; Ramon A. Franco Jr., MD

Introduction: Recurrence occurs in 10-35% of patients after primary radiotherapy (XRT) for early glottic cancer (EGC). Commonly total laryngectomy (TL), or open partial surgery is performed in this setting. Beyond oncologic outcomes, preservation of function is considered. Our institution performed endoscopic partial laryngectomy (EPL) with frozen margin analysis for patients with recurrent cancer.

Methods: We retrospectively reviewed 79 patients with EGC treated with EPL during an 8 year experience. The oncologic outcomes of the 19 patients who underwent salvage EPL after radiation failure are reported.

Results: Laryngeal preservation was successful in 14 patients (74%). Mean time from XRT-TL and salvage EPL-TL is 55 and 13 months, respectively. Mean follow up is 28 months. 16 patients are living without evidence of disease. Of the 3 deceased patients, two were without disease at the time of death.

Conclusions: EPL should be considered in select patients with recurrence after primary radiotherapy for EGC.
ALA POSTERS

A Case of Metastatic Squamous Cell Carcinoma Arising in Recurrent Respiratory Papillomatosis

Elizabeth Nicolli, MD; Natasha Mirza, MD

Introduction: Recurrent Respiratory Papillomatosis (RRP) is a condition caused by the human papillomavirus (HPV) that leads to recurrent growth of lesions in the airway.

Case Report: 73 year old female with long-standing RRP presented with an enlarged cervical lymph node, positive for carcinoma.

Discussion: Dysplasia and carcinoma-in-situ are not uncommon in RRP, and cases of carcinoma throughout the aerodigestive tract have been reported. However, to our knowledge this is the first description of nodal metastasis. The potential for metastatic disease in RRP would impact the way dysplasia in these patients is managed.

A Novel Adaptation of Cellular Optics in Fiberoptic Laryngoscopy

Boris Paskhover, MD; Michael Z. Lerner, MD; Christopher A. Schutt, MD; Clarence T. Sasaki, MD

Introduction: Current limitations in inpatient fiberoptic laryngoscopy (FOL) preclude rapid, reliable and inexpensive ability to digitally record and share procedural findings from portable inpatient based fiberoptic scopes. With current advances in cellular based photography, the day to day use of cellular devices capable of high fidelity video optics is widely available.

Methods: A prototype coupler has been developed allowing direct attachment of a cellular device to the eyepiece of a portable scope, thus permitting visualization and recording capabilities.

Results & Conclusions: We have developed a simple prototype attachment that allows resident otolaryngologists within a hospital setting to simply document and share FOL findings without the use of often unavailable endoscopic towers. Further development of such a coupling device could, for example, reduce redundancy of multiple confirmatory examinations on a single patient and reduce diagnostic error by less experienced residents who now have access to more experienced colleagues while enhancing real time resident education by faculty who may be offsite during the examination.
A Rare Case Presentation of Osteoma of the Thyroid Cartilage

Jennifer Rodney, MD; Kyle Tubbs, MD; John Isaacs, MD

Introduction: The purpose of our case report is to describe the second discovered case of osteoma emanating from the thyroid cartilage. This case is only the fifth case of osteoma of the larynx.

Procedure: A case report and review of the literature was performed.

Results: A 56 year-old male presented with progressive neck pain and a popping sensation on lateral rotation of the neck. He subsequently underwent a CT scan of the neck, which demonstrated an ossified mass of the thyroid cartilage. Excisional biopsy was performed and pathologic analysis revealed mature lamellar bone, supporting a pathologic diagnosis of osteoma. The osteoma had not recurred upon follow-up at 6 months.

Conclusion: We report the second case reported of an osteoma of the thyroid cartilage, an exceedingly rare neoplasm which may present as a hypopharyngeal mass.

Adductor Spasmodic Dysphonia: Clarifying Controversy in the Phenomenology and Diagnostic Criteria

Catherine F. Sinclair, MD; Celia Stewart, PhD; Andrew Blitzer, MD, DDS

Objectives: 1) To prospectively evaluate phenomenology of adductor spasmodic dysphonia (AdSD) to facilitate diagnosis; 2) To determine whether botulinum toxin treatment duration affects AdSD symptomatology

Methods: Prospective series of 60 consecutive patients diagnosed with AdSD assessed with questionnaires, VHI-10, and blinded clinician evaluation and examination.

Results: Average age was 61.3 years with mean disease duration of 16.7 years. Mean VHI-10 score was 21.3. Mean USDRS overall symptom severity score was 4.0 with most severe symptoms being roughness, strain/strangle, and expiratory effort (mean scores of 4.0). Abrupt voice initiation, voice arrest and aphonia were uncommon. Of patients who had voice breaks (40%), 60.9% had one sole momentary break recorded. There was no correlation between severity of current patient symptoms and length of botulinum toxin treatment.

Conclusions: Phenomenology of AdSD is variable however vocal strain, tightness and roughness are the most common symptoms and these must be included in any diagnostic questionnaire.
Airflow Measure Outcomes after Balloon Dilatation in Subglottic Stenosis

Meredith Montero-Brandt, MD; Pelin Kocdor, MD; Balaji Rangarathnam, BS; Richard I. Zraick, PhD; Ozlem E. Tulunay-Ugur, MD

Introduction: Subglottic stenosis is a difficult disease to manage without well-established treatment algorithms. Due to the dire consequences of the disease, the quality of life aspects have not gained much interest. These patients can also have poor vocal quality, especially after multiple surgeries. One of the etiological factors for this is reduced airflow through the glottis. In this preliminary study we aimed to evaluate the changes in airflow and vocal quality before and after endoscopic dilatation.

Methods: Six patients were included who underwent phonatory aerodynamic measurements and VHI scoring.

Results: There were increases in phonation time, mean expiratory volume and mean sound pressure levels pre and post-procedure.

Conclusions: Aerodynamic measurements can play a role in the management of subglottic stenosis patients, with regards to the assessment of quality of life and possibly to determine surgical timing.

An Unusual Case of Laryngeal Transection - Presentation, Management, And Outcome

Amit Patel, MD; Brian E. Benson, MD

Objectives: We present an unusual case of a self-inflicted, non-lethal complete supraglottic laryngeal transection.

Methods: Case report

Results: A 21 year-old man attempted suicide by lacerating his neck with a kitchen knife. He was intubated through the wound in the field. Although there was no significant vascular injury, there was a complete transection of the larynx at the level of thyrohyoid membrane and false vocal folds. A tracheostomy was subsequently performed and the wound was reconstructed in five layers: mucosa, laryngeal framework, strap muscles, platysma, and skin. The larynx was stented with a cut endotracheal tube. The patient was decannulated after four weeks and was discharged on a regular diet. Three-month post-operative laryngoscopy revealed bilateral superior laryngeal nerve palsy, but no evidence of supraglottic stenosis.

Conclusion: This case presents an unusual laryngeal injury with discussion of management and outcome.
Animal Model of Paradoxical Vocal Fold Movement Following RLN Injury

Kohei Nishimoto, MD, PhD; Yoshihilo Kumai, MD, PhD; Eiji Yumoto, MD, PhD

Objective: To establish an animal model of paradoxical vocal fold movement (PVFM) following RLN injury.

Methods: Left RLN in rat was transected, anastomosed, and placed in a silicone tube. At 2 to 10 weeks after the treatment, VF movement was recorded through an endoscope. We calculated the motion angle of arytenoid opening by subtracting the angle during expiration from inhalation, and evaluated the ratio of motion angle at the treated side to the normal side. Negative value indicates the presence of PVFM. Electromyography of the Thyroarytenoid and Posterior cricoarytenoid muscles was performed.

Results: The mean motion angles were 7.7±37.6% and 16.5±20.4% at 4 and 10 weeks, respectively. One third of these animals presented negative values in VF movement and synkinetic signals in Electromyography.

Conclusions: We have established animal model of PVFM following RLN injury. This model might be useful for future studying of laryngeal synkinesis.

Assessing Factors Related to the Pharmacologic Management of Laryngeal Diseases and Disorders

Seth M. Cohen, MD, MPH; Jaewham Kim, PhD; Nelson Roy, PhD; Mark S. Courey, MD

Objective: To examine how age, gender, comorbidity, geography, provider type, and laryngeal pathology influence the use of pharmacological treatment in patients with laryngeal disorders.

Methods: Retrospective analysis from a large, nationally representative administrative U.S. claims database.

Results: 258,705 patients had a laryngeal disorder and an outpatient visit with a primary care physician (PCP), otolaryngologist, or both. 135,973 (52.6%) patients received a medication, and 122,732 (47.4%) did not. PCPs had a greater odds ratio (OR) for medication treatment than otolaryngologists, acute laryngitis had the highest OR for pharmacologic treatment, the south region had the highest OR for medical treatment, and patients with comorbid conditions had a higher OR for medication use than those without comorbid conditions (p < 0.001, logistic regression). Variable prescription patterns were also noted for age and gender.

Conclusion: This study found that multiple factors are associated with the use of medical treatment for laryngeal disorders.
SCIENTIFIC SESSIONS

Bipolar Radiofrequency-Induced Thermotherapy Versus Botulinum Toxin for the Treatment of Adductor Spasmodic Dysphonia

Shaun C. Desai, MD; Randy C. Paniello, MD

Introduction: Repeated botulinum toxin injections has recently become the standard of care for treatment of adductor spasmodic dysphonia, however the difficulty in obtaining repeated injections and the expensive cost may limit the availability to some patients. The purpose of this study is to assess the feasibility of a new treatment technique using radiofrequency ablation of the thyroarytenoid (TA) muscle via a novel mini-thyrotomy approach to help weaken the force of adduction.

Methods: Fifteen canine dogs were used in a well-established model to study laryngeal adductor pressure, induced phonation stroboscopy, and histologic findings.

Results: The mean maximal laryngeal adductor pressure was reduced immediately and at 1, 3, and 6 months in all study groups using the bipolar radiofrequency via a mini-thyrotomy approach. The mucosal wave based on induced phonation stroboscopy was still present in the canines studied. Preliminary results indicate no injury to the lamina propria based on histologic findings.

Conclusion: Radiofrequency ablation of the TA muscle via a mini-thyrotomy approach is a feasible technique that shows long-term encouraging results in the treatment of spasmodic dysphonia. Future human trials are under way at our institution to further characterize this technique.

Comparative Investigation of Biological Effects of Two Vocal Loading Conditions in Human Subjects

John Ingle, MD; Clark A. Rosen, MD; Douglas Roth, MS; Leah Helou, MS; Amanda Gillespie, MS, CCC-SLP; Aaron Zielger, MS; Patricia Hebda, PhD

Purpose: To identify which of two vocal loading conditions produce the most reliable evidence of vocal fold inflammation in human subjects.

Procedures: Twenty vocally healthy women were randomized to one of two 2-hr vocal loading conditions: (1) constant reading at 75-90 dB, or (2) constant reading at spontaneous speech dB + 20 dB or greater, as established by subjects’ indication of tolerance. Vocal fold secretions were suctioned before loading, immediately following loading, and 4 hours post loading. Secretions were analyzed by blinded investigators using ELISA, to assess effects of loading on HMGB1 and IL-1B.

Results: The 75-90 dB loading condition produced more reliable biological effects of vocal loading at follow-up than the subject-specific dB condition, for the markers examined.

