Otolaryngology at Baylor University Medical Center

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The nose, the ears, and the throat have played significant symbolic roles in history and have been accorded attention in literature. Genesis 2:7 notes, "And the Lord God formed man of the dust of the ground and breathed into his nostrils the breath of life." The importance of the nose is thus mentioned in the Bible simultaneously with Adam's formation and preceding Eve's appearance during Adam's deep sleep. Is this perhaps an instance of cardiopulmonary resuscitation or perhaps a clearing of Adam's airway? In an Egyptian tomb of the Pharaoh Suhara, dating back to the fifth dynasty (c. 3500 BC), a tablet is dedicated to a physician who was apparently the Pharaoh's medical attendant. Suhara ordered the engraving in gratitude to his doctor because he had "made his nostrils well." This is interpreted by the translator as signifying "breath of life." Again, the nostrils are recognized as portals of life.

Otologists may perk up their ears when reading Shakespeare's *Hamlet*, in which the ears are the portal for a poisoning. Hamlet is told by his father's ghost, "Sleeping within my orchard . . . thy uncle stole, with juice of cursed henebon in a vial, and in the porches of my ears did pour the . . . distilment" (1). Scholars generally accept henebon as being henbane, or *Hyoscyamus*. Considered toxic for infants and young children in quite small doses (the extract from 20 seeds of *Hyoscyamus niger* can be fatal to a child), it is nevertheless used extensively in medicine as scopolamine. Shakespeare seems to have created a clever metaphor, as Hamlet's uncle, Claudius, is a smiling villain whose lies and flattery, like his poison, enter through the ears.

As for an early mention of the throat, there is the burning bush episode in the Bible. In response to the mission God gave Moses, to go to Egypt and free the Israelites from bondage, "Moses said unto The Lord . . . I am slow of speech, and of a slow tongue" (literal translation: "heavy of speech and of a heavy tongue") (Exodus 4:10). Many exegetes view this response as an excuse by Moses to try to escape the mission. Another interpretation, held by many scholars, is that Moses actually suffered from an organic oral or laryngeal problem (2). This latter view is supported by linguistic scholars who point out that in ancient Arabic and Akkadian, "heavy of tongue and mouth" meant something more than just a linguistic difficulty—possibly some structural anomaly. Neither view can be validated in the Bible. The interpretation of Moses' response to God remains unresolved.

THE DEVELOPMENT OF OTOLARYNGOLOGY

Otolaryngology developed over the ages as physicians and surgeons sought ways to treat patients suffering from diseases and malformations of ears, noses, and throats. For some decades ophthalmology was joined with these fields, and specialists served patients in all or some of the fields. However, as patient volume, physician interests, and specialization grew, ophthalmology separated from the other 3 subfields. The field of otolaryngology, as it developed during the 19th and 20th centuries, comprised 3 subfields: otology, rhinology, and laryngology.

Otology

Very little is known about the state of knowledge in the field of otology in ancient times. The Ebers papyrus, dating back to circa 1550 BC, is interesting for its insight into Egyptian medicine. Written in several dialects, suggesting that it was a medical encyclopedia, it discusses therapeutics and medicinals, with a large section on the eye and the ear. It is known from Herodotus that specialists in eye, abdominal, and head conditions existed, as did dentists, but it cannot be known with any certainty whether ear specialists existed in ancient Egypt. It is known, however, that deaf individuals were not eligible for the priesthood in Egypt.

Most writings on medical subjects in ancient times come to us from the Greeks. Hippocrates (c. 400 BC) is credited with the first observation that the eardrum is an integral part of the hearing apparatus (3). The greatest Greek physician after Hippocrates was Galen, who lived in the first century AD and was the founder of experimental physiology. He produced aphonia in a pig by severing the recurrent nerves, elucidated the effects of spinal cord transection, and differentiated sensory and motor nerves. Galen's knowledge of anatomy was chiefly based on dissections of animals, particularly the pig and the Barbary ape. Thus, his knowledge was subject to errors of ascribing to human anatomy his

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Figure 1. Early illustrations of the inner ear. (a) The course of the auditory nerve is vague in Vesalius' work, *De Humani Corporis Fabrica* (1543). (b) In Eustachius' rendition, the cochlea and semicircular canals are visible.

animal findings. He is credited with coining the term “labyrinth” for the internal ear. According to the early Viennese otologist Dr. Adam Politzer (3), Galen's invention of this descriptive term should not, however, be considered an indication that he understood the functional aspects of inner ear anatomy.

