The Laryngoscope

TRIOLOGICAL SOCIETY CANDIDATE THESIS

Contemporary Review

Pediatric Otolaryngology: the Maturation of a Pediatric Surgical Subspecialty

Michael J. Cunningham, MD; Aaron C. Lin, MD

Objectives/Hypothesis: To review the historical development of pediatric otolaryngology as a surgical subspecialty and to compare and contrast this historical development with that of pediatric surgery and pediatric urology.

Study Design: Literature search.

Methods: A sequential comparison of these three surgical subspecialties was undertaken in terms of their early origins and founding physicians, sections and societies, standardization of training and accreditation, official recognition, and certification. Supportive materials were obtained via a literature search using the PubMed database from 1950 to the present, supplemented by archived material from the libraries of the Massachusetts Eye and Ear Infirmary and the Countway Library of the Harvard Medical School.

Results: Pediatric surgery, urology, and otolaryngology have taken somewhat parallel but also disparate paths toward surgical subspecialty establishment.

Conclusions: Pediatric otolaryngology, despite its many accomplishments, lags behind its surgical and urologic brethren from both an accreditation and certification standpoint.

Key Words: Pediatric otolaryngology, pediatric surgery, pediatric urology, surgical subspecialty.

Level of Evidence: 5

***Laryngoscope,* 121:194–201, 2011**

INTRODUCTION

The major socioeconomic and healthcare-related developments that historically contributed to the evolution of pediatric surgical subspecialties have been well documented.[1,2] Principle among these were the creation of hospitals specifically designated for the care of children and the subsequent rise of both pediatric anesthesia and neonatology as bona fide specialties within these institutions. There arose a safe medical environment where surgeons could operate on newborn, even premature, infants and critically ill children with acceptable risks.

Although ably cared for by surgeons trained in adult surgical care, acknowledgment developed both within and outside of the surgical disciplines that surgeons caring for such children needed not only to be technically skilled but to be knowledgeable of childhood growth and development. Infants and children were recognized to not simply be "little adults," but rather distinct individuals whose disease manifestations, therapeutic interventions, and the lifelong consequences thereof were directly influenced by their anatomical, physiological, and psychological maturation.

The specialization of pediatric surgical care began with the development of pediatric surgery from general surgery. Pediatric urology and pediatric otolaryngology soon followed. All pediatric surgical specialists share in common the management of children with congenital anomalies and other developmental conditions, children with infectious and inflammatory disorders unique to these age groups, and children with chronic diseases requiring the care of other pediatric medical specialists in tertiary care settings. As stated succinctly by Charles Bluestone, pediatric surgeons "care for special problems or special children, or both, in a special institution."[3]

The maturation of the surgical subspecialty of pediatric otolaryngology in North America can be traced from isolated practitioners in the first half of the 20th century, to informal meetings of interested individuals in the 1960s and 1970s, to the development of fellowships and national organizations in the late 1970s and 1980s, to the hundreds of practicing pediatric otolaryngologists in the United States and Canada today. Pediatric surgery, urology, and otolaryngology

From the Department of Otolaryngology, Massachusetts Eye and Ear Infirmary, Department of Otology and Laryngology, Harvard Medical School, Boston, Massachusetts (M.J.C.); and Department of Otolaryngology, University of Southern California Keck School of Medicine, Los Angeles, California (A.C.L.), U.S.A.

Editor's Note: This Manuscript was accepted for publication April 13, 2010.

The authors have no funding, financial relationships, or conflicts of interest to disclose.

Send correspondence to Michael J. Cunningham, MD, Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, MA 02114. E-mail: michael_cunningham@meei.harvard.edu

DOI: 10.1002/lary.20990

have taken somewhat parallel but also disparate paths toward establishing themselves as legitimate surgical subspecialties. Pediatric otolaryngologists and all other otolaryngologists who care for children have something to gain from reviewing the historical development of pediatric otolaryngology in comparison to these other two fields.