Conclusions: Two hours of vocal loading at 75-90 dB appear to generate consistent biological effects of vocal loading in women, as detected from laryngeal secretions.
Correlating Singing Voice Handicap to Videostrobolaryngoscopy in Healthy Professional Singers

Liliana Castelblanco, BA, MM; Andre de Quadros, MEd; Seth M. Cohen, MD, MPH; J. Pieter Noordzij, MD

This study correlates the Singing Voice Handicap Index (SVHI) scores with videostrobolaryngoscopy in healthy professional singers as a measure of self-perceived vocal health vs. actual pathology seen on exam. Exams were blindly rated by 2 independent fellow-trained laryngologists who assessed vocal cord appearance and function (100% intra-rater reliability [p<.0001]). The correlation between SVHI scores and total pathologic findings seen on videostrobolaryngoscopy were analyzed using linear regression, which found no significant correlation (p=0.5829). SVHI scores (mean of 22.45/144) were as expected for healthy singers. However, while all singers self-identified as healthy, laryngeal pathology was relatively common, which possibly indicates a minimal impact on their singing voice and/or perception of vocal health. These findings demonstrate that laryngeal pathology alone does not dictate nor fully explain the sound or apparent health of a professional singer. Sustaining good vocal health is complex, and even experienced singers may not objectively assess the presence of pathology.

Correlational Study of VHI-10 and Clinical Objective Voice Measures

Jackie Gartner-Schmidt, PhD; Amanda Gillespie, MS, CCC-SLP; William Gooding, PhD; Christine Harrison, BA; Clark A. Rosen, MD

Limited data is known regarding the relevancy of objective voice measurements to specific voice disorders. Specifically, these questions are unknown: 1. Do changes in VHI-10 reflect changes in voice measures? 2. Are certain objective voice measures more sensitive to change for some disorders than others? A correlational study of change in VHI-10 with changes in objective voice measures across five voice disorders was completed. Absolute largest change in VHI-10 measures of 150 subjects from atrophy, lesion, scar, MTD and paralysis groups were linked to corresponding changes in audio-perceptual, acoustic and aerodynamic measures. Strongest correlation with change in VHI-10 score was audio-perceptual (r=0.54) across all voice disorders and phonatory flow in speech (r=0.51) in paralysis group only. All other measures registered a weak-to-no correlation with change in VHI-10. Objective voice diagnostic measures need to be more sensitive and disorder-specific.
SCIENTIFIC SESSIONS

Cytoskeleton of Vocal Fold Stellate Cells Unphonated for a Long Period

Kiminori Sato, MD; Takashi Kurita, MD; Takeharu Ono, MD; Shun-ichi Chitose, MD; Hirohito Umeno, MD; Tadashi Nakashima, MD

Our previous studies have supported the hypothesis that the tension caused by phonation regulates the behavior of the Vocal Fold Stellate Cells (VFSCs) in the human maculae flavae. Tensile and compressive strains have direct effects on cell morphology and structure including changes in cytoskeletal structure and organization. Cytoskeletons play a role as mechanoreceptors for the cells. The microstructure of the intermediate filaments and the expression of their proteins were investigated regarding the VFSCs in maculae flavae unphonated for a long period. Adult vocal fold mucosa unphonated for 11 years was investigated by immunohistochemistry and electron microscopy. The intermediate filaments of the VFSCs were fewer in number. And the expression of their characteristic proteins (Vimentin, Desmin, Glial Fibrillary Acidic Protein) was also reduced. The function and fate of VFSCs are regulated by various microenvironmental factors. In addition to chemical factors, mechanical factors could also modulate VFSC behaviors.

Developing a Reporter Assay for the Next Generation of Biomaterials: Porous-Wall Hollow Glass Microspheres (PW-HGMS)

Aaron Cunningham, BS; Hunter Faircloth, BS; Matthew Jones, MSECE; Tiffany Lewis, MS; George Wicks, PhD; Paul Weinberger, MD

Nanotechnology is a developing field, and medical applications within Otolaryngology remain undefined. PW-HGMs are a novel biomaterial, developed by the U.S. Department of Energy’s Savannah River National Laboratory. We hypothesize that these microspheres represent a viable, localized, drug delivery device for therapeutic agents. Current research involving PW-HGMs is limited by lack of a useful assay for measuring molecular release kinetics. We developed such an assay using nanocrystals (Qdot 605) as a reporter. Spectral output of known concentrations of aqueous Qdot 605 was measured by the Nuance™ FX Multispectral Imaging System. These data were plotted and fit to a curve. Qdot 605 emission demonstrates excellent correlation with concentration in a log-log relationship \(R^2 = 0.9916\), Mean Squared Error = 11.2%. Empirically, we elucidated a method to measure Qdot concentration using fluorescent microscopy. While we recognize the simplicity of these results, their application in illuminating functional characteristics of PW-HGMs carries great potential.
Distribution of Hyaluronic Acid Synthase in Rat Vocal Fold

Atsushi Suehiro, MD, PhD; Tsuyoshi Kojima, MD, PhD; Bernard Rousseau, PhD, CCC-SLP

Hyaluronan (HA) is a critical component of the vocal fold (VF) lamina propria (LP). HA is an important factor contributing to VF viscoelasticity. Three classes of Hyaluronic Acid Synthase (HAS) have been identified in mammals: HAS1, HAS2, and HAS3. There have been some studies performed in skin that have revealed that high molecular-weight HA is synthesized by HAS1 and HAS2 and low molecular-weight HA is synthesized by HAS3. However, the function and localization of HASs in the LP of VF are unknown. In this study, the distributions of protein and gene expression of HASs were investigated. Immunohistochemistry revealed that protein expression of HAS1, HAS2, and HAS3 were localized at the epithelial basal layer of VF epithelium. In-situ hybridization revealed that the mRNA expression of HAS1 was abundantly expressed in all layers of LP and the mRNA expression of HAS2 and 3 were highest in the superficial layer of LP.

Dysphonia Due to Isolated Cricothyroid Muscle Dystonia: A Case Report and Review of Literature

Shannon Kraft, MD; Jana Childes, CCC-SLP; Joshua Schindler, MD

Purpose: We report a case of laryngeal dystonia resulting from isolated cricothyroid (CT) muscle dysfunction.

Methods: We discuss the clinical, stroboscopic, acoustic, and electromyography (EMG) findings, and review the literature.

Summary: The patient presented with eight months of fluctuating, progressive hoarseness, particularly during phone use. Her Voice Handicap Index (VHI) was 87. Her voice revealed grade 3 roughness and strain. Laryngoscopy was remarkable for mild edema. A trial of voice rest and oral corticosteroids, followed by speech therapy, did not improve her voice. Microdirect laryngoscopy to evaluate for sulcus vocalis was unremarkable. During diagnostic EMG, the CT demonstrated increased latency (750 msec) and increased activity in all vocal tasks. After CT injection with botulinum toxin bilaterally, her VHI improved to 35.

Conclusions: EMG can be a useful adjunct in the diagnosis of dysphonia. To our knowledge, this is the only report of laryngeal dystonia due to isolated cricothyroid dysfunction.
Effective Embryoid Body Formation from Induced Pluripotent Stem (IPS) Cells for Regeneration of Respiratory Epithelium

Koshi Otsuki, MD, PhD; Mitsuyoshi Imaizumi, MD, PhD; Yukio Nomoto, MD, PhD; Ikuo Wada, PhD; Masao Miyake, PhD; Koichi Omori, MD, PhD

Purpose: We have demonstrated the potential use of induced Pluripotent Stem (iPS) cells for regeneration of respiratory epithelium by culturing embryoid bodies (EB). The present study aimed to determine effective EB formation for iPS cell differentiation into respiratory epithelium.

Methods: iPS cells cultured on a gelatin-coated dish were seeded on low-attachment plates for generating EB. In several conditions of cell numbers and suspension time, EB was transferred to a gelatin-coated dish supplemented with growth factors. The shape, size, aggregation and adhesion of EB for iPS cell differentiation were evaluated. The cultured tissue was histologically examined.

Results: EB appropriate for differentiation was observed in the condition of 1,000–2,000 cells after 5–7 days of suspension culture. The respiratory epithelium-like tissue was histologically observed after 21 days of culture. The ciliary epithelium was immunohistologically confirmed.

Conclusions: This study demonstrated effective EB formation from iPS cell for regeneration of respiratory epithelium.

Endoscopic Management of Combined Severe Supraglottic and Posterior Glottic Stenosis Due to Chemotherapy and Radiation

Shaina Rubino, BS; Michael Pitman, MD

Objective: Combined posterior and supraglottic stenosis (CS) is occurring more frequently as a complication of chemoradiation. Scarring and contracture causes airway obstruction and vocal fold immobility. Traditional surgical management via laryngofissure is difficult and fraught with complication due to poor tissue healing. We aim to describe a novel endoscopic surgical technique that can be performed successfully with minimal morbidity.

Methods: A case study illustrates the surgical technique employing a large laterally based flap encompassing the tissue overlying the vestibular fold, both arytenoids and the interarytenoid area. The flap is utilized as a posterior glottic keel by rotating it anteroinferiorly and suturing it in place.

Results: The bilateral vocal folds, midline and immobile preoperatively, regained normal motion. The supraglottic airway was restored.

Conclusion: Successful endoscopic treatment of CS with bilateral vocal fold immobility is possible using a large laterally based flap, even in the face of tissue changes secondary to chemoradiation.
European Influences on Early American Laryngology

Steven M. Zeitels, MD

Over the past two centuries, there has been a rich unique tradition of laryngological collaboration, education, and interdependent innovation between Europe and America. Key aspects and perspectives of this transatlantic cooperation will be reviewed. An auspicious beginning was initiated when Horace Green was influenced by Trouseau (1844), and subsequently created the first specialized airway practice in the United States. Consequently, Green reported early tracheal cannulation and the first direct laryngoscopy. Shortly thereafter, the groundbreaking efforts of Garcia, Turck, and Czermak established the field of laryngology in Europe (1858). The advancement of Laryngology was initially delayed in the US due to its Civil War, however, subsequently underwent accelerated development under the leadership of Elsberg and Solis Cohen. Then the work of Mackenzie, Fraenkel, Kirstein, and Killian paved the way for the exceptional achievements of Jackson and Lynch as they battled the ever-growing threat of laryngeal cancer in the early 20th century.

Ex Vivo Perfused Larynx Model of Phonation: Intermediate Study

N. Scott Howard, MD, MBA; Abie Mendelsohn, MD; Ming Ye, MD; Gerald S. Berke, MD

Objectives: Development of an ex vivo functional laryngeal model that is capable of thyroarytenoid and cricothyroid muscle stimulation adaptable to human ex vivo laryngeal studies.

Methods: Fifteen canine larynges were surgically removed and perfused ex vivo with various techniques. Stimulation of superior laryngeal nerve (SLN) and recurrent laryngeal nerve (RLN) allowed assessment of phonation and muscular contractability.

Results: Neuromuscular stimulation and phonation were possible in the ex vivo larynx. Heparinized whole blood was superior to other perfusion solutions. Modification of the perfusion to a pulsatile pump system enabled the phonation time to increase from second long bursts reported in the initial study to prolonged phonation efforts that mimicked in vivo studies.

Conclusions: The ex vivo larynx model has the potential to enable ex vivo studies of the recovered human larynx. This model has the potential to prove or disprove former laryngeal mechanics studies that have been performed on other non-physiologic, non-human or non-functional human physiologic models.
Factors Affecting Safe Extubation of Head & Neck Surgical Patients

Joseph P. Bradley, MD; Evan M. Graboyes, MD; Dorina Kallogjeri, MD, MPH; Brian Nussenbaum, MD

Otolaryngologists may leave a patient intubated after surgery of the aerodigestive tract instead of performing a tracheostomy, but no evidence-based guidelines exist for determining which patients are safe to extubate. Our aim was to identify the factors that make patients more likely to fail an extubation attempt. We retrospectively reviewed intubated patients admitted to the otolaryngology step-down unit over a six-year period to identify the extubation failure rate and the factors associated with post-extubation intervention. Nine of 75 patients (12%) failed extubation with four of those requiring an emergency surgical airway. Patients with a neck hematoma were 4.8 times more likely to fail extubation (p=0.043). The type of surgery, presence of a flap, number of neck dissections, ligation of major vessels, and use of steroids were not significant predictors. These results suggest that otolaryngologists have little objective evidence for guiding safe patient extubation.