During their conquests in the Middle Ages, the Arabs passed on much of the knowledge of the Greeks by translating Greek medical manuscripts into Arabic. The most significant contribution of Arab-Islamic medicine was the preservation and transmission of these Greek medical works. In addition, the Arabian physicians made notable advances in materia medica and systematized the field of medicine (4). This knowledge was later translated into Latin and then introduced through Spain to Western Europe. Arab physicians frequently applied mineral and vegetable products to the ears for otologic problems. They used the juice of the *Sempervivus*, an evergreen shrub, for ear pain.

The renaissance in medicine can be said to have started in Italy, with Vesalius. Although he is generally considered the greatest anatomist of the 16th century, his otologic knowledge was meager. In his book *De Humani Corporis Fabrica* (book I, plate viii), the auditory nerve winds about aimlessly in the inner ear (5) (Figure 1a). A contemporary of Vesalius, Eustachius wrote an anatomy of the ear that is much more detailed and accurate (6) (Figure 1b). In 1683, Duverney's book, *Traité de l'Organe de l'Ouïe*, was published. It was the first text on otology, as well as the first medical text in the vernacular—in this case, in French (7).

In the early 19th century, the practice of otology was generally associated with ophthalmology. Many of the eye and ear institutions—including facilities in Boston, Philadelphia, and Baltimore—were founded to treat eyes and only later added ear to their names. The American Otological Society, founded in 1868, mentions in its first *Transactions* that the American Ophthalmological Society proposed to devote a day at its annual meeting to otology since many of its members also treated diseases of the ear.

Most believe that otology became a separate specialty in 1861, when Dr. Adam Politzer (Figure 2) was appointed the first lecturer in diseases of the auditory organ at the Vienna Medical School. In 1873, Dr. Politzer and his rival, Dr. Josef Gruber, the

Figure 2. Adam Politzer (1835–1920).

2 forefathers of Viennese otology, established the first department of otology at the school (8).

Vienna became the leading center in physiology and therapeutics and attracted many American physicians for study. Dr. Politzer's 1907 account mentions 3 Texas physicians as participants in otology teaching programs: Dr. John McReynolds, professor of ophthalmology and otology at Southern Methodist University's medical school in Dallas; Dr. E. H. Cary, dean and professor at Baylor University College of Medicine in Dallas and the leading Dallas practitioner in the eye, ear, nose, and throat (EENT) field; and Dr. Seth M. Morris at the University of Texas' department of medicine in Galveston (3).

During World War I, most European medical schools suffered near destruction, while American schools improved greatly. As a consequence, during that time few Americans were attracted to Europe for postgraduate medical education. After the war, however, Americans continued to be drawn to Vienna to study otology and laryngology because of limited opportunities for training in those areas in the USA. Most American medical students in Vienna, therefore, were studying various segments of otorhinolaryngology. With so many US students in EENT departments, more of those courses were conducted in English rather than in German. German was, of course, the language used for nearly all other instruction. It is interesting to note that in the 1902 *Medical Register*, 12 Dallas physicians are listed as EENT specialists. None limited their practice to either the eye alone or to the ear, nose, and throat alone. Of the 12, 4 had gone to Europe for training in their specialty. The Dallas population in 1900 was 42,000.

Rhinology and laryngology

In the first century AD, Galen made an astute observation about nasal function. He noted that air inspired through the nose does not go directly into the trachea. Rather, it follows a curve, or deflection, which has a 2-fold advantage: first, the air is sometimes cold and the deflection allows for warming; and second, small particles of dust or ashes do not fall directly into the tra-

Figure 3. Leonardo da Vinci's drawing of the anterior view of the skull with maxillary and frontal sinus exposed. Reprinted from reference 11.

chea. As mentioned previously, Galen also showed that interrupting the recurrent nerves to the larynx produces aphonia.

