International Symposium 1 AAOHNS Joint Program: Dementia and ENT Disorders

Contribution of Hearing Loss to the Incidence of Dementia in Japan

Koichiro Wasano[1)2)]
Department of Otolaryngology, Head and Neck Surgery, Tokai University School of Medicine[1)]
Center for sensory impairments, Tokai University Hospital[2)]

In 2017, Livingstone et al. reported in the Lancet Commission Report that among the modifiable risk factors for dementia, hearing loss in midlife and later years had the greatest potential contribution to dementia prevention. The estimated contribution of hearing loss has changed from 9% in the 2017 report to 8% in the 2020 report and 7% in the 2024 report; however, it remains the most significant factor.

Following these reports and the World Health Assembly resolution on prevention of deafness and hearing loss, global efforts to promote appropriate diagnosis and intervention for hearing loss have intensified. In Japan, awareness campaigns for the general public, collaborative projects with physicians including other medical fields and speech-language therapysts, and advocacy efforts targeting the government have also become more active.

Since the prevalence of risk factors for dementia, including hearing loss, varies significantly across countries, their respective contributions to dementia onset are also expected to differ. Therefore, calculating the contribution of hearing loss in each country is essential for policymaking and public health initiatives.

In this study, we investigated the contribution of hearing loss to dementia incidence in Japan through a collaborative research project with the Danish Dementia Research Centre at the University of Copenhagen and the Kingdom of Denmark.

Short Bio

2025. 4– Professor, Chairperson, Department of Otolaryngology-Head and Neck Surgery, Tokai University School of Medicine, Isehara, Japan
2022. 4–2025.3 Associate professor, Department of Otolaryngology-Head and Neck Surgery, Tokai University School of Medicine, Isehara, Japan
2018. 9–2022.3 Chief, Laboratory of auditory disorders, National Institute of Sensory Organs, National Hospital Organization Tokyo Medical Center, Tokyo, Japan.
2016. 9–2018.8 Postdoctoral fellow, Feinberg Medical School, Northwestern University, Chicago, IL, USA.
2012. 4–2016.8 Director, Department of Otolaryngology, Head and Neck Surgery. Japanese Red Cross Shizuoka Hospital, Shizuoka, Japan.
2010. 4–2012.3 Assistant professor, Department of Otolaryngology-Head and Neck Surgery, Keio University School of Medicine, Tokyo, Japan.
2004. 7–2010.3 Medical Staff, Affiliated hospitals of Keio University, Japan.
2003–2004 Resident, Keio University School of Medicine, Tokyo, Japan.

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Conductive Hearing Loss is Associated with Dementia and Depression

Justin Golub[1)2)3)]
Department of Otolaryngology-Head and Neck Surgery, Columbia University Vagelos College of Physicians and Surgeons[1)], NewYork-Presbyterian/Columbia University Irving Medical Center, USA

Sensorineural hearing loss (SNHL) has been associated with dementia as well as depression. Because SNHL has a neural component, it is challenging to exclude the possibility of reverse causation in which case dementia causes SNHL. Conductive hearing loss (CHL), a purely peripheral problem, would not have this challenge. We study the association between CHL and both dementia and depression in a large United States cohort. The study dataset was the United States National Institutes of Health (NIH) All of Us Research Program, which includes electronic health record data of voluntary participants. We performed a cross-sectional analysis. Participants were 18 years or older (n＝399, 927). The main outcome measures were dementia defined by ICD-10 codes (F01, F03, G30-32) and major depressive disorder (ICD-10 F32-33). The exposure was CHL defined by ICD-10 codes (H90. 0-90. 2). The odds of each outcome in those with and without CHL were assessed with multivariable regression, controlling for potential confounders (age, sex, education). The mean age was 56 years (17 SD). 242, 911 (61%) participants were female. The cohort included 1, 274 (0. 3%) individuals with CHL and 398, 653 (99. 7%) without CHL. After controlling for covariates, the odds of dementia were 2. 7 times (95% CI 2. 1-3. 4; p＜0. 0001) higher for those with CHL compared to those without CHL. Controlling for covariates, the odds of major depressive disorder were 3. 6 times (95% CI 3. 2-4. 0; p＜0. 0001) higher for those with CHL compared to those without. In conclusion, CHL was strongly associated with dementia as well as depression. This supports CHL as a risk factor for cognitive and mood disorders, and the theory that any sensory deprivation to the brain can be detrimental. As it is implausible for dementia to cause CHL, a purely peripheral process, the possibility of reverse causation as an explanation is eliminated.

Short Bio

2002-2007, Medical School, Emory University, Atlanta, GA, USA
2007-2013, Residency, University of Washington, Seattle, WA, USA
2013-2015, Fellowship, Neurotology, University of Cincinnati, Cinncinnati, OH, USA
2015-2020, Assistant Professor, Columbia University
2020-present, Associate Professor, Columbia University

Justin S. Golub, MD, MS is an Associate Professor of Otolaryngology-Head and Neck Surgery and Vice Chair of Faculty Development at the Columbia University Vagelos College of Physicians and Surgeons and NewYork-Presbyterian/Columbia University Irving Medical Center. He attended Emory University School of Medicine, residency in otolaryngology-head and neck surgery at the University of Washington in Seattle, and fellowship in neurotology at the University of Cincinnati. He obtained a masters in biostatistics at the Columbia University Mailman School of Public Health. He is the author of more than a hundred peer-reviewed research publications and has co-edited four books, including a best-seller among trainees. Dr. Golub has an NIH-funded research program investigating the brain effects of age-related hearing loss.