Functional Electrical Stimulation of Paralyzed Laryngeal Muscle Improves Ventilation and Voice Outcome over Conventional Surgery to Enlarge the Airway

Yike Li, MD; Elizabeth C. Pearce, MD; Rajshri Mainthia, MD; Sanjay Athavale, MD; Cheryl Billante, PhD; David L. Zealear, PhD

Conventional surgeries for bilateral laryngeal paralysis sacrifice voice to enlarge the airway. Functional electrical stimulation of the posterior cricoarytenoid muscle offers potentially a more physiologic treatment. The purpose of this study was to compare ventilation and voice outcome with cordotomy to that obtained with unilateral laryngeal pacing. Data were obtained from five pacing patients, and twelve cordotomy subjects. Ventilation was indexed by Peak Inspiratory Flow (PIF) and voice quality was assessed using the GRBAS scale. Pacing demonstrated effective improvement in ventilation when compared to pre-treatment PIF values (p=.04). The final outcome was also superior to cordotomy group (p=.05). As for voice outcome, electrical stimulation didn't alter voice quality (p=.62). In contrast, GRBAS scores from cordotomy patients confirmed a significant deterioration in voice quality (p=.02). In summary, electrically stimulated vocal fold opening provided superior ventilation in patients with bilateral laryngeal paralysis, and had no effect on voice quality when compared with conventional surgical therapy.
**Isolated Juvenile Xanthogranuloma in the Larynx of a Three-Year-Old Child**

Ai Kawamoto, MD; Yukio Katori, MD; Youhei Honkura, MD; Masaki Ogura, MD; Takahiro Suzuki, MD; Toshimitsu Kobayashi, MD

Introduction: Xanthogranuloma (JXG) in the larynx is very rare but can cause severe respiratory distress. We report a case of isolated laryngeal JXG treated by laryngomicrosurgery.

Procedures: A 3-year-old girl presented with hoarseness and inspiration stridor. A bulky tumor was found in the right glottic to subglottic region. Subtotal resection of the tumor was carried out by laryngomicrosurgery.

Results: The airway distress was diminished after the operation. The resected specimen showed proliferations of histiocyte-like-cells and spindle cells, and immunohistochemistry demonstrated positivity for CD68, lysozyme, alpha1-anti-chymotripsin, vimentin and negativity for CD1a, leading to diagnosis of JXG. Six weeks later, the JXG recurred and a second procedure using a CO2 laser was needed. The tumor didn’t re-grow thereafter, and there was no residual voice handicap.

Conclusion: Because of its favorable prognosis and tendency for spontaneous regression, JXG in the larynx needs to be considered carefully with regard to whether surgery is necessary.

**Knowledge, Experience, and Anxieties of Young Classical Singers in Training**

Paul E. Kwak, MD; C. Richard Stasney, MD; Jeremy Hathway, CCC-SLP; Julina Ongkasuwan, MD

Background: There is a paucity of literature on what classical singers-in-training know about vocal form, function, and pathology and what their anxieties are regarding their health.

Methods: 113 singers studying classical singing at The Juilliard School, The Rice Shepherd School of Music, the Houston Grand Opera Studio, and the Lindemann Young Artist Development Program of The Metropolitan Opera were surveyed. An 80-item questionnaire was administered regarding vocal habits, laryngeal anatomy, physiology, services provided by otolaryngologists and speech pathologists, and anxieties regarding examinations and pathology.

Results: There were no significant differences, across levels of training, in 1) rates of correct response to knowledge-based questions (mean 36%, SD 7.2) 2) self-reported levels of anxiety regarding otolaryngologic examination and vocal pathology (63% reported moderate to severe anxiety, SD 5.6), or 3) diagnoses of vocal disorders (mean 8%).

Conclusions: The lack of difference in knowledge across levels of training suggests a need for instruction in vocal health at American conservatories.
Malignant Fibrous Histiocytoma
Melanie Lerew, MD; Priya Krishna, MD

Malignant fibrous histiocytoma is a rarely encountered tumor in the larynx. Here we report the case of an 88 year old male who presented to the Loma Linda University Voice and Swallow Center with complaints of worsening hoarseness and difficulty breathing. The patient was found in the office to have an obstructive laryngeal mass. He subsequently underwent an emergent awake tracheostomy for stabilization of the airway followed a few days later by a laryngofissure with excision of the mass. The final pathology was designated as pleomorphic sarcoma with focal osseous transformation. The patient healed well from surgical resection, had improved voicing and breathing and elected to forgo further treatment.

Modified Balloon Dilatation of Tracheostomal Stenosis
Behrad Aynehchi, MD; Gady Har-El, MD

Introduction: The advent of airway balloons in the past decade has allowed for less invasive means of addressing the potentially severe problem of tracheostomal stenosis. We describe our experience and potential pitfalls with this novel technique. Procedures: The stenotic stoma of an irradiated laryngeal cancer patient was dilated while awake. The balloon was inserted under direct visualization. A truncated red rubber catheter was secured with a long silk suture and used to protect the rigid balloon tip in order to prevent perforation through the posterior tracheal wall or cervical esophagus. Results: A standard tracheostomy tube was then able to be safely inserted. Conclusions: Compared to formal surgical stomaplasty, balloon dilatation is a potentially simple and less invasive technique. In contrast to extensively described approaches for tracheal and subglottic balloon dilatation, the rigid balloon tip must be protected and held firm when dilating the stoma in order to avoid unintended trauma.
Morell Mackenzie’s the Hygiene of the Vocal Organs – A Practical Handbook for Singers and Speakers; Study in Longevity

Robert J. Ruben, MD

Introduction: Mackenzie’s The Hygiene of the Vocal Organs (1886), is his only book in active use for over a hundred years. To what does this seemingly minor work owe its outstanding longevity?

Method: Bibliographic history of all editions, commentary, and library circulation records are considered.

Results: Published in five languages, the nine editions are inexpensively produced. Succeeding editions conveniently place technical information from earlier ones in an appendix. Mackenzie answered Semon’s inaccurate translation of Garcia’s review. Mackenzie’s advice, including not singing with any vocal difficulty indication, was supported through time.

Conclusion: Mackenzie’s concise, inexpensive, authoritative Hygiene provided professional voice users, teachers and physicians valid advice plus the authority -- countering “get on with the show” pressures -- to decline performing. Heretofore neglected, Hygiene may be Mackenzie’s most broadly influential contribution.

Mucoepidermoid Carcinoma of the Larynx, How Rare of a Finding Is It?

Akhil J. Khosla, BS; Jessica A. Lorenzana, BS; James C. Wang, BS; Joehassin Cordero, MD

The majority of malignancies of the larynx are classically thought of as and typically determined to be Squamous Cell Carcinoma (SCC). Mucoepidermoid Carcinoma (MEC), on the other hand, is an extremely rare pathology with less than 100 cases being reported in the literature worldwide. Less than 1% of laryngeal malignancies are diagnosed as MEC. Due to similar histopathologic features of both neoplasms they are often misdiagnosed with one another. Our objective is to add to the literature a rare case with the initial pathology of SCC that was further determined to be a high-grade mucoepidermoid transglottic carcinoma invading the thyroid gland. This finding used a microsuspension laryngoscopy with biopsies to diagnosed SCC. A finalized report, post total laryngectomy, determined the true diagnosis of MEC. Careful analysis of the histology and appropriate diagnosis is crucial to treatment options and prognosis. Despite its rarity, MEC may occur more often than reported.
Neuromuscular Control of Fundamental Frequency (F0)

Dinesh K. Chhetri, MD; Juergen Neubauer, PhD; David A. Berry, PhD

The roles of thyroarytenoid (TA), cricothyroid (CT), and lateral cricoarytenoid (LCA) muscles in control of F0 at phonation onset was investigated in an in vivo canine model using graded distal neuromuscular stimulation. F0, glottal posture, and vibratory parameters were measured at 8 levels of paired LCA and CT muscle activation conditions (from threshold to maximum activation). Each activation condition was repeated for 5 distinct levels of TA activation. Thus, a total of 320 distinct laryngeal activation conditions were evaluated. F0 ranged from 100-1000 Hz. CT activation was always required for F0 increase. TA activation provided the glottal closure needed for phonation onset at higher levels of CT activation. LCA was synergistic with CT in increasing F0 at mid levels of TA activation, while high levels of TA activation led to decrease in F0. These findings have implications for vocal training as well as treatment of laryngeal paralysis and paresis.

Robotic Microlaryngeal Surgery: Is It Possible?

Ian J. Lalich, MD; Steven M. Olsen, MD; Dale C. Ekbom, MD

Robotic surgery is increasingly used for a variety of head and neck surgical procedures, but has yet to be adapted for robotic microlaryngeal surgery (RMLS). Current retractor technology is limited by the following: poor tongue retraction, poor oral commissure retraction, poor larynx visualization, and laryngeal blades that do not take advantage of the robot’s ability to operate without line of site exposure. Additionally, adequate instrumentation for RMLS is lacking. We performed a feasibility study of RMLS using a newly designed robotic retractor in a cadaver model with the goal of routinely exposing the glottis. Microlaryngeal instrumentation was also adapted for the da Vinci Surgical Robot effector arms. RMLS surgery was successfully performed including microflap elevation, anterior commissure surgery, false cordectomy, true cordotomy/cordectomy, and arytenoidectomy. Photographic and video documentation was obtained demonstrating feasibility. We conclude that the newly designed laryngeal robotic retractor and instrumentation provides an avenue to perform RMLS.
SCIENTIFIC SESSIONS

Safety and Efficacy of Restylane for Office Based Injection Medialization-A Prospective Case Series in One Institution

Ashleigh Haklerman, MD;
Paul Bryson, MD; Michael S. Benninger, MD

Background: Restylane (hyaluronic acid) is a relatively new material being utilized for temporary vocal cord medialization. Few studies have evaluated the safety, complication rate, and length of benefit derived from Restylane injection medialization. We report on 78 patients who underwent office based injection medialization with Restylane.

Methods: Prospective case series of patients who underwent office based injection medialization with Restylane during a 2 year period was performed.

Results: 103 injections in 78 patients were reviewed. A total of 2 adverse events occurred (0.019%). Of the 60 patients with adequate follow up information, the average length of benefit from injection medialization with Restylane was 10.24 weeks. No inflammatory reactions to Restylane occurred. VHI scores measured within 8 weeks of medialization improved by an average of 25.5 points or 36%.

Conclusion: Restylane is a safe and effective temporary material for office based injection medialization. This represents the largest series to date using Restylane.

Sudden Onset of Spasmodic Dysphonia in Pregnancy

Ashish Ankola, MD; Lucian Sulica, MD;
Thomas Murry, PhD

Objective: Spasmodic dysphonia (SD) is usually identified in the elderly and with gradual onset. A study of young (< 40 y.o.) patients with sudden onset including a subset related onset to pregnancy. The purpose of this study was to identify factors related to onset of SD in a population during or after pregnancy.

Methods: Retrospective chart review. 315 charts identified 6 patients with sudden onset of SD related to pregnancy. An age-matched group with sudden onset served as controls. All completed a 20-question survey of factors relevant to SD.