During the Dark Ages, little of note took place in rhinolaryngology (9). In the 13th century, Arnold of Villanova described some diseases of the nose. He wrote that one should take a small bifurcated branch of wood like a forceps and examine the interior of the nose. This was state-of-the-art technology at that time! As for state-of-the-art surgery, tonsillectomy was performed by evulsion with the fingers. For severe throat inflammation (quinsy), the prognosis was considered poor. Milder cases were treated with herbal remedies and bloodletting, as well as with a tube passed into the pharynx along the jaws so that air might be taken into the lungs—an early form of intubation.

Nathaniel Highmore (1614–1685) dedicated his *Anatomy*, published in 1651, to his friend William Harvey. In the dedication, Highmore refers to joint experiments on the circulation of the blood (10). This text is the first to include and defend the concept of blood circulation. The inclusion of the anatomy of the sinuses in his text gave rise to the designation of the maxillary sinus as the “antrum of Highmore.” In a case of maxillary sinus infection arising from a dental root, Highmore removed the tooth and pus came out. He then inserted a feather well up into the sinus cavity. He stated that the patient feared that the source of the pus was in her brain! It should be noted that in 1513—more than 100 years before Highmore's work—Leonardo da Vinci drew in his notebook views of the skull that clearly depicted the maxillary air sinus (11) (Figure 3).

The field of laryngology was advanced by Bozzini's discovery that a mirror could be used to examine the larynx. In 1807, he used a wax candle for a light source and a mirror in the throat to visualize the glottis. In 1855, Manuel Garcia, a singing teacher called the “father of laryngology,” reported his findings using a laryngeal mirror with sunlight as the source of illumination (12). He described the actions of his own vocal cords, primarily in

Figure 4. Dr. Johann Czermak with his invention of a large perforated concave mirror held between the teeth. The mirror was used to view the larynx.

musical phonation. He was helped, no doubt, because he could tolerate prolonged contact with a foreign body, the mirror, in his own pharynx without provoking vomiting. An international celebration was held in 1905 on his 100th birthday; he died at age 102. Subsequent to Garcia's published works, Prague-born Dr. Johann Czermak developed the idea—drawing on the work of Dr. Ludwig Türck—of a large perforated concave mirror, at first held in the examiner's teeth, using sunlight or artificial light (13) (Figure 4). Soon thereafter he turned the laryngeal mirror upward and was able to examine the nasopharynx. Laryngoscopy was soon brought to the USA. The American Laryngological Association was formed in 1879.

In 1884, Dr. Carl Koller was the first physician to use the topical application of cocaine for anesthesia in eye surgery. He had experienced numbness of his tongue when cocaine was applied, and this gave him the idea of using cocaine for local anesthesia (14). Dr. Sigmund Freud approached him about using cocaine to treat morphine addiction; it is reported that Dr. Freud called him “Coca Koller.” Rhinologic surgery also benefited from the local anesthetic properties of cocaine, and thus intranasal surgery rapidly became commonplace.

Otorhinolaryngology

In his 1907 work, *Geschichte der Ohrenheilkunde*, Dr. Adam Politzer wrote that the study of otology and rhinology had been fused (3). He attributed this combination of what had been separate disciplines to the desires and financial incentives of the boards of smaller universities. The disciplines were also combined among physicians in smaller cities and towns.

In the USA the fusion of the practice of otology, rhinology, and laryngology accelerated with the 1895 founding of the

American Laryngological, Rhinological, and Otological Society, "The Triological Society." This combination of the otological and rhinological specialists can be appreciated when one reads, in the preface to Stevenson and Guthrie's *A History of Oto-Laryngology*, published in 1949: "This is the first history of the specialty of oto-laryngology to be written" (15).