EARLY ORIGINS

The origins of all three pediatric surgical subspecialties began with a few founding fathers. For pediatric surgery, these gentlemen were Herbert Coe and William Ladd.[4] Coe, who trained at the University of Michigan and practiced in Seattle, is credited as being the first true pediatric surgeon in the United States when he dedicated his practice solely to the care of children in 1919 after spending time under the mentorship of Ladd at the Children's Hospital Boston.[5] The Harvard-trained Ladd had an adult practice at the time, but had become particularly interested in pediatric surgical care following the 1917 explosion of a military ship in Halifax Harbor that killed and injured thousands of children.[6,7] Ladd would eventually in 1930 commit his practice and academic career solely to the care of children. Coe first approached the American College of Surgeons (ACS) in the late 1930s to petition for a separate pediatric surgery section; his persistence in this effort would span several decades.[5] His initial petition was denied as the ACS believed that granting this request would further splinter an already fragmenting field given the prior departures of orthopedics, urology, and plastic surgery.[4] This fear of fragmentation would prove to be a common theme for not only pediatric surgery but for future pediatric specialization efforts in other surgical fields as well.

The genesis of pediatric urology is historically traced to a Boston cab ride in 1948, during which Frank Bicknell first discussed with a colleague his idea of creating an organization for those interested in pediatric urology.[8] Three years later Bicknell, a University of Michigan trained urologist, and Meredith Campbell, a prominent New York urologist at the time with similar pediatric interests, sent letters to urologists working at various children's hospitals around the country inviting them to meet before the annual American Urological Association (AUA) meeting. In 1951, the Society for Pediatric Urology (SPU) was thus formed with Campbell serving as its first president.[9] The SPU grew rapidly in numbers, and by the mid-1950s the AUA began to deliberate what was to be done with what it considered a splinter group of members who met before and allegedly during the annual AUA meeting. Such deliberations contributed to the SPU remaining outside the auspices of the AUA for many years thereafter.

Just as there had been general surgeons and urologists who treated children prior to any formal pediatric surgical specialization, otolaryngology similarly had its early pioneers. Burton Alexander Randall of the Children's Hospital of Philadelphia[10] and Samuel Langmaid of the Children's Hospital Boston[11] in the late 1800s were two men who recognized the need to have otolaryngologists at these pediatric institutions devoted to the care of children. By the early 1900s, the practice of pediatric otolaryngology consisted of several otolaryngologists who took time away from their comparatively larger adult practices to care for children at their respective pediatric hospitals. This group included Gabriel Tucker Sr. and Chevalier Jackson in Philadelphia, Paul Holinger in Chicago, and D. Crosby Greene in Boston. As Surgeon in Diseases of the Throat at the Children's Hospital Boston, Greene reported in 1919 that a total of 2,028 operations were performed by his service, nearly 1,900 of which were tonsillectomies and adenoidectomies.[11] Lyman G. Richards succeeded Greene at the Children's Hospital Boston in 1925; he would be joined in the early 1930s by Carlyle Flake and in 1938 by Charles Ferguson, essentially creating the first multiple-member pediatric otolaryngology group practice. Review of their surgical logs in the 1930s and 1940s reveals their operative practices to have consisted principally of tonsillectomies and adenoidectomies, myringotomies, endoscopies, esophageal dilations, acute mastoidectomies, and the performance of tracheotomies in children with croup. Flake assumed the role of otolaryngologist and chief at the Children's Hospital Boston in 1947, a position he would hold until 1970, at which time he was succeeded by his lifelong associate Charles Ferguson, who remained at the position until 1974; their joint careers remarkably spanned four decades.[11]

In the 1950s three prominent full time pediatric otolaryngologists came to the forefront in North America, Seymour Cohen in Los Angeles, Blair Fearon in Toronto, and the aforementioned Charles Ferguson in Boston.

Seymour Cohen was born and educated in Chicago, and subsequently completed his otolaryngology training at the University of Southern California in 1945.[12,13] He stayed in Los Angeles and by 1954 had dedicated his private practice solely to the care of children. He became chief of the section of otolaryngology at the Children's Hospital of Los Angeles where he trained hundreds of otolaryngology residents. He published over 60 articles primarily on pediatric airway issues and gained notoriety as a world-renowned endoscopist. He remained chief there into the 1970s and continued to practice until the early 1990s. He was the inaugural president of the American Society of Pediatric Otolaryngology among his many accolades.