Results: The average age of onset in both groups was 30. Four had onset of SD in the postpartum period, the other two during pregnancy. Factors including stress, bed rest and extensive voice use were found in the study group.

Conclusions: Sudden onset of SD can occur in young females with clinical profiles that differ from young SD patients not pregnant.
The Characteristics of Co-Morbidities and Factors Associated with Grade and Number of Balloon Dilations (NBD) in Adult Laryngotracheal Stenosis (LTS) Patients

Pelin Kocdor, MD; Eric R. Siegel, MD; James Y. Suen, MD; Gresham Richter, MD; Ozlem E. Tulunay-Ugur, MD

Introduction: The purpose of this study was to characterize the co-morbidities, evaluate the relationship of this with grade and NBD in LTS patients.

Methods: Retrospective review. Patients demographics, co-morbidities, grade of stenosis, NBD, dilation intervals were recorded from 2002-2012, at a tertiary voice center.

Results: 101 patients with LTS were identified. There was female dominance with 71%. 16% (17 of 101) were idiopathic. The NBD were between 0 to 24 (mean= 3.3). The average time between dilations was 0.2 to 50 months (mean=8.9). The patients with idiopathic stenosis was found to have a lower grade (p=0.003) 51% (52 of 101) of the patients had tracheotomy and 63% of the patients who could not be decanulated had a BMI (body mass index) of > 30.

Conclusion: There was no statistically significant difference between patients’ age, BMI and co-morbidities with the grade of stenosis, number of balloon dilations and surgical intervals.

The Effect of Astaxanthin on Vocal Fold Wound Healing

Masanobu Mizuta, MD; Ichiro Tateya, MD, PhD; Nao Hiwatashi, MD; Shin-ichi Kanemaru, MD, PhD; Juichi Ito, MD, PhD; Shigeru Hirano, MD, PhD

Objectives: Our previous study demonstrated that a large amount of reactive oxygen species (ROS) is produced during early-phase vocal fold wound healing. In the current study, we investigated the effect of astaxanthin, which is a strong antioxidant, on oxidative stress and scarring during vocal fold wound healing.

Methods: Sprague-Dawley rats were administered orally by astaxanthin (Ast-treated group, 100mg/kg/day) or olive oil (sham-treated group). Vocal folds were injured unilaterally, harvested at each time point, and subjected to histological and immunohistolocgical examinations.

Results: In the post-injury day 1, the intensity of immunostaining for 4-hydroxynonenal which is an oxidative stress marker was reduced significantly in the Ast-treated group compared to the sham-treated group. Histological examinations showed significantly less tissue contraction with favorable restoration of hyaluronic acid in the Ast-treated group compared to the sham-treated group.

Conclusions: Astaxanthin contributes in reduction of ROS after vocal fold injury, which leads improvement of wound healing.
SCIENTIFIC SESSIONS

The Effect of Number of Speaking Trials on Speech Aerodynamic Measures Obtained from Geriatric Speakers with Normal Voice

Richard I. Zraick, PhD; Kathy L. Shapley, PhD; Elizabeth K. McWeeny, MS; Lanzy Brazear, BS; Shameka Clark, MS; Ozlem E. Tulunay-Ugur, MD

Introduction: Due to the decline in neuromotor control of the larynx, and deteriorating functions in an aged pulmonary system, intra-subject variability may be high with speech aerodynamic measurements. The purpose of this study was to examine intra-subject variability across select aerodynamic measures of voice produced by geriatric individuals with normal voice.

Design: Prospective data collection.

Procedures: 47 speakers age 60 years or older (16 male and 31 female) produced five trials of select speaking tasks. For each task, speech aerodynamic measures were analyzed and the values for the first trial were compared to the mean values of the first three trials and to the mean values of all five trials.

Results: For many speaking tasks, there was a statistically significant trial effect, particularly as the number of trials increased. Conclusions: The clinical implications of the findings for the assessment of the voice of geriatric speakers are discussed.

The Effect of Topical Anesthesia on the Characteristics of Voice

Amanda Hu, MD; James Eaglin Moore, MD; Bridget Rose, MA, CCC-SLP; Stephanie Fort, MM, MS; Robert T. Sataloff, MD, DMA

Although topical anesthesia is used routinely before videostroboscopy, no study has determined whether topical anesthesia changes voice quality. Our aim was to evaluate whether topical anesthesia changes the characteristics of a patient’s voice. Forty seven patients with laryngeal pathology (e.g. reflux, paresis, benign vocal fold lesions, etc.) had their voices recorded before and after intraoral topical cetacaine spray. Standardized consensus auditory perceptual evaluation of voice (CAPE-V) protocol was used for the voice recordings. The primary outcome measure was CAPE-V. Recordings were randomly presented to two blinded speech language pathologists specialized in voice. Secondary outcome measures were fundamental frequency (Fo), jitter, shimmer, and noise-to-harmonics ratio (N2H) on sustained /i/ and speaking Fo. There was no significant voice change after topical application of cetacaine, as summarized in the table below.

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<th>Pre topical anesthesia</th>
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<td>CAPE V overall</td>
<td>31.9</td>
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<td>CAPE V roughness</td>
<td>26.3</td>
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<td>CAPE V breathiness</td>
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<td>/i/ Fo</td>
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<tr>
<td>Female (n = 29)</td>
<td>213.4 + 25.4</td>
<td>210.9 + 25.4</td>
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<tr>
<td>Male (n = 18)</td>
<td>126.4 + 25.1</td>
<td>133.8 + 25.4</td>
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<td>/i/ jitter</td>
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The Incidence of Underlying Pathology in Patients Initially Diagnosed with Laryngopharyngeal Reflux Disease

Benjamin Rafii, MD; Stratos Achlatis, MD; Milan R. Amin, MD; Ryan C. Branski, PhD

Introduction: We sought to determine the incidence of laryngeal pathology in a cohort of patients presenting to a voice care center with an initial diagnosis of laryngopharyngeal reflux disease (LPRD) as the sole etiology for their hoarseness.

Methods: Data were accrued prospectively on 20 new patients presenting with a primary complaint of dysphonia, and reporting a previous diagnosis of LPRD by a general practitioner or otolaryngologist.

Results: Most subjects were on anti-reflux medications for at least three months with no improvement in their dysphonia. On examination, aberrant laryngoscopic/stroboscopic findings which were at least suggestive of being causal to the patient complaint of dysphonia were observed in all 20 patients. These findings ranged from muscle tension dysphonia to malignancy with benign lesions predominating.

Conclusions: Our data suggest that patients with symptoms of LPRD who do not respond to initial acid suppressive therapy may in fact have distinct laryngeal pathology.

The Natural Time Course of Post-Microflap Healing and Restoration of Vibratory Function Following Vocal Fold Microflap Surgery in a Rabbit Model

Tsuyoshi Kojima, MD, PhD; Joshua R. Mitchell, MD; Bernard Rousseau, PhD, CCC-SLP; C. Gaelyn Garrett, MD

Objective: An in-vivo rabbit phonation model was used to investigate the dynamic status of post-microflap healing and return of vibratory function for up to seven days following vocal fold microflap surgery.

Methods: Rabbits underwent experimentally induced phonation at day 0, 1, 3, 5, and 7 after microflap. Microflap healing, symmetry, mucosal wave, and amplitude of vibration were assessed using high-speed videoendoscopy at 10000 frames per sec.

Results: High-speed videoendoscopy revealed cover-body separation and vibratory disturbances at day 0, followed by focalized tissue stiffness but return of mucosal wave and amplitude by day 3, and normal tissue pliability and vibration by day 7.

Conclusions: Results revealed the natural time course of post-microflap healing and restoration of vibratory function following vocal fold microflap surgery in a rabbit model. The implications of these data will be discussed in the context of currently available empirical evidence regarding early versus delayed tissue mobilization after microflap.
The Presence of Supraglottic Hyperfunction during Vocalization in Healthy Singers

Ross M. Mayerhoff, MD; Marco Guzman, MS; Cristina Jackson-Menaldi, PhD; Jayme R. Dowdall, MD; Ahmed Maki, DO; Adam D. Rubin, MD

Background: Supraglottic hyperfunction is implicated in vocal pathology. The goal of this study is to investigate the severity and patterns of supraglottic hyperfunction in healthy singers of different voice types while phonating with different pitch, loudness, and vowel sounds.

Methods: Classically-trained singers with at least five years of voice training and absence of any voice pathology within the past year were included. Flexible endoscopic voice evaluations were recorded and edited to include samples of different pitch ranges, levels of loudness, and vowels. Sound was removed. Three blinded laryngologists were asked to assess medial and anterior-posterior supraglottic compression using a visual analog scale for each sample.

Results: Thirty-six subjects were evaluated: 11 sopranos, 11 mezzo-sopranos, one alto, five tenors, six baritones, and two basses. Evaluations by blinded reviewers are pending.

Conclusion: Supraglottic hyperfunction may not always be pathologic. Patterns may vary depending on voice type, pitch range, and vowel formation.

The Safety and Efficacy of Vocal Fold Injection after Open Airway Reconstruction

John Paul Gilberto, MD; Meredith Tabangin, MPH; Stephanie R. Zacharias, PhD, CCC-SLP; Alessandro de Alarcon, MD, MPH

Background: In open airway reconstruction, most commonly laryngotracheoplasty (LTP), success is gauged by subsequent decannulation or extubation; however poor functional voice greatly affects the post-operative quality of life. Vocal fold injections are routinely used to treat dysphonia but there is little data regarding safety and efficacy in patients following open airway procedures.

Objectives: Evaluate the safety and efficacy of vocal fold injections after LTP. Design: Retrospective review, at a Tertiary Referral Center Population: Patients receiving vocal fold injection for dysphonia after LTP Demographics: 26 patients. Males: 14 Females: 12. Age 4-29 years (median 16 years). 9 had 1 open airway procedure, 8 had 2 and 8 had >3.

Results: No immediate complications observed. 15 noted improved voice, 7 no change and 1 had worse voice. 15 pursued repeat injection. 7 had permanent intervention.

Conclusions: Vocal fold injection following LTP is safe and viable option for improving voice after reconstruction.
The Utility of Laryngeal Electromyography (LEMG) in Clinical Decision-Making

John W. Ingle, MD; Clark A. Rosen, MD; Libby J. Smith, DO; VyVy N. Young, MD; Michael C. Munin, MD

The clinical utility of LEMG is controversial among otolaryngologists. This prospective study included twenty-two consecutive patients referred for LEMG with vocal fold immobility. The treating laryngologist was asked to select diagnoses and treatment plans under the assumption of no access to LEMG. Patients then underwent LEMG by a blinded laryngologist and laryngeal electromyographer. LEMG results were reviewed by the treating laryngologist and asked again to list the patient’s diagnoses and treatment plans. The diagnosis changed 28% of the time based on information provided by LEMG. Treatment plans were altered 45% of the time based on information provided by LEMG. Observational periods were eliminated in 4/22 patients based on LEMG, proceeding to definitive treatment. LEMG allowed the differentiation between joint fixation and bilateral paralysis in two patients. Laryngeal electromyography often provides clinically useful information and a prognosis for recovery, leading to a more accurate diagnosis and expedited treatment.

Translational Genomics of Acquired Laryngotraceal Stenosis

Mursalin M. Anis, MD, PhD; Evgeny Krynetskiy, PhD; Jasvir Khurana, MD

Objective: Acquired laryngotracheal stenosis (LTS) results from abnormal mucosal wound healing in the upper respiratory tract. Motivated by the influence of genetic factors in cutaneous wound healing, we sought to investigate the genetic susceptibility to LTS after endolaryngeal and endotracheal injury.