Obstructive Sleep Apnea and Dementia: A Bidirectional Relationship

Jolie Chang
Department of Otolaryngology, Head and Neck Surgery University of California,
San Francisco, USA

There is emerging pathophysiological and clinical evidence linking sleep disordered breathing and sleep fragmentation to Alzheimer's disease progression. Sleep disruptions are associated with amyloid-beta accumulation, inflammatory changes in the brain and oxidative stress. Obstructive sleep apnea is linked to impaired glymphatic clearance of neurotoxins and vascular changes in the blood brain barrier. This lecture will review the updated evidence on the relationship between obstructive sleep apnea, sleep fragmentation, and the progression of Alzheimer's disease. The talk will review clinical evidence for bidirectional influences between sleep quality and cognitive decline along with new biomarkers for disease monitoring. We will review the evidence for OSA treatment and impact on cognitive outcomes.

Educational objectives include:
-Describe the relationship between sleep disordered breathing, sleep fragmentation and progression of Alzheimer's disease.

-Demonstrate the pathophysiology of dementia and the role of obstructive sleep apnea in amyloid plaque formation.

-Describe the clinical relationships between obstructive sleep apnea and mild cognitive impairment and dementia.

-Review treatment options for obstructive sleep apnea including positive airway pressure therapy and alternative medical and surgical therapies.

-Discuss the data and challenges of study design to understand how OSA treatment may prevent cognitive decline and dementia.

Short Bio

Jolie L. Chang, MD, is a Professor of Otolaryngology, Head and Neck Surgery and Chief of the Division of Sleep Surgery and General Otolaryngology at the University of California, San Francisco. She received her bachelor's and master's degrees in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology in Cambridge. She then completed her medical degree and residency training at the University of California, San Francisco.

Dr. Chang specializes in sleep apnea surgery and minimally invasive approaches for salivary gland surgery including sialendoscopy. She also has clinical expertise in ultrasonography for head and neck disorders. She is an associate editor for the sleep section of the Laryngoscope journal. She is dedicated to medical education and is the Director of Resident Research for the Department of Otolaryngology- Head and Neck Surgery. Dr. Chang performs research in health care decision making and surgical outcomes for sleep apnea therapies. She was co-editor and primary author on the International Consensus Statement for Obstructive Sleep Apnea.

Education:
1997-2002, BS/MEng, EECS, Massachusetts Institute of Technology
2002-2007, Medical School, University of California San Francisco
2007-2012, Residency, UCSF
2012-2018, Assistant Professor
2018-2024, Associate Professor
2024-present, Professor, UCSF

128—434 2025

International Symposium 2 CEORLHNS Joint Program: Treatment for Vocal Fold Scar–Recent Update from Bench to Bedside–

The bedside; surgical treatment options for vocal fold scar

Emke van den Broek
UMC Utrecht, The Netherlands

The management of patients with vocal fold scar (VFS) can vary from no treatment to speech language therapy (SLT) and surgical procedures often in combination with each other. Surgical treatment can be divided in (1) medialization procedures to improve glottic closure (2) microphonosurgical procedures to improve mucosal wave by removing/replacing disrupted tissue in case of sulcus and (3) surgery using techniques from regenerative medicine. These different options can also be used in combination.

In this presentation different surgical techniques will be described; outcomes will be discussed and, if possible, compared; and future directions in this field will be discussed.

Short Bio

Emke van den Broek studied Medicine at Utrecht University in the Netherlands. From 2014 to 2015 she did a fellowship laryngology in Auckland, New Zealand. After returning to the Netherlands she worked as laryngologist, at the ENT department in LUMC and started her PhD research on vocal fold atrophy and sulcus vocalis, which she successfully finished in 2024. Since 2018 she works as a laryngologist at the department of otorhinolaryngology, head- and neck surgery in UMC Utrecht. Besides her clinical work as laryngologist, she is chairman of the laryngological workgroup of the Dutch scientific ENT Association, attributing to improve ENT care in the Netherlands.

Regenerative Medicine of the Larynx. Where are we Today?

Markus Gugatschka
Medical University of Graz, Austria

Laryngeal tissue engineering holds great potential for treating voice disorders and airway defects. While challenges remain, advances in *biomaterials and hydrogels, cell based therapies*, and *3D bio-printing and bio-fabrication and growth factors* are steadily bringing regenerative solutions closer to clinical application. This presentation will provide a brief outline of the underlying patho-mechanisms. Furthermore a historical review and an overview of the current status in the above-mentioned areas, as well as a discussion of the most promising strategies.

Short Bio

Prof. Markus Gugatschka MD is an Austrian physician specializing in phoniatrics and otolaryngology. Throughout his career, he has engaged in research stays in Berlin, Kyoto (supervision: Prof. S. Hirano), and Stockholm (Karolinska institute). In April 2020, he was appointed as a professor for "Otorhinolaryngology with special consideration of Phoniatrics" at the Medical University of Graz, Austria. Dr. Gugatschka also leads the research unit "Laryngeal Tracheal Tissue Engineering Graz (LTTEG)," focusing on innovative approaches in laryngeal and tracheal tissue engineering.