Blair Fearon graduated from the otolaryngology residency program at the University of Toronto in 1948, then completed a year of research followed by a subsequent year as chief resident at the University of Pennsylvania.[14] In 1950 he returned to Toronto to join the otolaryngology staff at The Hospital for Sick Children, where he remained for the rest of his career, devoting his practice to pediatric otolaryngology. Like Seymour Cohen, he was a skilled endoscopist and a much respected teacher in the field. Through his interest and research in the management of subglottic stenosis he became, along with his protégé Robin Cotton, a pioneer in pediatric airway surgery.[15]

Charles Ferguson completed his medical education at Harvard University in 1933, a pediatric internship at the Boston City Hospital in 1934, and his pediatric surgery residency in the newly created training program under William Ladd in 1935 through 1938 at the Children's Hospital Boston.[16] He joined the staff there in 1938. In contrast to his associates Lyman Richards and Carlyle Flake, who both also had adult practices, Ferguson was truly the first full-time pediatric otolaryngologist in the United States. He practiced until 1974 and had a lifetime interest in defining pediatric otolaryngology as a subspecialty. He was an internationally recognized laryngologist and bronchoesophagologist, and he coedited the first pediatric otolaryngology textbook originally published in 1967 with a second edition in 1972.[17] One of Ferguson's trainees would later take the steps necessary to move the subspecialty field of pediatric otolaryngology further forward.

SECTIONS AND SOCIETIES

Facing continued resistance from the American College of Surgeons, Herbert Coe in 1940 approached the American Academy of Pediatrics (AAP) with his idea of establishing a special section for pediatric surgery.[4] This request was initially denied, but resistance gradually softened, and in 1947 Coe was asked to present a two-hour program discussing pediatric surgical issues to the AAP general assembly. Apparently this program was successful because in 1948 the Surgical Section of the AAP was formed with Coe serving as its first chairman. This initial creation of a Surgical Section within the AAP was historic as it would pave the way for other surgical fields to follow suit in future years.

In 1959, urology also sought recognition within the AAP. Frank Bicknell was once again instrumental in organizing his fellow pediatric urologists to apply for an AAP-sanctioned section.[9] He eventually received their support despite reservations as to the need for another pediatric urology society. An additional hurdle was the AAP requirement that its section members devote at least 50% of their practice to the care of children. In 1959, no urologists restricted their practice solely to children, and few practiced pediatric urology more than 50% of the time. The AAP, however, was still receptive and compromised by granting the formation of a Committee on Urology within the Surgical Section in 1960. This affiliation was even approved by the American Urological Association, which perhaps hoped its splinter organization, the Society of Pediatric Urology, would be assimilated into this AAP Committee. Over a decade would pass before the AAP Committee on Urology matured to become the Section on Urology in 1971. By this time the pediatric practice percentage provision for membership had been increased to 75%, but this was now a readily attainable goal for many pediatric urologists, a reflection in and of itself as to how the practice of pediatric urology had progressed.[9]

Charles Ferguson championed the cause of pediatric otolaryngology in many venues but eventually concluded that the interest was not there at the national level.[18] One of his students, Sylvan Stool, would have greater success in this respect. Trained initially in Texas as a general practitioner and later as a fellow in pediatric surgery with Herbert Coe in Seattle, Stool applied for and was accepted into a position at the Children's Hospital Boston in 1953 on the pediatric medical service after deciding to focus on general pediatrics.[1] He was asked to replace an ill-stricken otolaryngology resident at the hospital, and in doing so came under the tutelage of both Carlyle Flake and Charles Ferguson. Stool was subsequently offered the otolaryngology residency position, but he could not afford further training in Boston. He moved to Denver where he practiced general pediatrics for a few years, eventually returning to and completing his formal otolaryngology residency training as the first resident of the otorhinolaryngology department at the University of Colorado.[19] While there he proposed and received National Institutes of Health funding for a special fellowship to develop a career in teaching and research. He focused on pediatric otolaryngology problems, specifically hearing loss in infants, a joint project with an audiologist Marion Downs.[19] This was in essence the first pediatric otolaryngology fellowship.