Study Design: A pilot case-control study. Methods: Thirty-two patients with LTS and 32 control patients with airway injury but without LTS were recruited. DNA was isolated from whole blood and formalin-fixed paraffin-embedded specimens from patients. TaqMan allele-specific PCR-based assay was used to interrogate SNPs in CD14, TGF-beta1, and MMP-1 genes. A logistic regression model was used to examine association of candidate gene polymorphisms with the presence or absence of LTS.

Results: All 64 patients were successfully genotyped at the loci of interest by optimizing the genotyping protocol. The study continues to recruit patients from multiple institutions in order to detect statistical significant associations between candidate SNPs and development of LTS.

Conclusion: Identifying patients with genetic susceptibility to LTS and poor wound healing in the upper airway will be useful for selection, management and surveillance of patients after upper-airway injury and surgery.
SCIENTIFIC SESSIONS

Two Cases of Adult Laryngomalacia in Teenagers Treated by Laser Supraglottic Laryngoplasty

Yukio Katori, MD; Ai Kawamoto, MD; Youhei Honkura, MD; Masaki Ogura, MD; Yoshitaka Takanashi, MD; Toshimitsu Kobayashi, MD

Introduction: Adult laryngomalacia is a rare clinical condition but can cause supraglottic airway distress. We present two cases in teenagers treated by supraglottic laryngoplasty.

Procedures: The two patients we treated were (1) a 16-year-old female who suffered sudden onset of inspiration sound and dyspnea with evident attachment between epiglottis and bilateral arytenoids, and (2) an 18-year-old male who had suffered inspiration sound for several years with evident attachment between epiglottis and posterior pharyngeal wall. Laryngomicrosurgery using CO2 laser was performed in both cases, involving removal of arytenoid mucosa in the former and removal of epiglottis tip in the latter.

Results: The inspiration sound and airway distress were resolved immediately after surgery. However, the symptoms recurred in the former case, necessitating additionally surgery.

Conclusion: As is the case for laryngomalacia in infants, supraglottic laryngoplasty is useful for treating adult laryngomalacia, and its indications should be considered in individuals with airway distress.

Use of Coblator for the Treatment of Laryngeal Amyloid: A Novel Approach

Megan W. Wood, MD; Stephen Carter Wright Jr., MD

Introduction: Amyloidosis is a pathologic process resulting in deposition of amyloid fibrils in the extracellular matrix of multiple organ systems, including the larynx. We present a case series of three patients with biopsy proven laryngeal amyloidosis, treated at the Center for Voice and Swallowing at Wake Forest University School of Medicine.

Methods: The Coblator was used during routine suspension laryngoscopy to volatilize redundant tissues while sparing the vocal folds. We encountered minimal or no intraoperative bleeding and were able to maintain excellent visualization.

Results: Three patients with laryngeal amyloid and compromise of the upper aerodigestive tract were treated with the Coblator to reduce the disease burden in an effort to improve their voice and airway. Post-operative results revealed improvement in disease burden with subjective improvements in voice and breathing, without scarring.

Conclusion: For patients with laryngeal amyloidosis and resultant compromise of the voice or airway, the Coblator is a good addition to current treatment options.
Vocal Fold Motion Impairment in Multiple System Atrophy

Ian J. Lalich, MD; Sidney J. Starkman, BS; Dale C. Ekbom, MD; Timothy I. Morgenthaler, MD; Diane M. Orbelo, PhD

Multiple System Atrophy (MSA) is a degenerative neurologic disorder that can affect vocal fold mobility. Our aim was to further elucidate the impact of vocal fold motion impairment in MSA. We undertook a retrospective review of all MSA patients from 1975 to 2010 at Mayo Clinic Rochester. Thirty-eight MSA patients demonstrated vocal fold motion impairment. Mean duration of vocal symptoms prior to diagnosis was 22 months (1-120 months). Stridor was present in only 68% of patients. Either unilateral or bilateral true vocal fold (TVF) paralysis was identified in 45% of patients. The mean survival after diagnosis of vocal fold motion impairment was 140 months. The presence of stridor was not associated with adverse prognosis. Vocal cord paralysis was statistically associated with a decreased overall survival (p = 0.0308). We conclude that otolaryngologic examination may be merited at the time of MSA diagnosis.

Vocal Rehab: Evaluating Reasons for Failure

Jarrod Adam Keeler, MD; Seth M. Cohen, MD, MPH

Objective: Exploring reasons for voice therapy dropout. Multiple studies have theorized reasons for voice therapy dropout, but none evaluated the reasons for dropout with a patient survey.

Methods: A survey of patients with a voice disorder referred for voice therapy who failed to complete their voice therapy sessions. Demographics and diagnosis were obtained from the medical records. Patients were contacted by phone to complete a questionnaire.

Results: 82 of 115 patients completed the survey. 51% had muscle tension dysphonia. 97% cited relief over the benign nature as a reason for their dropout. Time commitments (39%) and financial concerns (38%) were cited by patients and only 26% cited insufficient results as a reason for failure to complete.

Conclusions: Voice therapy has succeeded in treating a wide variety of vocal fold disorders, but compliance is poor. Compliance was affected by the benign nature of the dysphonia, financial concerns, and time constraints.
Introduction: The purpose of this study was to investigate the prevalence of vocal pathology among first-year drama students.

Methods: A retrospective review of 30 first-year drama graduate students between the years 2009-2012 was performed. Stroboscopy, Voice Handicap Index (VHI-10) questionnaires, acoustic and aero-phonatory measures were analyzed.

Results: The prevalence of incomplete glottal closure, laryngeal hyperfunction, and decreased mucosal wave was 62%, 59%, and 55%, respectively. Signs of laryngopharyngeal reflux were present in 48% of subjects. Moderate correlations were found between VHI-10 and jitter (r=0.52) as well as maximum phonation time and incomplete glottal closure (r=0.46).

Conclusions: The vocal demands of actors are unique, requiring the effective use of volume, pitch-control and endurance. This is the first comprehensive study analyzing the prevalence of vocal pathology in actors. This study will continue throughout their education and we anticipate that our feedback along with their vocal training will improve outcomes.
The Association was notified of the passing of Dr. John Rufus Ausband on May 13, 2012 at his home in Beaufort, South Carolina. Dr. Ausband was inducted as an ALA Active Fellow in 1969 and elevated to Emeritus Fellowship in 1984.

Dr. Ausband was born in Winston-Salem, North Carolina on October 14, 1920, the son of C. C. (Clarence) and Estelle Crowell Ausband. After attending local schools and graduating from Asbury College in 1940, Dr. Ausband enrolled in the Wake Forest College School of Medical Sciences in the fall of 1940 and moved to Winston-Salem in 1941 when the school moved to its present location. With the changes in schedules brought on by the onset of World War II, summer vacations were discontinued and he graduated from the Bowman Gray School of Medicine of Wake Forest University in its first class in December, 1943. He had a rotating internship at the Hartford (CT) Hospital in 1944 and returned to Winston-Salem as Assistant Resident in Surgery at the NC Baptist Hospital until March 1946.

He was on inactive duty with the US Army in 1942, on active duty in the Army Specialized Training Program while in his last year of medical school, and again on inactive duty during his internship and assistant residency. He received an honorable discharge from the Army with the rank of Captain in the Medical Corps. After completing his military service, Dr. Ausband began his medical practice in Denton, NC until July 1949 when he returned to The NC Baptist Hospital for further training in pathology and otolaryngology, finishing this program in June 1952. He served on the faculty of Bowman Gray School of Medicine as Assistant Professor of Otolaryngology and subsequently to Professor. He resigned this position and moved from Winston-Salem, ending his career as Associate Professor of Otolaryngology at Emory University School of Medicine. He was later recognized as Emeritus Professor of Otolaryngology at the Wake Forest University School of Medicine. He was a member of Phi Rho Sigma Medical Fraternity and was elected President of the Grand Chapter of the Fraternity.

In addition to his membership in the ALA, Dr. Ausband was also an active member of a number of professional societies, including the North Carolina Society of Otolaryngology and Ophthalmology where he was secretary and later president, Forsyth County Medical Society and American Medical Society, The American Triological Society, American Broncho-Esophagological Association where he was secretary and later president.

Dr. Ausband was married to the late Geraldine Trent of Winston-Salem on June 25, 1949 for 59 years. They were the parents of two daughters, Leigh Trent Ausband, Charlotte, NC; and Ann Ausband McDuff (Bill), Beaufort SC; four grandchildren; two great-grandchildren; and other relatives, colleagues, and friends.

A memorial service was held on May 16, 2012 with a full military burial at the Beaufort National Cemetary.
On Feb. 7, 2013, the American Laryngological Association, the University of Minnesota community along with the field of otolaryngology lost one of its greatest leaders, Charles J. Krause, M.D. He passed away in Florida, surrounded by his family.

Krause served as chair of the U-M Medical School’s Department of Otolaryngology from 1977, when he was recruited to Michigan, until 1992. He remained active on the faculty until 2000, and served in leadership positions in the Hospitals and Health Centers and Medical School. He was founding president of M-CARE, the health plan formerly owned by U-M. He earned his medical degree in 1962 from what was then known as the State University of Iowa, now known as the University of Iowa. After completing his otolaryngology residency there, he joined the Iowa faculty.

Once at Michigan, Krause helped transform the department, including introducing specialty divisions into the faculty members’ academic physician practice; recruiting new faculty; improving the clinical facilities where ear, nose and throat care was provided; and bolstering basic research and residency training. In addition to his role as department chair, he served U-M as the chief of clinical affairs, senior associate hospital director. He led the development of M-CARE, a health plan launched by U-M in 1986, and served as its first associate dean at the Medical School and senior president. He directed strategic planning for U-M’s first satellite health care facilities off the main medical campus.

On a national level, Krause served as president of organizations such as the American Academy of Otolaryngology-Head and Neck Surgery, the American Society of Head and Neck Surgery, the American Board of Otolaryngology and the American Academy of Facial Plastic and Reconstructive Surgery.

Krause is being remembered as a calm and thoughtful visionary, who led by building consensus and bringing people together, and mentored dozens of trainees toward successful careers.