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Role of oxidative stress for vocal fold wound healing and scarring

Shigeru Hirano
Department of Otolaryngology Head & Neck Surgery, Kyoto Prefectural University of Medicine

Vocal fold is a vibratory property, and once it loses the function, voice cannot be produced normally leading to dysphonia. Vocal fold scar is the sequel of vocal fold injury or inflammation, and causes reduced vibratory function, and insufficient glottic closure permanently. It is essential to avoid scarring of the vocal fold to maintain voice. Wound healing mechanism has 2 destinies: regeneration or scarring. There are too many elements that affect the fate of wound healing including cells, cytokines, growth factors, extracellular matrix, etc.

Oxidative stress influences many organs and tissues, and mainly causes negative events such as aging, cancer, adult diseases, etc. Reactive oxygen species (ROS) causes oxidative stress during wound healing, and excessive ROS leads to poor wound healing. We have revealed that ROS is significantly produced during the early phase of vocal fold wound healing using rat models, which results in long-term scarring of the vocal fold. Anti-oxidant has proven to prevent ROS and scarring effects of the vocal fold. It is suggested that it should be important to prevent oxidative stress during wound healing period of the vocal fold.

The control of oxidative stress is also important for maintenance of voice for vocal abusers including singers and other professional voice users. Our preliminary data show that anti-oxidant therapy significantly reduces singing voice handicap index in opera singers, and indicate the protective effects of anti-oxidant for preserving the vocal fold.

Short Bio

Prof Hirano graduated from Faculty of Medicine, Kyoto University in 1990. After residency, he worked as a post doc in UCLA and Wisconsin University in the US, and produced many achievements on tissue engineering and regenerative medicine of the larynx. He became the Professor and chair of Department of Otolaryngology Head and Neck Surgery at Kyoto Prefectural University of Medicine in 2016. He keeps working on the translational research on the vocal fold wound healing, regeneration, and anti-aging.

1990　京都大学医学部卒業
1998　京都大学大学院医学研究科修了
1999　UCLA 耳鼻咽喉科・頭頸部外科研究員
2001　ウイスコンシン大学耳鼻咽喉科・頭頸部外科研究員
2003　国立京都病院気管食道科医長
2005　京都大学耳鼻咽喉科・頭頸部外科講師
2015　京都大学耳鼻咽喉科・頭頸部外科准教授
2016　京都府立医科大学耳鼻咽喉科・頭頸部外科教授

International Symposium 3 Head and Neck International Symposium: Korea-Japan Joint Session

Sentinel Lymph Node Biopsy in Oral Squamous Cell Carcinoma

Man Ki Chung
Sungkyunkwan University School of Medicine Samsung Medical Center, Korea

Neck node metastasis of head and neck cancer is the most important prognostic factor, which could affect the rates of survival and recurrence. Therefore, accurate diagnosis of metastatic neck lymph nodes is essential for treatment planning and prognosis assessment. To date, various imaging modalities including ultrasonography (US), computed tomography (CT), magnetic resonance imaging (MRI), and, most recently, positron emission tomography (PET)-CT have failed to show sufficient accuracy to detect occult metastasis. As a result, the concept of elective neck dissection (END) has become the mainstay of treatment for clinically negative neck node (cN0) head and neck squamous cell carcinoma (HNSCC), despite the knowledge that up to 80% of patients will not benefit from END, which is why some clinicians support a wait-and-see policy.

Sentinel lymph node biopsy (SLNB) is gaining ground to become an alternative to elective neck dissection with the ability of more accurate neck staging in cN0 HNSCC. Validation studies of SLNB in cN0 HNSCC reported a high accuracy rate with simultaneous neck dissection and/or short-term follow-up as reference standard. A recent meta-analysis of 26 studies reported a sensitivity of 95% and negative predictive value of 96% for SLNB in HNSCCC. In the few long-term follow-up studies reporting the outcomes of SLNB application trials in which neck dissection was performed only for positive SLNs, excellent accuracy and oncological results were reported.

In this session, up to date development as well as oncologic safety and outcomes of SLNB will be addressed.

EDUCATION:

1992-1998	Bachelor of Medicine	Seoul National University
2005-2006	Master of Medicine (Otorhinolayngology)	Sungkyunkwan University
2008-2012	PhD (Otorhinolaryngology)	Sungkyunkwan University

POSTGRADUATE TRAINING:

Residencies

2002-2006	Otorhinolayngology-Head and Neck Surgery	Samsung Medical Center

Fellowships

Dates	*Field of Research*	*Institution*
2006-2008	Head and Neck Surgery	Samsung Medical Center

2020-present

Professor
Sungkyunkwan university School of medicine
Department of Otorhinolaryngology-Head and Neck Surgery
Director of Head and neck cancer center in Samsung comprehensive cancer hospital (since Apr 2023)

128—438 2025

3D Printing in Head and Neck Cancer Surgery-Development of Oncologic Safety and Functional Outcomes

Nayeon Choi
Department of Otorhinolaryngology-Head and Neck Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea

Three-dimensional (3D) printing has emerged as a transformative tool in head and neck cancer surgery, enhancing precision, personalization, and patient outcomes. By integrating virtual surgical planning (VSP) and patient-specific 3D-printed models, this technology bridges the gap between conventional surgical techniques and modern digital solutions.

This lecture aims to explore the applications of 3D printing in head and neck oncologic surgery, comparing its efficacy against traditional approaches, particularly in maxillectomy, mandibulectomy, and complex reconstructive procedures.