World War II brought with it striking advances in the treatment of traumatic injuries on the battlefield. Many lives were saved, not only by surgical techniques but also by the advent of the antibiotic age. Though Prontosil and sulfanilamide had been in limited use for a few years, penicillin was the miracle drug in the early 1940s. There was much talk nationwide in the otolaryngology community that the specialty was on the road to extinction. Pessimism was rampant at meetings. After all, a large part of the physician's practice was the treatment of ear, sinus, and throat infections. What would happen to the specialty if tonsillectomy and mastoid surgery were eliminated by this new wonder drug? "Mastoid trouble" in a child was a dreaded possibility for parents, concerned whenever their child had an ear infection. Complications of purulent otitis media were frequent. Mastoiditis, lateral sinus thrombosis, meningitis, and brain abscess were serious problems. More than 50% of brain abscesses were due to otitis media, acute and chronic. If throat infections were cured, would there be any need for a tonsillectomy? In addition to the ear and throat infections, sinusitis was also easily controlled with penicillin. It seemed that the future of the specialty was in peril.

At this time, the development of the fenestration operation and the endaural approach to the middle ear and mastoid became major factors in the revival, or resuscitation as the pessimists saw it, of otolaryngology. In 1938, Dr. Julius Lempert wrote a paper on creating a new oval window ("nov-ovalis," he called it) (16). The purpose was to bypass the fixation of the stapes in the oval window, a condition called otosclerosis. (The process of otosclerosis is gradual, and the decreasing mobility of the ossicular chain produces a progressive decrease in hearing of the conductive type.) Lempert also introduced the motor-driven drill in mastoid surgery, which was much more rapid and precise than previous techniques that used the chisel and rongeur to enter the middle ear and mastoid. His work led to a renaissance in otologic surgery, for now the otologic surgeons were restoring hearing to thousands of people with hearing loss as a consequence of otosclerosis and not just dealing with ear and mastoid infections. Lempert's work had actually been attempted previously in Europe by Drs. Barany and Sourdille, but unsuccessfully.

Specialization and certification of specialists were developed early in the field of otolaryngology. In 1924, otolaryngologists created the second US examining board, the American Board of Otolaryngology. The first board, the American Board of Ophthalmology, had been established in 1916. The nation's 14 other medical specialty boards were established in the 1930s (17).

With an increase in the scope of otolaryngology came an increase in the number of otolaryngologists. The American Academy of Ophthalmology and Otolaryngology (AAOO) had been founded in 1903. By the 1970s, because of the dramatic increase in the number of ophthalmologists, the annual meetings had become increasingly difficult to schedule and run in one location. In 1979, the academy split into the American Academy of Ophthalmology and the American Academy of Otolaryn-

gology. In 1980 the American Academy of Otolaryngology changed its name to the American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS) in recognition of the fact that otolaryngology was a regional specialty dealing with the head and neck. Head and neck oncologic surgery had become an important part of the training in otolaryngology residency programs. Many residency programs also included nasal allergy and plastic surgery of the head and neck in their training.

OTOLARYNGOLOGY IN DALLAS

In Dallas as well as in Texas, in the late 1800s and early 1900s, physicians and surgeons provided care for EENT conditions as part of their general practice. Among the relatively few physicians who specialized during those years, however, otology and ophthalmology became the most popular areas. The first Dallas physician to so limit his practice was Dr. Robert Chilton, who specialized in 1880 (18).

Among other specialists, Dr. Godfrey Beaumont, born at sea on a ship bound for the USA, came to Dallas after studying medicine at the University of Louisville in Kentucky. He called himself a physician, oculist, and aurist. He gradually relinquished his regular practice and from 1894 on was known as only an EENT specialist (19).

Dr. John Briggs came to Dallas in 1889 and in the same year founded the *Texas Health Journal*. He left Dallas in 1894 to take EENT courses, first in New York and then in London, Glasgow, Edinburgh, and Paris. He returned to Dallas in 1896, practiced as an EENT specialist, and published and edited a periodical for oculists and aurists, *The Specialist* (18).