In November 2012, he and his wife Barbara attended the first installation of the Charles J. Krause, M.D., Collegiate Professorship in Otolaryngology, an honor given to Carol Bradford, M.D., FACS, chair of Otolaryngology. The professorship will ensure that the department chair embodies Krause’s ideals and promotes an environment that fosters excellence and integrity in clinical care, education and research.
OFFICERS 1879 - 2013

Presidents

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DECEASED FELLOWS

Dates indicate original election to the Association

Honorary Fellows

1946 Alonso, Justo M., Montevideo, Uruguay
1914 Levy, Robert, Denver, CO
1992 Aschan, Gunnar K., Linköping, Sweden
1918 Lewis, Fielding O., Media, PA
1908 Barnhill, John F., Miami Beach, FL
1933 Lierle, Dean M., Iowa City, IA
1983 Birkett, Herbert S., Montreal, CN
1883 Mackenzie, John N., Baltimore, MD
1878 Bosworth, Francke H., New York, NY
1881 Mackenzie, Sir Morell, London, ENG
1940 Broyles, Edwin N., Baltimore, MD
1910 Masser, Ferdinand, Naples, Italy
1917 Coates, George M., Philadelphia, PA
1904 Mosher, Harris P., Marblehead, MA
1925 Clerf, Louis H., St Petersburg, FL
1910 Mouro, J. J. E., Bordeaux, France
1957 Conley, John J., New York, NY
1937 Nager, F. R., Zurich, Switzerland
1960 Daly, John F., Fort Lee, NJ
1930 Negus, Sir Victor E., London, ENG
1818 Dean, Lee Wallace, St Louis, MO
1818 Oliver, H. K., Boston, MA
1881 Delavan, D. Bryson, New York, NY
1957 Ono, Jo, Tokyo, Japan
1891 De La Sota y Lastra, Ramon, Seville, Spain
1906 Pierce, Norval Harvey, San Diego, CA
1893 de Roulades, Arthur W., New Orleans, LA
1937 Portmann, Georges, Bordeaux, France
1923 Fenton, Ralph A., Portland, OR
1924 Proetz, Arthur C., St Louis, MO
1879 French, Thomas R., Brooklyn, NY
1957 Ruedi, Luzius, Zurich, Switzerland
1936 Galloway, Thomas C., Evanston, IL
1932 Schall, LeRoy A., Boston, MA
1880 Garcia, Manuel, London, ENG
1909 Semon, Sir Felix, Great Missenden, England
1886 Gould, Wilbur J., New York, NY
1878 Solis-Cohen, J., Philadelphia, PA
1903 Harris, Thomas J., New York, NY
1973 Som, Max L., New York, NY
1971 Harrison, Sir Donald F. N., Surrey, England
1889 Swain, Henry L., New Haven, CT
1943 Hilding, Anderson C., Duluth, MN
1914 Thomson, Sir St Clair, London, ENG
1928 Hill, Frederick T., Waterville, ME
1903 Tilley, Herbert, London, ENG
1948 Holinger, Paul H., Chicago, IL
1914 Wagner, Clinton, New York, NY
1936 Huizinga, Eelco, Groningen, the Netherlands
1948 Williams, Henry L., Rochester, MN
1907 Jackson, Chevalier, Schwenksville, PA
1951 Woodman, DeGraaf, New York, NY
1878 Johnston, Samuel, Baltimore, MD
1890 Wright, Jonathan, Pleasantville, NY
1878 Lefferts, George Morewood, Katonah, NY

Corresponding Fellows

1978 Arauz, Juan Carlos, Buenos Aires, Argentina
1902 Lermoyez, Marcel, Paris, France
1972 Arslan, Michele, Padua, Italy
1897 Luc, H., Paris, France
1942 Batson, Oscar V., Philadelphia, PA
1938 Blair, Virray P., St Louis, MO
1896 MacDonald, Greville, Haslemere, England
1892 Browne, Lennox, London, England
1894 MacIntyre, John, Glasgow, Scotland
1903 McBride, P., York, England
1964 Cleves, Carlos, Bogota, Colombia
1920 McKenzie, Dan, London, England
1940 Colledge, Lionel, London, England
1919 McKernon, James F., New Canaan, CT
1901 Collier, Mayo, Kearsney Abbey, Kent, England
1880 Meyer, Wilhelm, Copenhagen, Denmark
1893 Desverrine, Carlos M., Havana, Cuba
1896 Mygind, Holger, Copenhagen, Denmark
1938 Dohlman, Gosta, East Bradenton, FL
1890 Neil, James Hardie, Auckland, New Zealand
1943 Eggston, Andrew A., New York, NY
1919 Paterson, Donald Rose, Cardiff, Wales
1930 Emerson, Francis P., Franklin, MA
1941 Patterson, Norman, Herts, England
1961 Faaborg-Anderson, Kund, Nykobing, Denmark
1971 Rethi, Aurelius, Budapest, Hungary
1936 Fraser, John S., Edinburgh, UK
1919 Rogers, John, Jr, New York, NY
1887 Gougenheim, A., Paris, France
1894 Sajous, C. E. DeM., Philadelphia, PA
1901 Grant, Sir James Dundas, London, England
1924 Schaefer, J. Parson, Philadelphia, PA
1984 Holden, Edgar, Newark, NJ
1896 Schmiegelow, Ernst, Copenhagen, Denmark
1970 Hutcheon, Jack R., Brisbane, Australia
1946 Segura, Eliseo, Buenos Aires, Argentina
1985 Inouye, Tetsuzo, Saitama, Japan
1940 Soto, E. Fernandez, Havana, Cuba
1919 Kelly, Adam Brown, Helensburgh, Scotland
1881 Thornton, Pugin, London, England
1978 Kleinsasser, Oskar, Marburg, Germany
1913 Turner, A. Logan, Edinburgh, UK
1881 Labus, Carlo, Milan, Italy
1936 Vialle, W., Nice, France
1950 Larsell, Olof, Portland, OR
1921 LaSagna, Francesco, Parma, Italy
1901 Wingrave, Wyatt, Lyme Regis, England
1926 Law, Frederick M., New York
1894 Wolfenden, R. Norric, Kent, England
1921 LeMaitre, Ferdinand, Paris

86
Deceased Fellows

Emeritus Fellows

1962 Arnold, Godfrey E., Clinton, MS 1960 Harris, Herbert H., Houston, TX
1912 Ballenger, Howard C., Winnetka, IL 1959 Hart, Verling K., Charlotte, NC
1936 Barlow, Roy A., Nova Scotia, Canada 1915 Hastings, Hill, Los Angeles, CA
1923 Barnes, Harry Aldrich, Kingston, MA 1944 Havens, Fred Z., Rochester, MN
1915 Beatty, Hugh G., Columbus, OH 1942 Healey, Clyde A., Rochester, NY
1944 Beck, Joseph C., Chicago, IL 1959 Henry, G. Arnold, Lagoon City, Canada
1921 Boies, Lawrence R., Minneapolis, MN 1888 Hinkel, Frank Whitehill, Buffalo, NY
1944 Bordley, John E., Baltimore, MD 1944 Hoople, Gordon D., Syracuse, NY
1955 Bowers, Wesley C., New York, NY 1895 Hopkins, Frederick E., Springfield, MA
1941 Brown, J. Price, Toronto, Canada 1930 House, Karl M., Ardmore, PA
1901 Brown, Lester, Attalla, GA 1927 Hubbard, Thomas, Toledo, OH
1955 Bryan, Joseph H., Washington, DC 1919 Hurle, Lee Maidment, Rowayton, CT
1891 Bryce, Douglas P. Toronto Canada 1920 Imperatori, Charles J., Essex, NY
1963 Butler, Ralph, Philadelphia, PA 1904 Ingersoll, John Marvin, Miami, FL
1913 Campbell, Edward H., Philadelphia, PA 1952 Ireland, Percy E., Toronto, Canada
1930 Campbell, Paul A., San Antonio, TX 1928 Jarvis, DeForest C., Barre, VT
1945 Canfield, Norton, Miami, FL 1939 Johnston, William H., Santa Barbara, CA
1945 Cardwell, Edgar G., Newark, NJ 2010 Kaste, Robert E., Lutherville, MD
1959 Clark, J. Payson, Boston, MA 1942 Kelly, Joseph D., New York, NY
1897 Chandler, J. Ryan, Miami, FL 1918 Kenyon, Elmer L., Chicago, IL
1968 Cobb, Frederick C., Bradenton, FL 1921 Kernan, John D., New York, NY
1899 Cocks, Edwin W. Jr., Memphis, TN 1965 King, James T., Atlanta, GA
1939 Cody, Claude C., Jr, Houston, TX 1929 Kistner, Frank B., Portland, OR
1964 Cody, Claude C. III, Houston, TX 2011 Kirchmer, John A., New Haven, CT
1957 Converse, John Marquis, New York, NY 1885 Knight, Charles H., New York, NY
1983 Coolidge, Albermon, Boston, MA 1939 Large, Second H., Cleveland, OH
1937 Crowe, Samuel H., Baltimore, MD 1939 LeJeune, Francis E., New Orleans, LA
1941 Cunning, Daniel S., New York, NY 1894 Leland, George A., Boston, MA
1964 Daubney, Virginia, Washington, DC 1961 Lewy, Robert B., Chicago, IL
1951 Davison, Francis W., Danville, PA 1922 Lillie, Harold I., Rochester, MN
1882 De Blosi, Thomas Amory, Boston, MA 1943 Linson, William R., Cleveland, OH
1966 Devine, Kenneth, Rochester, MN 1949 Lindsay, John R., Evanston, IL
1968 DeWeese, David D., Portland, OR 1976 Lingeman, Raleigh E., Indianapolis, IN
1941 Dixon, Fred W., Shaker Heights, OH 1973 Loré, John M., Buffalo, New York, NY
1952 Erich, John B., Rochester, MN 1928 Lyman, Harry Webster, St Louis, MO
1902 Farlow, John W., Boston, MA 1886 MacCoy, Alexander W., Philadelphia, PA
1964 Feuron, Blair W., Don Mills, Canada 1928 MacPherson, Duncan, New York, NY
1963 Fergusson, Charles F., Sarasota, FL 1941 Martin, Robert C., San Francisco, CA
1930 Figi, Frederick A., Rochester, MN 1896 Mayer, Emil, New York, NY
1955 Fitz-Hugh, G. Slaughter, Charlottesville, VA 1966 McCabe, Brian F., Iowa City, IA
1922 Forbes, Henry H., New York, NY 1952 McCall, Julius W., Shaker Heights, OH
1933 Foster, John H., Houston, TX 1951 McCart, Howard D., Toronto, Canada
2010 Frazer, John, Rochester, NY 1939 McCaskey, Carl H., Indianapolis, IN
1905 Freer, Otto T., Chicago, IL 1943 McCullagh, Samuel, New York, NY
1956 Friedberg, Stanton A., Chicago, IL 1963 McGovern, Francis H., Danville, VA
1932 Furstenberg, Albert C., Ann Arbor, MI 1951 McHenry, Lawrence C., Oklahoma City, OK
1940 Gatewood, E. Trible, Richmond, VA 1923 McKinney, Richmond, Memphis, TN
1928 Gittins, Thomas R., Sioux City, IA 1933 McMahon, Bernard J., St Louis, MO
1880 Gleitsmann, Joseph W., New York, NY 1931 McNally, William J., Montreal, Canada
1959 Goldman, Joseph L., New York, NY 1952 Miller, Alden H., Glendale, CA
1922 Goodsmith, Perry G., Toronto, Canada 1965 Miles, Robert G., Toronto, Canada
1988 Goodale, Joseph L., Ipswich, MA 1964 Montgomery, William W., Boston, MA
1940 Goodale, Robert L., Ipswich, MA 1954 Moore, Paul McN., Delray Beach, FL
1965 Goodyear, Henry M., Cincinnati, OH 1957 Munoz-MacCormick, Carlos E., Santurce, PR
1932 Graham, Harrington B., San Francisco, CA 1953 Murtagh, John A., Hanover, NH
1906 Greene, D. Crosby, Jr, Boston, MA 1939 Myers, John L., Kansas City, MO
1917 Greene, Joseph B., Asheville, NC 1927 Myerson, Mervin C., New York, NY
1950 Hall, Colby, Encino, CA 1901 Myles, Robert C., New York, NY
1970 Halliday, Sir George C., Sydney, Australia 1937 Nash, C. Stewart, Rochester, NY
1905 Halsted, Thomas H., Los Angeles, CA 1922 New, Gordon B., Rochester, MN
1965 Hanckel, Richard W., Jr, Florence, SC 1923 Newhart, Horace, Minneapolis, MN
1958 Hansel, French K., St Louis, MO 1903 O’Keefe, John J., Philadelphia, PA
1896 Hardie, Thomas Melville, Chicago, IL 1903 Packard, Francis R., Philadelphia, PA