A review of recent advances highlights the role of 3D printing in preoperative planning, intraoperative navigation, and postoperative reconstruction. Data from comparative studies on 3D printing-guided versus conventional surgical approaches demonstrate improvements in resection accuracy, reduced operative time, and superior functional and aesthetic outcomes.

Evidence suggests that 3D-printed patient-specific surgical guides contribute to higher rates of negative resection margins (81.3% vs. 76.9%) and improved local recurrence-free survival (87.5% vs. 58.7%) in maxillectomy procedures. Furthermore, the integration of 3D-printed guidance has been shown to enhance anatomical restoration, reduce surgical complexity, and improve long-term patient quality of life.

3D printing is revolutionizing head and neck cancer surgery by offering unparalleled surgical precision and individualized treatment strategies. While challenges such as cost, regulatory approval, and material biocompatibility remain, the potential benefits of this technology underscore its growing role in the future of oncologic surgery. Further large-scale studies are warranted to validate its oncologic and functional advantages.

Education
- 2005-2011 Chungbuk National University, College of Medicine, M.D.
- 2014-2017 Sungkyunkwan University, College of Medicine, Master, Medicine
- 2017- Sungkyunkwan University, College of Medicine, Ph.D., Medicine

Postgraduate Training
- 2011. 3-2012. 2 Intern, Samsung Seoul Hospital
- 2012. 3-2016. 2 Resident, Department of Otorhinolaryngology-Head and Neck Surgery, Samsung Seoul Hospital, Seoul, Korea Resident
- 2016. 3-2017. 2 Fellow, Department of Otorhinolaryngology-Head and Neck Surgery, Samsung Seoul Hospital, Seoul, Korea Resident
- 2017. 5-2020. 5 Army surgeon, Department of Otorhinolaryngology-Head and Neck Surgery, The Armed Forces Capital Hospital, Republic of Korea
- 2020. 5-2021. 2 Clinical assistant professor, Department of Otorhinolaryngology-Head and Neck Surgery, Jeju National University, Jeju National University Hospital, Jeju, Korea
- 2021. 3-2022. 2 Fellow, Department of Otorhinolaryngology-Head and Neck Surgery, Samsung Seoul Hospital, Seoul, Korea
- 2022. 3-2023. 2 Clinical assistant professor, Department of Otorhinolaryngology-Head and Neck Surgery, Samsung Seoul Hospital, Seoul, Korea
- 2024. 2- Assistant professor, Department of Otorhinolaryngology-Head and Neck Surgery, Samsung Seoul Hospital, Seoul, Korea

Licensure & Certification
- 2011 Licence in Medicine (No. 107862)
- 2016 Korean National Board of Otolaryngologist (No. 4181)

Molecular Targeted Therapy in Salivary Gland Cancers

Satoshi Kano
Department of Otolaryngology-Head and Neck Surgery, Faculty of Medicine and Graduate School of Medicine, Hokkaido University, Japan

The rarity and varied pathology of salivary gland cancers have prevented the development of drug therapies targeting these cancers. However, in recent years, the discovery of fusion genes, gene amplification, and genetic mutations has led to dramatic advances in drug therapy for salivary gland cancer.

Human epidermal growth factor receptor type 2 (HER2) and androgen receptor (AR) have been identified as driver genes in salivary duct carcinoma, carcinoma ex pleomorphic adenoma and adenocarcinoma NOS. Anti-HER2 therapy is developed in breast cancer and anti-AR therapy is developed in prostate cancer, and various therapeutic agents are used as their standard treatment. Several clinical trials have been conducted for salivary gland cancer using their established treatment regimens for other cancers and have shown high efficacy.

The NTRK fusion gene is expressed in the majority of secretory carcinoma and has shown high response rates in clinical trials with TRK inhibitors.

In addition, various other molecular targeted therapies, including tyrosine kinase inhibitors, immune checkpoint inhibitors, BRAF inhibitors, and RET inhibitors, have been used against salivary gland cancer.

In this presentation, we will report on clinical trials of molecularly targeted therapies for salivary gland cancer and describe the promising future therapies.

Short Bio

Education
1993-1999 M.D., Hokkaido University Graduate School of Medicine
2005-2009 Ph.D., Faculty of Medicine and Graduate School of Medicine, Hokkaido University

Employment
2009-2014 Assistant Professor, Center for Advancement of Medical Education, Faculty of Medicine and Graduate School of Medicine, Hokkaido University
2014-2018 Assistant Professor, Department of Otolaryngology, Hokkaido University Hospital
2018-2024 Senior Lecturer, Department of Otolaryngology-Head & Neck Surgery, Hokkaido University Hospital
2025-present Associate Professor, Department of Otolaryngology-Head & Neck Surgery, Faculty of Medicine and Graduate School of Medicine, Hokkaido University

International Symposium 4　Rhinology International Symposium

Update on the use of biologic for CRSwNP

Joseph Han
Department of Otolaryngology & Head and Neck Surgery, Old Dominion University

Chronic rhinosinusitis with nasal polyps (CRSwNP), which is a chronic disease, presents a challenge for clinicians. Recent advancements have been developed to treat recalcitrant CRSwNP. However distinguishing CRS by merely the presence of nasal polyps do not allow for high efficacy. Therefore understanding endotypes, distinct subgroups defined by underlying molecular and immunological mechanisms, has allowed for development and use of monoclonal antibodies (MAB) targeting specific inflammatory cytokines. These MAB are also known as biologics.