Dr. Tilley Foulkes was born in Texas and attended medical school at Jefferson Medical College in Philadelphia. He went to Europe to study EENT medicine and surgery at the Kaiser Wilhelm University in Berlin and then returned to the USA for further training in New York. He came to Dallas in 1896 and was the only foreign-educated specialist in Dallas before 1900 (20).

Dr. Theodore Arnold came to Dallas from Switzerland in 1891, after attending the Universities of Berne, Zurich, Munich, Strasbourg, and Prague. He opened an office to practice otology and ophthalmology. He was joined in 1897 by Dr. Martin Taber, who had gone to Marion Sims Medical College (now Washington University School of Medicine). The 2 doctors practiced together as oculists and aurists until 1929, a notable 32-year partnership (21).

Dr. Edward Henry Cary, eventually a major figure in medical practice and medical politics, first came to Dallas in 1890 as a traveling salesman for his brother's A. P. Cary Dental Supply Company (22). In 1895 he entered Bellevue Hospital Medical College, and upon graduation he interned and later taught at Bellevue and New York Eye and Ear Infirmary. Following his brother's death, Dr. Cary returned to Dallas, reorganized his brother's business, and entered medical practice with his practice limited to EENT (18). He served as professor of ophthalmology and dean of the University of Dallas Medical Department in 1902 and 1903 (18). When Baylor University College of Medicine succeeded the University of Dallas Medical Department, Dr. Cary continued in practice and in business. He served as professor of EENT diseases from 1903 until 1920; as professor of ophthalmology from 1920 until 1943; as dean from 1903 un-

til 1920; and as dean emeritus and chairman of the advisory board from 1920 until 1943, when Baylor University College of Medicine moved to Houston (23).

From 1903 until 1943, when the Baylor University College of Medicine was situated in Dallas, faculty members were also the principal members of the medical staff of the Texas Baptist Memorial Sanitarium (later named Baylor Hospital and Baylor University Hospital). Numerous physicians taught and practiced in the allied fields of EENT medicine and surgery. As noted, Dr. Cary practiced at the Baylor institutions for many years. As he expanded the investor-owned Medical Arts Building and added a hospital in 1928, he transferred his surgical practice there, as did many of the EENT specialists who had offices in the Medical Arts Building.

Among prominent members of the Baylor University College of Medicine faculty who practiced in the EENT fields were Drs. David L. Bettison (1911–1918 and 1925–1930), Frank D. Boyd (1918–1923), Abell D. Hardin (1938–1943), William D. Jones (1925–1941), Thomas S. Lane (1941–1943), Oscar M. Marchman, Sr. (1936–1943), Lyle M. Sellers (1938–1943), J. Dudley Singleton (1939–1943), and William R. Thompson (1918–1919) (24).

None of the Baylor University College of Medicine faculty members who practiced in the field of otolaryngology moved to Houston in 1943, when the college moved there. All continued in Dallas, where their practices were well established. In any event, their teaching had been part-time, and they were generally unpaid as faculty members. They had little reason to move with the medical school (25).

When the Southwestern Medical School of the Southwestern Medical Foundation—established largely at Dr. Cary’s initiative—was formed and subsequently became The University of Texas Southwestern Medical School, a few of the practitioners who had served on the Baylor University College of Medicine faculty continued to teach part-time in the new medical school. Dr. Oscar Marchman, Sr., after serving for 7 years on the Baylor University College of Medicine faculty, became the first professor of otolaryngology at the new school (26). At that time Dr. Marchman was the leading otolaryngologist in Dallas. He performed tonsillectomies in his office in the Medical Arts Building in downtown Dallas.

Other Baylor University Hospital physicians who later served on The University of Texas Southwestern Medical School clinical faculty included Drs. J. D. Singleton, Lyle Sellers, and Ludwig A. Michael. In 1967, Dr. Donald Alexander was appointed the first full-time faculty member in otolaryngology. As the school moved toward the appointment of full-time salaried faculty members, fewer community practitioners served on the faculty (26).