Sylvan Stool's professional otolaryngology career began at the Children's Hospital of Philadelphia in 1963 following his appointment there by surgeon-in-chief Dr. C. Everett Koop. Recognizing a growing national interest in pediatric otolaryngology, Stool and Marvin (Cub) Culbertson, Jr., a fellow pediatric otolaryngologist from Galveston, Texas, posted a notice in 1968 for an informal gathering of those interested in pediatric otolaryngology to be held notably at the American Academy of Pediatrics meeting in Las Vegas, Nevada.[1,18] Approximately 20 otolaryngologists and audiologists attended. This group reconvened in following years, expanding its membership to interested speech pathologists, pediatricians, and nurses as well. The group eventually formalized in 1973 as the interdisciplinary Society for Ear, Nose, and Throat Advances in Children (SENTAC). Robert Ruben served as the Society's first president and Sylvan Stool as its second president (Table I). SENTAC remains today a society in which membership is determined solely by interest and not by professional affiliation; as such it continues to be a forum for the successful interchange of information between different professions involved in pediatric otolaryngology care.[15]

Several years later in 1977, Sylvan Stool and Charles Bluestone, whom he had previously joined in 1975 at the Children's Hospital of Pittsburgh, organized a meeting of other otolaryngologists who, like themselves, had limited their practices to the care of infants and children (Table II). The goal of this Pediatric Otolaryngology Study Group was to establish a pediatric otolaryngology section within the AAP.[3,15,18] With the basic requirements of a minimum of 20 members who devoted at least 75% of their practice to pediatrics satisfied, the AAP Section on Otolaryngology and Bronchoesophagology was created, and Charles Bluestone was elected as the section's first chairman. Charles Bluestone would later state that the idea to create a pediatric otolaryngology section within the AAP was

TABLE I.
Presidents of the Society of Ear, Nose, and Throat Advances in Children

Robert J. Ruben, MD	1973–1975
Sylvan E. Stool, MD	1975–1976
David Mitchell, MD	1976–1977
Sanford Gerber, PhD	1977–1978
M.C. Culbertson, MD	1978–1979
Robert I. Kramer, MD	1979–1980
Robin T. Cotton, MD	1980–1981
Michael Seidenmann, PhD	1981–1982
Susan Gray, PhD	1982–1983
William P. Potsic, MD	1983–1984
Allan B. Seid, MD	1984–1985
Maurice I. Mendell, PhD	1985–1986
Steven D. Handler, MD	1986–1987
Robert J. Shprintzen, PhD	1987–1988
Joseph V. Puglise, MD	1988–1989
Kenneth M. Grundfast, MD	1989–1990
Dan F. Konkle, PhD	1990–1991
Phillip H. Kaleida, MD	1991–1992
Orval E. Brown, MD	1992–1993
Charles F. Koopman, MD	1993–1994
Charles M. Myer III, MD	1994–1995
Roger R. Marsh, PhD	1995–1996
William S. Gibson, MD	1996–1997
Sandra Davenport, MD	1997–1998
Jacob Friedberg, MD	1998–1999
Ralph F. Wetmore, MD	1999–2000
Sally Peterson-Falzone PhD	2000–2001
Ronald Deskin, MD	2001–2002
Craig S. Derkay, MD	2002–2003
Bruce R. Maddern, MD	2003–2004
Linda Miller Calandra, MSN, CRNP, CORL	2004–2005
Blake Papsin, MD	2005–2006
Seth M. Pransky, MD	2006–2007
Joan Arvedson, PhD	2007–2008
David Parsons, MD	2008–2009
Cynthia B. Soloft, MA, CCP-SLP	2009–2010

based on what the pediatric surgeons had done almost 30 years previously.[3] The AAP section successfully provided an educational venue between otolaryngologists and their pediatric colleagues that continues today (Table III).

Remarkably the Section on Surgery of the AAP remained the primary organization for pediatric surgery for over two decades. This is a testament to the historical openness of the AAP toward its surgical subspecialty colleagues. In 1965, Stephen Gans and C. Everett Koop founded the *Journal of Pediatric Surgery*, with Koop serving as its first editor; the *Journal of Pediatric Surgery* quickly became the official publication of the Surgical Section of the AAP.[20] The success of the Surgery Section and the increasing numbers of surgeons dedicating themselves to pediatric surgery did not go unnoticed by the American College of Surgeons. An Advisory Council for Pediatric Surgery was formed in 1969 within the ACS. Around this time, there was also talk of forming another organization for pediatric surgery separate from both the ACS and the AAP. Koop urged for a diplomatic approach so as not to offend the AAP, which had supported the pediatric surgeons to date. This worry was, however, unfounded as the AAP was fully supportive of the call for a separate organization. In 1970, the American Pediatric Surgical Association (APSA) was called to order with Robert Gross serving as president and Koop as president-elect. This was a watershed event as pediatric surgery now had it own organization, its own journal, a council within the ACS, and the Surgical Section in the AAP. Momentum was moving toward further independence.[4]