Understanding these endotypes holds the promise to targetted therapeutic approaches, particularly within the realm of biologic agents. CRSwNP, increasingly recognized as a Type 2 inflammatory condition, significantly impacts patients' quality of life. However, optimal treatment strategies remain an ongoing area of investigation. Clinicians are actively determining which biomarkers can reliably predict treatment success. Endotypes represent a departure from the one-size-fits-all approach. As clinician scientist delve into cytokine profiles, inflammatory cells, and epigenetics to define endotypes, we hope to provide long lasting control of CRSwNP such as remission and possibly into cure of CRSwNP. Understanding endotypes empowers us to move beyond generic therapies. Precision or better yet, targeted medicine becomes feasible. Tailoring treatments based on endotype-specific characteristics promise improved patient outcomes.

While some patients achieve disease control with complete FESS followed by medical therapy, such as topical steroids. Others find this approach insufficient for control of CRSwNP. Often endoscopic sinus surgery and medical therapy alone fail to manage the disease burden, necessitating multiple additional surgeries. The emergence of FDA-approved biologics for nasal polyps represents a significant advancement. However not all biologics have similar efficacy. CRSwNP endotype may affect the efficacy of the biologic. Also there are post market studies exploring the option of combining biologic therapy with surgical interventions such as sinus surgery. Biomarkers and patient characteristics guide therapy decisions, potentially minimizing the need for further surgery and reducing the use of systemic corticosteroid and antibiotic. The evolving landscape of CRSwNP treatment involves a balance between surgery and medical therapy including biologics. By leveraging biomarkers and evidence-based guidelines, we aim to tailor treatments for individual patients. Excitingly, these discussions contribute to better outcomes for those affected by nasal polyposis.

Short Bio

Joseph K Han is a Professor in the Department of OtoHNS at Old Dominion University (Eastern Virginia Medical School). He is the Vice Chair and was the Chief for the Division of Rhinology & Endoscopic Sinus and Skull Base Surgery. He is the Chief for the Division of Allergy. Dr. Han was the President for the American Rhinologic Society, the Virginia Society of Otolaryngology, Chair of the Rhinology and Paranasal Sinus Committee of AAOHNS, and Chair for the Rhinitis, Rhinosinusitis, and Ocular Allergy Committee for AAAAI. Dr Han has over 185 scientific publications, over 307 national and international scientific presentations, and over 214 guest lectureships. Dr. Han has been awarded over 70 funded clinical studies and research grants, including NIH funding. His thesis was on Subclassification of Chronic Rhinosinusitis, which is the endotyping and phenotyping CRS. Recently he has been spearheading the use of biologic and nanobodies for the treatment of CRSwNP.

History of Eosinophilic Rhinosinusitis in Japan

Shin-ichi Haruna
Department of Otorhinolaryngology-Head and Neck Surgery, Dokkyo Medical University, Japan

In the 1980s, the introduction of ESS in chronic sinusitis surgery enabled more precise surgery, and with the addition of macrolide therapy, postoperative results improved dramatically. However, even with similar treatment, there were cases of poor postoperative results, and it was pointed out that many patients had sinusitis complicated by asthma. Eosinophilic sinusitis (eCRS) was proposed in 2001 based on the early onset of olfactory dysfunction, a stronger cribriform sinus shadow than the maxillary sinus shadow on CT, and a high blood eosinophil count. A nationwide JESREC Study was conducted to develop diagnostic criteria for eosinophilic sinusitis, and at the same time, severity of the disease was classified and a uniform standard was developed.

In terms of treatment, ESS was preceded by nasal steroids in patients with moderate disease or higher, and oral steroids were effective in cases of flare-ups. However, due to problems with side effects, the treatment consisted of repeated short-term pulse therapy. However, dipulimab in 2020 and mepolizumab in 2024 were included in the insurance plan and became a substitute for oral steroids in poor postoperative cases.

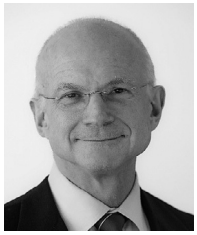
Currently, eosinophilic sinusitis proposed in Japan was considered refractory sinusitis, but diagnostic criteria and treatment guidelines have been proposed, and it is now certified worldwide.

Short Bio

1985～2006, Jikei Medical university
2006～2024, Prof and Chairman of Dokkyo Medical University
2024～, Emeritus Prof of Dokkyo Medical University
2019～2025, President of Japan Rhinologic Society

International Symposium 5 ASPIRE: Exploration of personal medical strategies based on the pathogenetic mechanisms of chronic rhinosinusitis in Japanese and US patient

CRSwNP in America



Robert C. Kern
Otolaryngology-Head and Neck Surgery, Medicine-Allergy-Immunology, Northwestern University, Feinberg School of Medicine, USA

Chronic rhinosinusitis (CRS) is a heterogeneous syndrome that typically presents in the 5th decade of life. In the United States it affects approximately 15,000,000 patients, with 3 million expressing the nasal polyp phenotype (CRSwNP). Progress in understanding CRS pathogenesis has permitted the division of cases into putative molecular pathways or endotypes, with the T2 subset expressed in the overwhelming majority of CRSwNP. The T2 endotype is characterized by the sinonasal tissue expression of high levels of TSLP, IL-4, IL-13 and IL-5 as well as the presence of characteristic cell types including Th2, ILC2, eosinophils and mast cells. T2 patients exhibit resistance to standard treatment, including polyp recurrence despite sinus surgery and post-operative topical corticosteroids. Concurrent advances in pharmacotherapeutics however, have permitted the targeting of specific molecules present in the T2 cascade with improved disease control. Nevertheless, challenges remain both from the standpoint of disease resistance and cost. This presentation will briefly review the current pathophysiology of CRS in the US, including advances in endotyping and classification systems. In light of these developments, the current CRS treatment pathways in the US will be reviewed as well as opportunities for improvement in the near future.