87
Active Fellows

2006 Adams, George L., Excelsior, MN
1958 Alfaro, Victor R., Washington, DC
1880 Allen, Harrison, Philadelphia, PA
1886 Andrews, Albert H., Jr., Chicago, IL
1917 Arrowsmith, Hubert, Brooklyn, NY
1879 Ash, Morris J., New York, NY
1942 Ashley, Rae E., San Francisco, CA
1958 Atkins, Joseph P., Philadelphia, PA
1983 Babbitt, James A., Philadelphia, PA
1906 Ballenger, William L., Chicago, IL
1880 Bean, C. E., St Paul, MN
1949 Beck, August L., New Rochelle, NY
1904 Berens, T. Passmore, New York, NY
1924 Bigelow, Nolton, Providence, RI
1938 Blossingame, Charles D., Memphis, TN
1893 Bliss, Arthur Ames, Philadelphia, PA
1951 Boyden, Gay L., Portland, OR
1895 Boylan, J. E., Cincinnati, OH
1932 Brown, John Mackenzie, Los Angeles, CA
1892 Brown, Moreau R., Chicago, IL
1933 Buckley, Robert E., New York
1915 Canfield, R. Bishop, Ann Arbor, MI
1893 Carmack, John Walter, Indianapolis, IN
1924 Carmody, Thomas E., Denver, CO
1889 Casselberry, William E., Chicago, IL
1883 Chamberlain, C. W., Hartford, CT
1887 Chamberlin, William B., Cleveland, OH
1880 Chapman, S. Hartwell, New Haven, CT
1902 Chappell, W. F., New York, NY
1913 Coffin, Rockwell C., Boston, MA
1918 Cox, Gerald H., New York, NY
1880 Cushing, E. W., Boston, MA
1878 Cutter, Ephraim, West Falmouth, MA
1880 Daly, W. H., Pittsburgh, PA
1878 Davis, F. H., Chicago, IL
1941 Davis, Warren B., Philadelphia, PA
1926 Dennis, Frank Lownes, Colorado Springs, CO
1901 Dickerman, E. T., Chicago, IL
1969 Dickinson, John T., Pittsburgh, PA
1878 Donaldson, Frank, Baltimore, MA
1920 Pang, Lup Q., Honolulu, HI
1961 Pastore, Peter N., Richmond, VA
1898 Phelps, Kenneth A., Burlington, NC
1878 Porter, William, Ocean Springs, MA
1942 Potts, John B., Omaha, NE
1951 Priest, Robert E., Edina, MN
2004 Putney, F. Johnson, Charleston, SC
1956 Richardson, John R., Searsport, ME
1910 Ritter, Frank, Ann Arbor, MI
1878 Robinson, Beverly, New York, NY
1897 Salinger, Samuel, Palm Springs, CA
1959 Sanders, Sam H., Memphis, TN
1921 Sauer, William E., St Louis, MO
1934 Schenck, Harry P., Philadelphia, PA
2010 Schild, Joyce, Albuquerque, NM
1893 Searls, Edward C., St Paul, MN
1923 Sooy, Francis A., San Francisco, CA
1907 Shambaugh, George E., Chicago, IL
1558 Simonton, Kinsey Macleod, Ponte Vedra Beach, FL
1937 Simpson, W. Likely, Memphis, TN
1948 Sissom, George, Chicago, IL
1987 Skolnik, Emanuel M., Chicago, IL
1950 Smith, Austin T., Philadelphia, PA
1908 Smith, Harmon, New York, NY
2004 Soboroff, Burton, Chicago, IL
1917 Spencer, Frank R., Boulder, CO
1863 Tabb, Harold C., New Orleans, LA
1947 Theobald, Walter H., Chicago, IL
1954 Thomas, William C., Cincinnati, OH
1927 Tobey, Harold G., Boston, MA
1963 Tolan, John F., Seattle, WA
1939 Tremble, G. Edward, Montreal, Canada
1925 Tucker, Gabriel, Haverford, PA
1943 Van Alyea, Oliver E., Chicago, IL
1941 Violé, Pierre, Los Angeles, CA
1892 Wagner, Henry L., San Francisco, CA
1989 Watson, Arthur W., Philadelphia, PA
1948 Whalen, Edward J., Hartford, CT
1922 White, Francis W., New York, NY
1939 Wilson, J. Gordon, Old Bennington, VT
1905 Wood, George B. Wynnewood, PA
1935 Woodward, Fletcher D., Charlottesville, VA
1953 Work, Walter, Green Valley, AZ
1878 Atkins, Joseph P., Philadelphia, PA
1924 Babbitt, James A., Philadelphia, PA
1907 Getchell, Albert C., Worcester, MA
1940 Gibb, Joseph S., Philadelphia, PA
1878 Gill, William D., San Antonio, TX
1913 Glasgow, William Carr, St Louis, MO
2001 Goldstein, Max A., St Louis, MO
1983 Gray, Steven D., Salt Lake City, UT
1934 Grayson, Charles P., Philadelphia, PA
1995 Grove, William E., Milwaukee, WI
1988 Gussack, Gerald S., Atlanta, GA
1933 Hanso, David G., Chicago, IL
1957 Harkness, Gordon F., Davenport, IA
1878 Harrill, James A., Winston-Salem, NC
1945 Hartman, J. H., Baltimore, MD
1879 Hickey, Harold L., Denver, CO
1907 Holden, Edgar, Newark, NJ
1882 Holmes, Christian R., Cincinnati, OH
1893 Hooper, Franklin H., Boston, MA
1938 Hope, George B., New York, NY
1939 Houn, George E., St Louis, MO
1901 Hunt, Westley Marshall, New York, NY
1925 Hyatt, Frank, Washington, DC
1878 Igelau, Samuel, Cincinnati, OH
1982 Ingalls, E. Fletcher, Chicago, IL
1938 Ives, Frank L., New York, NY
1880 Jackson, Chevalier L., Philadelphia, PA
1878 Jarvis, William C., New York, NY
1879 Johnson, Hosmer A., Chicago, IL
1960 Johnson, Woolsey, New York, NY
1961 Johnston, Kenneth C., Chicago, IL
1944 Jones, Edley H., Vicksburg, MS
1964 Kealhofer, R. H., St Louis, MO

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<tr>
<th>Year</th>
<th>Name</th>
<th>City/State, Country</th>
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<tr>
<td>1954</td>
<td>Keim, W. Franklin</td>
<td>Montclair, NY</td>
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<td>1942</td>
<td>King, Edward D.</td>
<td>North Hollywood, CA</td>
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<td>1901</td>
<td>King, Gordon</td>
<td>New Orleans, LA</td>
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<td>1878</td>
<td>Knight, Frederick I.</td>
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<td>Knight, John S.</td>
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<td>1898</td>
<td>Kyle, D. Braden</td>
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<td>1890</td>
<td>Langmaid, Samuel W.</td>
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<td>1953</td>
<td>Lederer, Francis L.</td>
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<td>1878</td>
<td>Lincoln, Rufus P.</td>
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<td>1911</td>
<td>Lockard, Lorenzo B.</td>
<td>Denver, CO</td>
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<td>1913</td>
<td>Loeb, Hanau W.</td>
<td>St Louis, MO</td>
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<td>1897</td>
<td>Logan, James E.</td>
<td>Kansas City, MO</td>
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<td>1935</td>
<td>Looper, Edward A.</td>
<td>Baltimore, MD</td>
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<td>1888</td>
<td>Lowman, John H.</td>
<td>Cleveland, OH</td>
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<td>Lynah, Henry L.</td>
<td>New York, NY</td>
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<td>1952</td>
<td>Lynch, Mercer G.</td>
<td>New Orleans, LA</td>
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<td>1915</td>
<td>Lynch, Robert Clyde</td>
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<td>1894</td>
<td>Mackenty, John E.</td>
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<td>Major, G. W.</td>
<td>Montreal, Canada</td>
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<td>1898</td>
<td>Makuen, G. Hudson</td>
<td>Philadelphia, PA</td>
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<td>1948</td>
<td>Maxwell, James H.</td>
<td>Ann Arbor, MI</td>
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<td>1879</td>
<td>McBurney, Charles</td>
<td>New York, NY</td>
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<td>1927</td>
<td>McGinnis, Edwin</td>
<td>Chicago, IL</td>
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<td>1936</td>
<td>McGregor, Gregor</td>
<td>Toronto, Canada</td>
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<td>1913</td>
<td>McKimnie, O. A.</td>
<td>Washington, DC</td>
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<td>1881</td>
<td>Major, G. W.</td>
<td>Montreal, Canada</td>
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<td>1885</td>
<td>McSherry, Clinton II</td>
<td>Baltimore, MD</td>
</tr>
<tr>
<td>1954</td>
<td>Metzler, Philip E.</td>
<td>Boston, MA</td>
</tr>
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<td>1958</td>
<td>Montrueil, Fernand</td>
<td>Montreal, Canada</td>
</tr>
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<td>1881</td>
<td>Morgan, E. C.</td>
<td>Washington, DC</td>
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<tr>
<td>1950</td>
<td>Morrison, Lewis F.</td>
<td>San Francisco, CA</td>
</tr>
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<td>1940</td>
<td>Morrison, William W.</td>
<td>New York, NY</td>
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<td>1895</td>
<td>Mulhall, J. C.</td>
<td>St Louis, MO</td>
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<tr>
<td>1928</td>
<td>Mullin, William V.</td>
<td>Cleveland, OH</td>
</tr>
<tr>
<td>1914</td>
<td>Munger, Carl E.</td>
<td>Waterbury, CT</td>
</tr>
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<td>1892</td>
<td>Murray, T. Morris</td>
<td>Washington, DC</td>
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<td>1924</td>
<td>Mynter, H.</td>
<td>Buffalo, NY</td>
</tr>
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<td>1893</td>
<td>Newcomb, James E.</td>
<td>New York, NY</td>
</tr>
<tr>
<td>1985</td>
<td>Nichols, J. E. H.</td>
<td>New York, NY</td>
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<td>1927</td>
<td>Oguara, Joseph H.</td>
<td>St Louis, MO</td>
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<td>1927</td>
<td>Orton, Henry B.</td>
<td>Newark, NJ</td>
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<td>1894</td>
<td>Park, William H.</td>
<td>New York, NY</td>
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<td>1982</td>
<td>Porcher, W. P.</td>
<td>Puyallup, WA</td>
</tr>
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<td>1927</td>
<td>Porter, Charles T.</td>
<td>Boston, MA</td>
</tr>
<tr>
<td>1954</td>
<td>Pressman, Joel J.</td>
<td>Los Angeles, LA</td>
</tr>
<tr>
<td>1908</td>
<td>Randall, B. Alexander</td>
<td>Philadelphia, PA</td>
</tr>
<tr>
<td>1882</td>
<td>Rankin, D. N.</td>
<td>Allegheny, PA</td>
</tr>
<tr>
<td>1934</td>
<td>Richards, Lyman G.</td>
<td>Wellesley Hills, MA</td>
</tr>
<tr>
<td>1902</td>
<td>Richardson, Charles W.</td>
<td>Washington, DC</td>
</tr>
<tr>
<td>1930</td>
<td>Ridpath, Robert E.</td>
<td>Philadelphia, PA</td>
</tr>
<tr>
<td>1945</td>
<td>Robb, James M.</td>
<td>Detroit, MI</td>
</tr>
<tr>
<td>1953</td>
<td>Roberts, Sam E.</td>
<td>Kansas City, MO</td>
</tr>
<tr>
<td>1881</td>
<td>Robertson, J. M.</td>
<td>Detroit, MI</td>
</tr>
</tbody>
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**ROSTER OF FELLOWS – 2013**