David Bloom, a contemporary pediatric urologist and historian, states that "controversy regarding the designation of pediatric urology as a distinct specialty is a curiosity after-the-fact."[8] Indeed, pediatric urology had already established an independent organization—the SPU— back in 1951, which was completely separate from the AUA. The pediatric urologists also had a successful section within the AAP. Attempts to incorporate the SPU as a section of the AUA received little support among pediatric urologists. The leadership of the SPU believed that if the AUA controlled the urologic subspecialty groups, the agenda of these groups would be no different from the agenda of the AUA itself. Moreover, by staying separate from the AUA, the SPU would be in a better position to petition the American Board of Urology for its own board subcertification. Although the relationship between the SPU and AUA improved in subsequent years, many pediatric urologists believe that

TABLE II.
Attendees of the 1977 Meeting in Pittsburgh Prior to the Formation of the Section on Otolaryngology and Bronchoesophagology of the American Academy of Pediatrics

Herbert G. Birck
Charles D. Bluestone
Robin T. Cotton
William S. Crysdale
Marvin C. Culbertson Jr.
Blair W. Fearon
Herman Felder
Jacob Friedberg
Donald B. Hawkins
Gerald B. Healy
David P. Mitchell
William P. Potsic
Timothy J. Reichert
Keith H. Riding
Robert J. Ruben
Melvin D. Schloss
Robert S. Shapiro
Sylvan E. Stool
Gabriel F. Tucker Jr.

TABLE III.
Chairs of the American Academy of Pediatrics Section on Otolaryngology–Head and Neck Surgery (Formerly Bronchoesophagology)

Charles D. Bluestone, MD, FAAP	1977–1979
Gerald B. Healy, MD, FAAP	1979–1981
Gabriel F. Tucker, MD, FAAP	1981–1983
Robert Ruben, MD, FAAP	1983–1985
Donald B. Hawkins, MD, FAAP	1985–1987
Allan B. Seid, MD, FAAP	1987–1989
William P. Postic, MD, FAAP	1989–1991
Kenneth M. Grundfast, MD, FAAP	1991–1993
Charles M. Myer, MD, FAAP	1993–1995
David E. Tunkel, MD, FAAP	1995–1998
Michael J. Cunningham, MD, FAAP	1998–2002
Andrew Hotaling, MD, FAAP	2002–2005
Bruce Maddern, MD, FAAP	2005–2007
David Darrow, MD, FAAP	2006–2007
Scott Schoem, MD, FAAP	2007–2011

the decision of the SPU to stay independent promoted its progress toward official recognition.[9]

Throughout the late 1970s and early 1980s, the Pediatric Otolaryngology Study Group continued to meet on an annual basis, typically in the spring separate from the fall AAP meeting; these meetings took place in Boston in 1978, Cincinnati in 1979, Philadelphia in 1980, New York City in 1981, Washington DC in 1982, Chicago in 1983. and Houston in 1984.[15] Although initially designed to foster camaraderie and facilitate problematic case discussion, the members of this group increasingly developed an interest in fostering a new academic organization. Similar discussions were also taking place within the AAP Section on Otolaryngology and Bronchoesophagology. The leadership of both groups elected to proceed in this fashion.

In 1985, 56 otolaryngologists from the United States and Canada met on the island of Bermuda to discuss creating an organization to help foster scientific interest in pediatric otolaryngology as well as to gather further respect and recognition from the American Academy of Otolaryngology–Head and Neck Surgery (Table IV).[15,21] Their meeting resulted in the founding of the American Society of Pediatric Otolaryngology (ASPO), with Seymour Cohen elected as the first president. Similar to the SPU, the pediatric otolaryngologists responsible for creating ASPO desired an independent organization. To ensure such, the initial annual meetings were purposely held separate from the Combined Otolaryngology Spring Meetings (COSM).[21] This remained the case until 1991 when the 6th Annual Meeting of ASPO was held in conjunction with COSM. The American Society of Pediatric Otolaryngology has evolved into the principal academic pediatric otolaryngologic society (Table V). The present membership of ASPO numbers 354 individuals, including 32 international and 13 emeritus members. In 2009 the annual ASPO meeting had 387 attendees. ASPO via the COSM and the ACS is the current primary source of continuing medical education in pediatric otolaryngology.