Short Bio

Robert C. Kern, MD was appointed in July of 2006 as Chairman of the Department of Otolaryngology-Head and Neck Surgery at Feinberg School of Medicine. Dr. Kern joined the Northwestern University faculty nearly two decades ago following a residency at Wayne State University and a two-year NIH research training fellowship. His undergraduate degree is from Georgetown University and his medical degree is from Jefferson Medical College in Philadelphia, Pennsylvania. Dr. Kern's primary clinical interests are chronic rhinosinusitis, nasal polyposis, benign and malignant sinonasal tumors and the transnasal approach for cranial base tumors. He is the clinical PI of an NIH funded Program Project Grant on Chronic Rhinosinusitis.

Endotypes of chronic rhinosinusitis in Korean patients: Distinct from Western patients

Dong-Young Kim
Department of Otorhinolaryngology-Head and Neck Surgery, Seoul National University College of Medicine, Korea

Chronic rhinosinusitis (CRS) is an inflammatory disease of the sinonasal mucosa with duration of at least 12 weeks; its prevalence is 12% in the United States, 10.9% in Europe, and 7%-8.4% in Korea. CRS is a vastly heterogeneous disorder with a wide spectrum of inflammatory patterns. Moreover, the immunological features of CRS vary across different geographic locations and racial backgrounds, further complicating the heterogeneity of CRS. Identifying distinct endotypes based on immunologic profiles has emerged as a promising approach to enhancing understanding of CRS pathophysiology and developing more effective treatment strategies. This approach aligns with the principles of precision medicine, enabling clinicians to customize treatment approaches based on individual patients' immunologic profiles and clinical parameters, particularly in the era of biologics.

Studies in Caucasian patients have demonstrated that CRS with nasal polyps (CRSwNP) is characterized by eosinophilic and type 2 (T2) inflammation, with the expression of interleukin (IL)-4, IL-5, IL-13, and immunoglobulin E (IgE), whereas type 1 (T1) inflammation with interferon (IFN)-γ expression and type 3 (T3) inflammation with IL-17A expression predominate in CRS without nasal polyps (CRSsNP). In contrast, approximately half of the Asian CRSwNP patients demonstrate non-eosinophilic inflammation involving T1 and T3 inflammation as well as neutrophilic inflammation. Given the immunological heterogeneity of CRS, several studies have performed endotyping of CRS based on inflammatory profiles using cluster analysis to identify diverse clinical and immunological features of CRS and determine therapeutic arms.

In this lecture, I try to explain studies that have demonstrated different immunologic profiles of CRS between Western and Asian patients, and introduce a Korean multicenter study conducted by Korean Rhinologic Society (KRS) to investigate endotypes of CRS based on inflammatory profiles in Korean patients, involving cluster analysis with inflammatory markers.

Short Bio

1. EDUCATION
1992 M.D. Seoul National University College of Medicine Seoul, Korea
2002 M.S. Seoul National University College of Medicine Seoul, Korea
(Otolaryngology)
2004 Ph.D. Seoul National University College of Medicine Seoul, Korea

2. POSTDOCTORAL RESEARCH TRAINING
2005. 4-2006. 8 Visiting Scientist, Division of Mucosal Immunology, Department of Microbiology and Immunology, The Institute of Medical Science, The University of Tokyo, Tokyo, Japan
2013. 9-2015. 2 Visiting Scholar, Division of Allergy-Immunology, Department of Medicine, Northwestern University Feinberg School of Medicine, Chicago, USA

3. FACULTY APPOINTMENTS
2006. 9-2010. 3 Assistant Professor, Department of Otorhinolaryngology-Head and Neck Surgery, College of Medicine, Seoul National University, Seoul, Korea
2010. 4-2015. 8 Associate Professor, Department of Otorhinolaryngology-Head and Neck Surgery, College of Medicine, Seoul National University, Seoul, Korea
2015. 9-present Professor, Department of Otorhinolaryngology-Head and Neck Surgery, College of Medicine, Seoul National University, Seoul, Korea

4. PROFESSIONAL SOCIETY LEADERSHIP
2020-2021 Director of Scientific Committee, Korean Society of Otorhinolaryngology-Head and Neck Surgery
2022-2023 Director of Resident Training Committee, Korean Society of Otorhinolaryngology-Head and Neck Surgery
2021-2022 General Secretary, Korean Rhinologic Society
2025-2026 President, Korean Rhinologic Society

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Microbiome of chronic rhinosinusitis with nasal polyps in Japan

Masanori Kidoguchi[1)2)]
Department of Otorhinolaryngology-Head & Neck Surgery, University of Fukui[1)],
Northwestern University Feinberg School of Medicine[2)]

Chronic rhinosinusitis (CRS) is characterized by persistent inflammation of the nasal and paranasal sinus mucosa, and is categorized into eosinophilic CRS (ECRS) and non-eosinophilic CRS (non-ECRS). ECRS is classified as a type 2 inflammatory disease, but the role of bacteria in its pathogenesis remains unclear. Additionally, CRS includes a subtype known as allergic fungal rhinosinusitis (AFRS), which triggers type 2 inflammation similar to ECRS. However, ECRS is clinically regarded as a non-fungal disease, partly due to the lack of standardized methods for fungal detection, leaving the contribution of fungi to ECRS pathophysiology largely unexplored.