*Date indicates year admitted to active fellowship.*

*Active Fellows - 146*

<table>
<thead>
<tr>
<th>Year Elected</th>
<th>Name</th>
<th>Institution and Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>Abaza, Mona M., M.D.</td>
<td>University of Colorado-Denver, Dept. of Otolaryngology, 12635 E. 17th Ave., AO-1 Rm. 3103, Aurora CO 80045</td>
</tr>
<tr>
<td>1994</td>
<td>Abemayor, Elliot, M.D.</td>
<td>Univ of California, L.A. Rm. 62-132 CHS, 10833 Le Conte Ave., Los Angeles CA 90095-1624</td>
</tr>
<tr>
<td>1974</td>
<td>Alford, Bobby R., M.D.</td>
<td>Baylor College of Medicine, One Baylor Plaza, #NA 102, Houston TX 77030-3498</td>
</tr>
<tr>
<td>2006</td>
<td>Altman, Kenneth W., M.D., Ph.D.</td>
<td>Dept of Otolaryngology, Mt. Sinai School of Medicine, One Gustave L. Levy Pl., Box 1189 New York, NY 10029</td>
</tr>
<tr>
<td>2008</td>
<td>Armstrong, William B., MD</td>
<td>525 S. Old Ranch Rd., Anaheim Hills, CA 92808-1363</td>
</tr>
<tr>
<td>2001</td>
<td>Aviv, Jonathan, M.D.</td>
<td>Dept of Otolaryngology, New York Presbyterian Hospital, 180 Ft. Washington Ave., Suite 736, New York NY 10032</td>
</tr>
<tr>
<td>2010</td>
<td>Baredes, Soly, M.D.</td>
<td>Univ of Medicine and Dentistry of New Jersey, Dept. of Otolaryngology, 90 Bergen St., Ste. 7200, Newark, NJ 07103</td>
</tr>
<tr>
<td>2013</td>
<td>Belafsky, Peter C., MD, PhD</td>
<td>Univ. of California – Davis Medical Center, Dept. of Otolaryngology, 2521 Stockton Blvd., Ste 7200, Sacramento, CA 95817</td>
</tr>
<tr>
<td>1999</td>
<td>Benninger, Michael S., M.D.</td>
<td>Henry Ford Hospital, 2799 West Grand Blvd., Detroit MI 48202-2689</td>
</tr>
<tr>
<td>1993</td>
<td>Berke, Gerald S., M.D.</td>
<td>Div. of Otolaryngology - Head &amp; Neck Surgery, UCLA School of Med., 10833 Le Conte, Los Angeles CA 90095-0001</td>
</tr>
<tr>
<td>2007</td>
<td>Bielamowicz, Steven, M.D.</td>
<td>Dept. of Otolaryngology, Washington University Hospital, 2150 Pennsylvania Ave. NE., Suite 6-301, Washington, DC 20037</td>
</tr>
<tr>
<td>1977</td>
<td>Blaugrund, Stanley M., M.D.</td>
<td>115 East 61st Street, New York NY 10021</td>
</tr>
<tr>
<td>1987</td>
<td>Blitzter, Andrew, M.D., D.D.S.</td>
<td>425 W. 59th St., 10th Fl., New York NY 10019</td>
</tr>
<tr>
<td>2012</td>
<td>Blumin, Joel H., M.D.</td>
<td>Medical College of Wisconsin, Dept. of Otolaryngology, 9200 W. Wisconsin Ave., Milwaukee WI 53226</td>
</tr>
<tr>
<td>2012</td>
<td>Bradford, Carol R., M.D.</td>
<td>Univ. of Michigan – Ann Arbor, Dept. of Otolaryngology – HNS, 1500 E. Medical Center Dr., 1904 Taubman Center, Ann Arbor, MI 48103-5312</td>
</tr>
<tr>
<td>1994</td>
<td>Broniatowski, Michael, M.D.</td>
<td>2351 East 22nd St., Cleveland OH 44115</td>
</tr>
<tr>
<td>2011</td>
<td>Burns, James A., M.D.</td>
<td>Harvard Medical School MA General Hospital, Dept. of Otolaryngology, One Bowdoin Square, 11th Floor, Boston, MA 02114</td>
</tr>
<tr>
<td>1994</td>
<td>Caldarrelli, David D., M.D.</td>
<td>Dept. of Otolaryngology, Rush Presbyterian St. Luke’s Medical Center, 1653 West Congress Parkway, Chicago IL 60612</td>
</tr>
<tr>
<td>2006</td>
<td>Carrau, Richard L., M.D.</td>
<td>The Ohio State University Medical Center, Dept. of Otolaryngology, 320 W. 10th Ave., Starling Living Hall – Room B-221, Columbus, OH 43210</td>
</tr>
<tr>
<td>1994</td>
<td>Cassisi, Nicholas J., D.D.S., M.D.</td>
<td>Health Sciences Center, P.O. Box 10264, Gainesville FL 32610-0264</td>
</tr>
<tr>
<td>2011</td>
<td>Chhetri, Dinesh, M.D.</td>
<td>UCLA School of Med., Div. of Otolaryngology – Head &amp; Neck Surgery, 10833 Le Conte Los Angeles CA 90095-0001</td>
</tr>
<tr>
<td>1993</td>
<td>Close, Lanny G., M.D.</td>
<td>Dept. of Otolaryngology, Columbia University, 622 W 168th Street, New York NY 10032-3702</td>
</tr>
<tr>
<td>1992</td>
<td>Cotton, Robin T., M.D.</td>
<td>Dept. of Pediatric Oto and Maxillofacial Surgery, Children’s Hospital Med. Ctr. ASB-3, 3333 Burnet Ave., Cincinnati OH 45229-2899</td>
</tr>
<tr>
<td>1988</td>
<td>Coulthard, Stanley W., M.D.</td>
<td>1980 W. Hospital Dr., Ste. 111, Tucson AZ 85704</td>
</tr>
<tr>
<td>2002</td>
<td>Courey, Mark S., M.D.</td>
<td>UCSF Voice &amp; Swallowing Center, 2330 Post St. 5th Floor, San Francisco, CA 94115</td>
</tr>
<tr>
<td>1984</td>
<td>Crumley, Roger L., M.D.</td>
<td>M.B.A., Head &amp; Neck Surgery, UC Irvine Medical Center, 101 City Drive South, Bldg. 25, Orange CA 92868</td>
</tr>
<tr>
<td>Year</td>
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<td>2004</td>
<td>Paniello, Randal C., M.D., Dept of Otolaryngology, Washington University School of Medicine, 660 S. Euclid, Campus Box 8115, St. Louis MO 63110</td>
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<td>1998</td>
<td>Persky, Mark S., M.D., Beth Israel Med Ctr., 10 Union Sq E, New York NY 10003</td>
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<td>1989</td>
<td>Pillsbury, Harold C. III, M.D., Div. of Otolaryngology–Head &amp; Neck Surgery, UNC-Chapel Hill, CB #7070, 1115 Bioinformatics Bldg, Chapel Hill NC 27599-7070</td>
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<td>2010</td>
<td>Rahbar, Reza MD, Children’s Hospital of Boston, Dept. of Otolaryngology, 300 Longwood Ave., LO367, Boston, MA 02115</td>
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<td>1997</td>
<td>Rice, Dale H. M.D., Ph.D., Univ. of Southern California, Health Consultation Center II, 1510 San Pablo St., Ste. 4600, Los Angeles CA 90033</td>
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<td>1992</td>
<td>Richtsmeier, William J., M.D., Ph.D., Bassett Healthcare, 1 Atwell Rd., Cooperstown NY 13326</td>
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<td>1995</td>
<td>Robbins, K. Thomas, M.D., Div. of OTO, Southern Illinois University School of Medicine, 301 N 8th St., Room 5B-501, Springfield, IL 62701</td>
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<td>1982</td>
<td>Rontal, Eugene M.D., 28300 Orchard Lake Rd., Farmington MI 48334</td>
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<td>Rosen, Clark A., M.D., Eye &amp; Ear Institute, 200 Lothrop Street, Ste 500, Pittsburgh, PA 15232-2546</td>
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<td>1997</td>
<td>Ruben, Robert J., M.D., Montefiore Medical Ctr., 3400 Bainbridge Ave, 3rd Fl, Bronx NY 10467</td>
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<td>1981</td>
<td>Sasaki, Clarence T., M.D., OTO Dept of Surgery, Yale University School of Med, PO Box 208041, New Haven CT 06520</td>
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<td>1995</td>
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<td>1987</td>
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<td>2008</td>
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<td>Shockley, William W., M.D., Dept. of Otolaryngology, Univ. of NC – Chapel Hill., G-0412 Neurosciences Hospital, CB 7070, Chapel Hill NC 27599-7070</td>
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<td>2009</td>
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<td>1979</td>
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<td>1991</td>
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<td>2006</td>
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<td>1997</td>
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<td>2010</td>
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<td>2004</td>
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1982  Thawley, Stanley E., M.D., Washington
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1995  Weissler, Mark C., M.D., Div. of
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1997  Wetmore, Ralph F., M.D., Div. of
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1995  Zeitels, Steven M., M.D., Dept. of
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Associate Fellows – 9

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2013  David Zealear, PhD, Vanderbilt University
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4480

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**Honorary Fellows - 2**

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<th>Year</th>
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<td>1995</td>
<td>Snow, James B., Jr., MD, PhD</td>
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<td>1995</td>
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**Corresponding Fellows - 51**

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<td>1999</td>
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<td>1980</td>
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<td>1993</td>
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<td>1995</td>
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<tr>
<td>1995</td>
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<td>1995</td>
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<td>2003</td>
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<td>1984</td>
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<td>1986</td>
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<td>1986</td>
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<td>2003</td>
<td>Friedrich, Gerhard, M.D.</td>
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<tr>
<td>1996</td>
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<tr>
<td>2012</td>
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<td>1991</td>
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<td>1999</td>
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<td>Mesrutlyet Cadesi, No. 29/13 Yenisehir, Ankara, TURKEY</td>
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<td>1993</td>
<td>Howard, David J., F.R.C.S., F.R.C.S.E.D.</td>
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<td>1988</td>
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<td>Isshiki Clinic, Kyoto University 3F, 18-1 Unrin-in-cho Murasakino Kitaku Kyoto, 603 Kyoto,</td>
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<td>1998</td>
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<td>1988</td>
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<td>2012</td>
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<td>2003</td>
<td>Mahieu, Hans F., M.D.</td>
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Emeritus Fellows - 66


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<td>2010</td>
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<td>2012</td>
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<td>Grant, Nazaneen M.D.</td>
<td>Georgetown University Hospital, Department of Otolaryngology, 1</td>
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<td>McWhorter, Andrew J. M.D., OLOL &amp; LSU Voice Center, 7777 Hennessy Blvd., Ste 408, Baton Rouge, LA 70808</td>
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<td>2008</td>
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<td>Portnoy, Joel, M.D., Drexel University School of Medicine, Dept. of Otolaryngology, 219 Broad St., 9th Floor, Philadelphia, PA 19107</td>
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<td>2013</td>
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<td>2012</td>
<td>Rickert, Scott, MD, NY Univ. Dept. of OTO, 160 E. 32nd St, L3 Medical, New York, NY 10016</td>
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<td>2010</td>
<td>Rubin, Adam D. M.D., Lakeshore Ear, Nose and Throat Center, 21000 E. 12 Mile Road, St. Clair Shores, MI 48081</td>
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<td>2013</td>
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<td>2013</td>
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<td>2010</td>
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<td>2010</td>
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<td>2008</td>
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<td>2011</td>
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<td>2010</td>
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<td>2013</td>
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<td>2010</td>
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