OTOLARYNGOLOGY AT BAYLOR UNIVERSITY HOSPITAL, 1946–1977

While the medical staff of Baylor University Hospital had from the time of establishment (as the Texas Baptist Memorial Sanitarium in 1903) always included otolaryngologists, the service had not been accorded organizational recognition. When Dr. Lyle Sellers was appointed the first chief of the otolaryngology service at Baylor University Hospital in 1946, his designation as chief was the first such appointment and the first

Figure 5. Lyle M. Sellers, MD.

Figure 6. Ludwig A. Michael, MD.

recognition of otolaryngology as a separate service (27). Dr. Sellers’ appointment antedated by many years the recognition of otolaryngology as a separate department at The University of Texas Southwestern Medical School in Dallas in 1982. Prior to 1982, when Dr. William Meyerhoff was appointed the first chairman of the medical school’s department of otorhinolaryngology, the service was considered a division in the department of surgery.

Dr. Lyle Sellers was both a member of the Southwestern Medical School faculty and a very active member of the medical staff of Baylor University Hospital (Figure 5). He performed the first fenestration in North Texas at Baylor.

In the late 1940s and 1950s, when there was an extreme shortage of beds and operating rooms at Baylor University Hospital, a few surgeons were accorded extraordinary privileges: each of them could reserve an operating room once a week. The room was held for the surgeon to schedule cases up until the last minute. The privilege was extended to Dr. Sellers as well as to Drs. Harold O’Brien in urology, Albert D’Errico in neurosurgery, and Theodore Mills in plastic surgery.

Dr. Sellers was recognized nationally for his erudition. His papers at national meetings were interesting and well received. In addition to his scientific papers, he presented historic perspectives at national meetings: one on Beethoven’s deafness (28) and another on hyperbaric therapy from a historical viewpoint, calling it “The fallibility of the Forrestian principle” (29).

Dr. Sellers was an avid and astute book collector. He assembled a library that was among the finest private medical collections in the country. Actually, his collection was far more than a medical collection; it included a wide range of classics—first editions of some of Mark Twain’s works, a first edition of Audubon’s *Birds of America*, a first edition of Samuel Johnson’s *Dictionary of the English Language*, a page from the Gutenberg 1455 Bible, several Book of Hours (manuscripts from the pre-printing era), and the Nuremberg Chronicle of 1493 (a history of the world written by a physician but not mentioning Columbus and the New World). Dr. Sellers bequeathed the collection to Baylor University Medical Center (BUMC). It is housed in the campus library in a room of its own.

In 1964, Dr. Sellers was succeeded as chief of otolaryngology by Dr. Ludwig Michael (Figure 6). Dr. Michael joined the medical staff of Baylor University Hospital in 1950 and also became a member of the clinical faculty of The University of Texas

Figure 7. Marvin Shepard, MD.

Figure 8. Lawrence S. Weprin, MD.

Southwestern Medical School. He came to Baylor after completing a residency in otolaryngology at Barnes Hospital in St. Louis. In the practice of otolaryngology, Dr. Michael has given particular attention to allergy diagnosis and treatment. He has overseen the training of residents at Southwestern Medical School. He has a particular interest in medical history and the Sellers collection, drawing on his multiple language capabilities.

In 1955, Dr. Michael performed the first stapes operation in Dallas. As previously noted, the fenestration operation was re-introduced by Dr. Lempert to bypass the fixed stapes in the footplate. In 1954, Dr. Samuel Rosen revived the concept of mobilizing the stapes footplate (30). It had been done previously by others without success. Otosclerosis is a diagnosis made by exclusion—exclusion of infection and of middle ear fluid, with a normal otologic examination but a gradually progressive conductive hearing loss. Dr. Rosen's mobilization was serendipitous. Before submitting to a fenestration, a patient asked Dr. Rosen how certain he was of the diagnosis of otosclerosis. Dr. Rosen suggested looking in the middle ear, easily done under local anesthesia by elevating the eardrum and thus exposing the middle ear and ossicles. When he did that and palpated the stapes, he loosened the fixated stapes and the patient said, "I can hear!" Patients got word that the operation was being done in Dallas and came from an area of North Texas, southern Oklahoma, New Mexico, and northern Louisiana for the surgery. Unfortunately, the process causing the bony fixation continued to progress after surgery, and most patients refixated after a few years and their hearing again grew worse. However, in 1967, Dr. John Shea of Memphis introduced stapedectomy, which involved removing the stapes and placing a graft (a vein was used in the early years) over the oval window with a prosthesis (usually wire) from the incus to the vein graft. This technique stabilized the hearing improvement.