STANDARDIZATION OF TRAINING AND ACCREDITATION

The rise of pediatric surgery as a recognized subspecialty field necessitated more specific training of its surgeons. With significant foresight, H. William Clatworthy in 1966 organized the Committee on Postgraduate Training within the Surgical Section of the AAP to define and standardize training in pediatric surgery.[4] An issue at the time, familiar even now, was the fact that many surgical programs were strong in some areas and weak in others, but rarely satisfactory in all. Certain standards were additionally believed necessary for ancillary services, such as pathology and radiology. The duration of the fellowship programs was set at two years beyond the then requisite 4-year general surgery residency. The final issue was the accreditation of these fellowships. This task was initially given to the Surgical Section of the AAP. Thirteen of the 20 programs that initially applied for accreditation in 1967 to 1968 were approved; these included the larger established programs such as those in Boston, Philadelphia, and

TABLE IV.
Charter Members of the American Society of Pediatric Otolaryngology

Walter M. Belenky	Margaret A. Kenna
Charles D. Bluestone	Brent J. Lanier
Glenn D. Bratcher	Joel Levitt
Linda Brodsky	Jose A. Lima
Patrick Brookhouser	Rodney P. Lusk
Orval E. Browne	Robert McDonald
Francis I. Catlin	Trevor J.I. McGill
William D. Clark	Gregory J. Milmoe
Seymour R. Cohen	D.P. Mitchell
Robin T. Cotton	Harlan R. Muntz
William S. Crysdale	William P. Potsic
Marvin C. Culburtson Jr.	Timothy J. Reichert
Ronald W. Deskin	James S. Reilly
John D. Donaldson	Mark A. Richardson
Roland D. Eavey	Kenneth Riding
Herman Felder	Robert J. Ruben
Blair W. Fearon	Robert W. Seibert
Jacob Frieberg	Allan B. Seid
Ellen M. Friedman	Robert S. Shapiro
Kenneth A. Geller	George T. Simpson
Carol Gershon	Richard J.H. Smith
Lyon M. Greenberg	John S. Supance
Kenneth M. Grundfast	T.L. Tewfik
Steven D. Handler	Jerome W. Thompson
Donald Hawkins	Gabriel F. Tucker, Jr.
Gerald B. Healy	Ralph F. Wetmore
Lauren D. Holinger	Benjamin White
John K. Jones	Michael A. Williams

TABLE V.
Presidents of the American Society of Pediatric Otolaryngology

Seymour R. Cohen, MD	1985–1986
Francis I. Catlin, MD	1986–1987
Gerald B. Healy, MD	1987–1988
Robin T. Cotton, MD	1988–1989
Mark A. Richardson, MD	1989–1990
Charles D. Bluestone, MD	1990–1991
William P. Potsic, MD	1991–1992
Allan B. Seid, MD	1992–1993
Kenneth M. Grundfast, MD	1993–1994
Robert J. Ruben, MD	1994–1995
Rodney P. Lusk, MD	1995–1996
James S. Reilly, MD	1996–1997
Patrick E. Brookhouser, MD	1997–1998
Ellen M. Friedman, MD	1998–1999
Richard J.H. Smith, M.D	1999–2000
Charles M. Myer III, MD	2000–2001
Steven D. Gray, MD	2001–2002
Margaret A. Kenna, MD	2002–2003
George H. Zalzal, MD	2003–2004
Ralph F. Wetmore, MD	2004–2005
Craig S. Derkay, MD	2005–2006
Michael J. Cunningham, MD	2006–2007
Scott C. Manning, MD	2007–2008
Jerome W. Thompson, MD	2008–2009
Sukgi S. Choi, MD	2009–2010
Peter J. Koltai, MD	2010–2011

Chicago.[4] Currently there are 35 accredited fellowship programs in pediatric surgery. Since 1977, the Residency Review Committee (RRC) of the Accreditation Council for Graduate Medical Education (ACGME), at one time called the Liaison Committee for Graduate Medical Education, has been responsible for their accreditation.[22]