This study explores the contributions of bacteria and fungi to the pathophysiology of ECRS in a Japanese cohort. First, we analyzed bacterial communities and predicted bacterial functions in ECRS and non-ECRS patients. Compared to non-ECRS patients, ECRS patients exhibited lower levels of *Fusobacterium nucleatum* and reduced activity in lipopolysaccharide (LPS) biosynthesis pathways. Furthermore, we extracted LPS from *F. nucleatum* and assessed its effects on airway epithelial cells. Pre-treatment with *F. nucleatum*-derived LPS was found to inhibit IL-4- and IL-13-induced *ALOX15* expression in airway epithelial cells.

Next, we examined fungal communities in the same patient cohort. Despite ECRS being clinically classified as a non-fungal disease, multiple fungal species were detected in all cases. Co-occurrence analyses of paired bacterial and fungal samples revealed patient-specific patterns of bacterial-fungal interactions, including both co-existence and non-co-existence. Notably, the presence of *Alternaria* was associated with postoperative recurrence, indicating the potential existence of a poor prognosis fungal subtype within clinically non-fungal ECRS cases.

These findings suggest that bacterial and fungal dysbiosis in ECRS could influence its pathophysiology and surgical outcomes, underscoring the need to account for microbial interactions in the diagnosis and treatment of ECRS. Future studies, through the AMED ASPIRE project, will compare bacterial and fungal profiles between Japan and the United States to determine whether these observations are consistent across populations.

Short Bio

2010, M.D., University of Fukui
2010, Residency, National Hospital Organization Tokyo Medical Center
2012, Fellow, National Hospital Organization Tokyo Medical Center
2013, Fellow, University of Fukui
2014, Fellow, Fukui Red Cross Hospital
2016-2020, Ph.D., University of Fukui (Exchange Program to the University of Tsukuba)
2020-present, Assistant Professor, University of Fukui
2023-present, Visiting Scholar, Northwestern University Feinberg School of Medicine

Effects of type 3 and neutrophilic inflammation on type 2 nasal polyps

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Department of Otorhinolaryngology, International University of Health and Welfare

Background: Chronic rhinosinusitis with nasal polyps (CRSwNP) is divided into 3 inflammatory endotypes, type 1 (T1), T2 and T3 based on the T cell cytokine profiles. While neutrophils are classically associated with T3 endotype, neutrophilic infiltration can be present without a T3 signal. This study aimed to identify the effects of T3 and non-T3 neutrophilic inflammation (Vn; neutrophilic variant) on clinical presentations and distinguish their molecular mechanisms in patients with T2 CRSwNP.

Methods: We obtained 66 control ethmoid tissues and 158 nasal polyps (NPs). We measured mRNA markers for T1, T2, T3 and Vn inflammation by quantitative RT-PCR, and whole RNA expression profile by bulk RNA-Seq. We investigated associations between the endotypes and two aspects of natural history, polyp recurrence and radiographic disease severity. In addition, we identified endotype- specific molecular pathways by gene ontology (GO) enrichment analysis.

Results: Since 96% of the NPs had T2 endotype, most T1, T3 and Vn inflammation coexisted with T2 endotype. Mixed T2＋T3 and T2＋Vn NP were associated with recurrence ($p=0.003$), while mixed T2＋Vn NP was associated with a high computed tomography score ($p<0.001$). T2＋T3 and T2＋Vn NP had 285 shared up-regulated genes (>2-fold, $q<0.05$), including CD3 and GZMA, and the detected GO terms included 'cell killing'. While, mixed T2＋Vn NP had 407 specifically up-regulated genes (>2-fold, $q<0.05$), including CD163 and TGFB1, and detected GO terms included 'extracellular matrix organization'.

Conclusions: T3 and Vn inflammation induce different molecular pathways in combination with T2 inflammation, resulting in distinct clinical phenotypes in T2 CRSwNP.

Short Bio

2004-2010, Medical School, Okayama University
2010-2012, Residency, Kurashiki Central Hospital
2012-2015, Fellow, Otorhinolaryngology Head and Neck surgery, Kurashiki Central Hospital
2015-2017, Fellow, Otorhinolaryngology Head and Neck surgery, Kagawa Rosai Hospital
2017-2019, Fellow, Head and Neck surgery, Shikoku Cancer Center
2019-2023, Assistant Professor, Otorhinolaryngology Head and Neck surgery, International University of Health and Welfare
2023-2025, Visiting scholar, Division of Allergy and Immunology, Northwestern University Feinberg School of Medicine

International Symposium 6 Otology International Symposium: Korea-Thailand-Japan Joint Session

Revision cochlear implantation in SNUH

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Seoul National University Hospital

I will discuss CI reimplantation in SNUH. We have documented reimplantation rates at a cumulative 2.9%, with children accounting for 3.2% and adults at 1.9%. The causative etiologies encompass hard failures, soft failures, electrode displacements, magnet relocations necessitating reimplantation, and patients' elective preference for CI upgrade. A staggering 80% of cases were attributed to hard failures. The median interim between the first implantation and its replacement was approximately 51 months. While outcomes post-reimplantation are predominantly favorable, they do not guarantee significant improvements across all cases. It is imperative to note our results that reimplantation carries no additional risks, thus emphasizing its safety profile. However, otologists are compelled to judiciously appraise the indications and the prospective advantages of such procedures overall. I will conclude my talk with illustrative cases on reimplantation.