In 1969, Dr. Marvin Shepard was appointed chief of the otolaryngology service at Baylor (Figure 7). He made a major contribution to otolaryngology with his development of the grommet tube for middle ear ventilation. Prior to his innovation, the ventilation tubes (first devised by Dr. Beverly Armstrong of Charlotte, NC) were straight polyethylene tubes and tended to extrude after just a few weeks in the ear. By using grommets, tubes stayed in place for much longer periods. The Shepard grommet, with minor modifications by others since his time, is still the tube of choice for middle ear ventilation.

In 1975, Dr. Michael was again designated chief of otolaryngology. He served until 1980, when Dr. Lawrence Weprin succeeded him and led the department during the final 2 decades of the 20th century and into the 21st century (Figure 8).

Dr. Weprin trained at Northwestern University Medical School and came to Baylor in 1975. He has had extensive experience in endoscopic sinus surgery and is also interested in head and neck surgical oncology.

During the 1950-to-1980 era—the period of most rapid expansion and development of BUMC into a nationally recognized community medical center—the more active members of the department of otolaryngology in addition to Drs. Sellers, Shepard, and Michael were Drs. Kawasaki, Owens, and Weprin.

Dr. Masashi Kawasaki completed a residency at Barnes Hospital in St. Louis and came to Baylor in 1969. His professional interests were in nasal and septal reconstruction and sinus surgery.

Dr. Fred Owens completed a residency at the University of Kentucky Hospital. After specialized training in otologic surgery at the House Institute in Los Angeles, he came to BUMC in 1972.

Dr. Owens recalls that when he came to Dallas to look for office space in 1971, he was favorably impressed by both his prospective colleagues and BUMC. He found Mr. Boone Powell, Sr., then the executive director of the hospital, to be

very encouraging toward my practice of otology. Subsequently he made every effort to make available the equipment and technical personnel needed to develop the practice of otology and neurotology. Roberts Hospital was not even a dream at that time. The hospitals consisted of the Hoblitzelle, Jonsson, and Truett wings. The bed capacity of the institution at that time was about 1200. All surgery was performed on the fifth floor of Truett Hospital. Ms. June Pellett was the head nurse in surgery, and Ms. Patricia Brydon was her assistant. Ms. Brydon would later become the head nurse when Ms. Pellett retired (31).

In March 1972, soon after starting his practice at BUMC, Dr. Owens performed the first shunt operation in Dallas for the relief of Meniere's disease. This operation on the endolymphatic sac was an attempt at relieving endolymphatic hydrops, felt to be the source and the cause of the symptoms of vertigo in Meniere's disease. In April 1972, Dr. Owens performed the first translabyrinthine acoustic neuroma surgery in North Texas, and in October 1972, he performed the first middle fossa approach to acoustic neuroma. He remains in the forefront of otologic surgeons in North Texas.

In September 1972, Dr. Owens founded the Dallas Foundation of Otology and opened a microsurgical laboratory at BUMC. This was done with the help of the Baylor Health Care System Foundation and the family of Mrs. Hannah Davis. The laboratory has been an important teaching facility for otologic surgeons; by the year 2000, 900 students had completed courses in otologic surgery.

OTOLARYNGOLOGY AT BUMC, 1977–2000

Otolaryngology at BUMC was an active service throughout the 2 final decades of the 20th century as the medical center expanded and began offering virtually every subspecialty service available at other community and academic medical centers.