There had historically been some practice overlap between urology and general surgery. In the 1980s the American Board of Urology (ABU) sought to clarify the domains of urologic practice. Some members of the ABU proposed support of the development of subspecialties in areas such as pediatric urology as a means to draw a line in the sand in this respect.[9] This resulted in the creation of an Advisory Pediatric Urology Committee to the ABU made up largely of members of the SPU. In 1984, the SPU created fellowship guidelines outlining 2-year fellowships with 1 year of research with the goal of keeping pediatric urology academically oriented.[9] There were even provisions to allow pediatric surgeons the opportunity to receive fellowship training in pediatric urology. These fellowship guidelines were submitted to the members of both the SPU as well as the AAP Section on Urology and were subsequently approved by both groups.[9] The responsibility of accrediting these fellowships in pediatric urology was initially proposed to be done by a committee formed jointly by members of the SPU and the AAP Section on Urology. This proposal, however, was rejected by the AAP for fear of the legal consequences of such a responsibility. Taking a cue from the pediatric surgeons, the ACGME was alternatively proposed to be the accrediting party. In 1990, the urology RRC of the ACGME accepted this accreditation responsibility with the proviso that it would accredit 1-year fellowships. Most pediatric urology program directors at the time continued to insist on 2-year fellowships with both a clinical and a research year. The ABU subsequently officially adopted this 2-year format, with the clinical year being considered the ACGME-governed year; the current 23 accredited pediatric urology fellowship programs remain faithful to this 2-year format.[22]

Charles Bluestone and Sylvan Stool created the first formal pediatric otolaryngology fellowship at the Children's Hospital of Pittsburgh from 1975 to 1976.[3] Robin Cotton at the Cincinnati Children's Hospital Medical Center, and Gerald Healy and Trevor McGill at the Children's Hospital Boston, subsequently followed with fellowship positions at their respective institutions within the next two years. By 1995, over 20 pediatric otolaryngology fellowships were available in North America, many of the newer fellowship directors having graduated from the Pittsburgh, Cincinnati, and Boston fellowship programs. As such, a continuum of training from two of the forefathers of pediatric otolaryngology—Charles Ferguson and Blair Fearon—had been established (see the online supplement, The Genealogy of Pediatric Otolaryngology in North America).

The year 1995 is important as it is the year in which the otolaryngology residency review committee of the ACGME developed criteria for accrediting pediatric fellowships. These guidelines first appeared in the American Medical Association's Graduate Medical Education Directory from 1996 to 1997. The initial guidelines called for 2-year fellowships with a minimum of 6 months of research; there were additional institutional, faculty, and ancillary services requirements. Four fellowship programs—the Cincinnati Children's Hospital Medical Center/University of Cincinnati College of Medicine Program, the Children's Hospital of Pittsburgh/University of Pittsburgh Medical Center Program, the University of Iowa Hospitals and Clinics Program, and the Texas Children's Hospital/Baylor College of Medicine Program—were initially accredited in 1998. Over the subsequent 8 years only one additional pediatric otolaryngology fellowship—the Children's Hospital of Philadelphia/University of Pennsylvania Medical School Program—sought and achieved ACGME accreditation. Financial constraints and the 2-year requirement appeared to be the principle impediments preventing more programs from applying for accreditation. This failure of acceptance of a uniform fellowship accreditation process for pediatric otolaryngology stands in stark contrast to the pediatric surgery and pediatric urology experience.

The need for readdressing the accreditation issue was recognized by both ASPO and the otolaryngology RRC. Approved in 2005 and effective in 2006, changes were made in the ACGME pediatric otolaryngology fellowship requirements, the most significant being a reduction in the length of the fellowship programs to 1

year and the elimination of the research requirement.[23] Coincident with these ACGME fellowship program requirement changes, two retreats were organized for all pediatric fellowship directors by the ASPO leadership in 2006 and 2007 to further discuss this issue. The end result of these retreats was ASPO Board approval of a 2012 timeline for application for uniform ACGME accreditation by all pediatric otolaryngology fellowship programs, and consideration of ASPO membership being eventually dependent on graduation from an accredited fellowship.[24] Currently there are eight ACGME-accredited pediatric otolaryngology fellowships—the Children's National Medical Center/George Washington University Program, the Denver Children's Hospital/University of Colorado Program, and the Massachusetts Eye and Ear Infirmary/Harvard Medical School Program—having joined the list. Several additional programs are ideally soon to follow.

OFFICIAL RECOGNITION AND CERTIFICATION

More formal recognition of the young field of pediatric surgery was first sought by C. Everett Koop in 1956 from the American Board of Surgery (ABS).[20] Koop writes in his memoirs that his proposal was not well received, particularly by the ABU, which perhaps felt threatened by potential practice overlap with an officially sanctioned group of pediatric surgeons. The suggestion was made that perhaps pediatric surgery could receive some form of certification through the Surgical Section of the AAP. Koop believed this was unacceptable as he felt pediatric surgery required recognition from its surgical peers. Koop made a second overture to the ABS in 1967, which was also rejected. A third overture to the ABS by Koop in 1972 was finally approved with the Certificate of Competence in Pediatric Surgery to be granted through a written examination.[20] Bradley Rodgers writes, "…recognition of the specialty of pediatric surgery, as distinct from general surgery, by the American Board of Surgery was the single most defining event in the establishment of our specialty."[4] In 2001, a specific Pediatric Surgery Board within the American Board of Surgery was created. This Pediatric Surgery Board is currently involved not only in certification but also in the accreditation of pediatric surgery fellowships in tandem with the surgery RRC of the ACGME.[5]

Recognition via official board certification of pediatric urology had always been an interest of the pediatric urologists. The ABU made an early attempt to appease the growing number of pediatric urologists in 1977 with a proposed change in the wording of the ABU certificate to Adult and Pediatric Urology.[9] This proposal was rejected by members of both the SPU and the AAP Section on Urology. Despite this rejection, the phrase Adult and Pediatric Urology was approved by the ABU and appeared on the ABU certificate until it was eventually changed back to the Specialty of Urology in 1984. The move toward subspecialty certification in pediatric urology remained hotly contested by the ABU despite the development of ACGME-accredited pediatric urology fellowships. Frank Hinman, Jr., a prominent San Francisco pediatric urologist and one of the founders of the SPU, proposed in 1985 a Certificate of Special Training upon completion of an accredited fellowship. The ABU viewed such a certificate as fragmenting to the overall specialty of urology and potentially economically crippling for senior pediatric urologists without fellowship training. A former president of the ABU, Jay Gillenwater later wrote in regard to pediatric urology, "I believe a time will come for subspecialization certification, but not soon."[9] The time eventually came as subspecialty certification in pediatric urology, formally supported by the ABU, was officially approved by the American Board of Medical Specialties in 2007.[25] The first certification examination was given by the ABU in 2008.

Formal certification in pediatric otolaryngology has been sought with much less fervor than that observed in either pediatric surgery or pediatric urology. In the late 1980s through early 1990s, the leadership of ASPO petitioned the American Board of Otolaryngology (ABOto) for certification, and in 1992 the ABOto received approval from the American Board of Medical Specialties to create a Certificate of Added Qualification (CAQ) in Pediatric Otolaryngology. The granting of such a CAQ was to require a written and oral examination as well as the completion of fellowship training meeting certain standards.[26] The potential issuing of such a certificate was controversial on many fronts. Even though the American Board of Medical Specialties continues to list pediatric otolaryngology as an approved subspecialty, the American Board of Otolaryngology has never offered such subspecialty certification, nor has such been actively sought by ASPO. In contrast, the American Board of Otolaryngology does offer subspecialty certification in neurotology, and more recently in sleep medicine, due in part to existent accredited fellowship training venues and formalized examination processes for these two otolaryngology subspecialty fields.[27] Similar to accreditation, the issue of certification in pediatric otolaryngology has been recognized by ASPO members, and debate currently continues regarding support for seeking its future implementation.

CONCLUSION

The development and maturation of the pediatric surgical subspecialties has been a process that has spanned several decades and continues today. Pediatric surgery has been the forerunner and currently holds the most established position. In fact, the organizational structure of pediatric surgery can be considered the model to which the other pediatric surgical subspecialties might compare themselves. Pediatric urology has done well in this respect having historically created two active societies, established fellowships accredited by the ACGME, and recently added the element of certification based on uniform training and standardized examination completion by its practitioners. Pediatric otolaryngology, despite its many accomplishments, lags behind its general and urological surgical brethren from both an accreditation and certification standpoint. Its historical foundation has been firmly laid down and its

clinical role in the care of children soundly established. There remains the need for an additional level of organization within the field of pediatric otolaryngology to ensure the uniform training of future pediatric otolaryngologists and to unmistakably define the subspecialty relative to its surgical peers.

Acknowledgments

The authors with to acknowledge the following: in otolaryngology Francis I. Catlin, MD and Robert J. Ruben, M.D; in pediatric surgery Richard Azizkhan, MD; in urology H. Gil Rushton, MD and Michael Ritchey, MD.

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