Figure 9. Masashi Kawasaki, MD, Fred D. Owens, MD, Dwight A. Lee, MD, Mark A. Hardin, MD, Stephen A. Landers, MD, and Presley M. Mock, MD.

Scientific advancements that improve the lifestyle of many patients with chronic sinusitis have resulted in a marked increase in the number of patients undergoing surgical treatment of sinus disease. The new instrumentation has made this surgery both more thorough and less traumatic. With the widened scope of otologic surgery and improvement in oncologic surgery, otolaryngology has continued to thrive.

Through Dr. Weprin's encouragement, the otolaryngology service at BUMC has offered its members the new instruments as they have become available (powered endoscopy and image-guided surgery, for example) and the new techniques as they have been developed. During his years as chief, BUMC's otolaryngology service has been cited in *U.S. News & World Report* as one of the top 25 departments in the USA. Dr. Weprin has been supported by the active members of the service: Drs. Mark Hardin, Masashi Kawasaki, Stephen A. Landers, Dwight A. Lee, Presley M. Mock, and Fred D. Owens have sustained the reputation of otolaryngology care at Baylor (Figure 9).

Dr. Dwight A. Lee completed a residency in otolaryngology at Barnes Hospital. He joined the BUMC staff in 1981. He has interests in oncologic and reconstructive laryngeal surgery.

Dr. Mark Hardin completed a residency in otolaryngology at the Ohio State University Hospitals. He joined the BUMC medical staff in 1987. His particular interests are in pediatric otolaryngology and sinus surgery.

Dr. Stephen A. Landers completed an otolaryngology residency at The University of Texas Health Science Center at Houston. Subsequently, in 1989 he completed a fellowship at BUMC and joined the BUMC staff the same year. In addition to general otolaryngology, he is interested in facial nerve disorders.

Dr. Presley M. Mock completed a residency at The University of Texas School of Medicine in San Antonio. He has been on the BUMC staff since 1991 and is particularly interested in sinus and head and neck surgery.

As the number and size of hospitals grew in Dallas during the latter half of the 20th century, the medical community grew in numbers, qualifications, and subspecialization. At century's end, the Dallas County Medical Society included among its members 68 otolaryngologists and 6 specialists in otology/neurotology.

OTOLARYNGOLOGY IN THE NEW CENTURY

As we enter the 21st century, otolaryngology is on the threshold of many exciting advances. Many research goals are being actively pursued. Some of the goals are general in nature, such as elucidating and solving the puzzle of cancer. There is the promise of utilizing gene therapy and gene manipulation to achieve

better survival and more cures in head and neck cancer. Some innovations are, however, more specifically within the realm of our field.

In otology, work is being done to develop an implantable hearing aid for "nerve" deafness. We already have such a device for conductive hearing loss when the ear canal does not allow the use of a conventional aid. Research continues on growing new inner ear hair cells, already successfully done in some species. The potential benefit for human use is breathtaking.

One of the most prevalent childhood problems is otitis media, with the potential consequence of hearing loss. The vaccine available for the most common bacterial pathogens is minimally effective. A more effective vaccine giving greater protection is needed and may be available relatively soon.

The treatment of sinus disease continues to improve. In addition to the endoscopic sinus procedures available, image guidance systems can now be used, which make sinus surgery more precise and lead to better surgical results and far less morbidity than in the past.

Over the years, the treatment of allergies has gone through several phases. Avoidance of an offending allergen was always available but seldom attainable. Desensitization, getting shots at regular intervals for several years, was time tested but had several drawbacks. The possibility of a serious, immediate adverse reaction to a shot always existed, as well as the inconvenience and cost of regular office visits to get the shots. The development of antihistamines was welcome, but the side effects were often a problem, the most common being drowsiness. The arrival on the scene of nasal steroid sprays and nonsedating antihistamines further improved treatment options. In the not-too-distant future, a new type of injectable treatment will become available: an anti-IgE shot expected to be effective against any allergen whose mode of action is IgE mediated.

The new century is being ushered in with much hope for progress in many otolaryngological areas.

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