Professional experience

2000-2002	Research Fellowship in Dept. of Anatomy & Physiology at Kansas State University
2002-present	Professor, Dept. of ORL-HNS, Seoul National University Hospital
2011-2012	Visiting Doctor in Dept. of Otolaryngology at University of Melbourne

Activity in	Academic Organization
2016-2017	General Secretary of the Society of Korean Otorhinolaryngology-Head and Neck Surgery
2016-present	Korean Representative of the International Society of Audiology (ISA)
2017-present	Council member of the International Evoked Response Audiometry Study Group (IERASG)
2019-2021	Chair of the Korean Audiological Society
2024-2025	Chair of the Board of KORL-HNS

Cochlear implantation for subjects with single-sided deafness and debilitating tinnitus: surgical outcome and resting-state cortical activity changes

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The development of tinnitus is frequently deemed to be a neuroplastic response to sensory deprivation. This assumption is supported by the transient perception of tinnitus after experimentally induced partial and complete temporary auditory deprivation in normal subjects, and has been further strengthened by the absence of tinnitus in congenitally deaf animal models. Furthermore, analogous to phantom limb pain, the tinnitus spectrum corresponds to auditory deprived frequencies.

In patients with severe peripheral auditory deafferentation, reafferentation of the ascending auditory nervous system with cochlear implants (CI) may alleviate tinnitus. Indeed, CI significantly improved tinnitus in 66-100% of recipients with bilateral profound hearing loss. Improvement of tinnitus by CI has also been reported in patients with single-sided deafness (SSD) and ipsilesional debilitating tinnitus. In a recent meta-analysis, CI showed a statistically significant improvement in the severity of tinnitus. In this regard, CI is a promising treatment option for patients with SSD and combined severe tinnitus.

In this talk, personal clinical experience in treating 45 single-sided deafness and debilitating tinnitus subjects with CI will be shared. Also, functional neuroimaging study results comparing pre- and post-CI resting-state cortical activity will be addressed.

Short Bio

1994-2000: Seoul National University College of Medicine, Seoul, Korea (graduated with cum laude).
2000-2001: Rotating Internship, Seoul National University Hospital, Seoul, Korea.
2001-2005: Residency, Department of Otorhinolaryngology-Head and Neck Surgery, Seoul National University Hospital, Seoul, Korea.
2008-2009: Clinical & Research Fellowship at the Otology section, Department of Otorhinolaryngology-Head and Neck Surgery, Seoul National University Hospital, Seoul, Korea.
2009-2010: Clinical Assistant Professor, .Seoul National University Bundang Hospital
2011-2013: Postdoctoral researcher, University Hospital Antwerp, Edegem, Belgium.
Mar 2014-Aug 2014: Assistant professor, Seoul National University Bundang Hospital.
Sep 2014-Aug 2019: Associate professor, Seoul National University Bundang Hospital.
Sep 2019-Current: Professor, Seoul National University Bundang Hospital.
2024-2025: General Secretary, Korean Society of Otorhinolaryngology Head-and-Neck Surgery
2025-2026: Director, International Committee, Korean Otological Society

Ear Camp in Thailand

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Chulalongkorn university, Thailand

Fifty years ago, Thailand's healthcare system faced many challenges, with a limited number of otolaryngologists, low awareness of otitis media, and restricted access to treatment, especially in remote areas. As a result, many suffered severe complications, including brain abscesses, meningitis, facial palsy, and hearing loss.

In response, Dr. Salyaveth Lekagul and his dedicated team launched the "Ear Camp" project, bringing free ear surgeries to rural communities. Traveling across Thailand in a small van, they carried surgical equipment, microscopes, and medications, performing up to 60 surgeries per day, funded by personal contributions and donations.

Established in 1981, the Rural Ear Nose Throat Foundation expanded this mission by providing ear surgery for remote patients, supporting otolaryngology training with essential equipment, promoting academic work, and supplying medical devices to local hospitals. The Ear Camp extended beyond Thailand to neighboring countries, including Myanmar, Laos, Cambodia, Vietnam, Indonesia, and Bhutan. To facilitate these missions, Dr. Lekagul and his team developed a Mobile Ear Surgery Unit, designed for easy transport and reassembly in rural areas. Their tireless efforts transformed countless lives and laid the foundation for otolaryngology in Thailand.

Today, Thailand's healthcare system has significantly improved, with fewer cases of severe otitis media and its complications. While the foundation now conducts fewer Ear Camps, its focus has shifted to providing surgical equipment and microscopes for training, benefiting not only otolaryngology but also neurosurgery, orthopedics, ophthalmology, and dentistry.

Short Bio

1998-2004, Medical School, University of Chulalongkorn University
2007-2010, Residency, University of Chulalongkorn University
2012-2013, Fellowship in Otology/Neurotology, University of Toronto
2014-present, Assistant Professor, University of Chulalongkorn University

Universal newborn hearing screening in Thailand

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In Thailand, a guideline for newborn hearing screening was published in 2019. This guideline references risk factors for hearing loss and the hearing screening recommendations from the Joint Committee on Infant Hearing (JCIH) 2007 edition. In 2020, the newborn hearing screening flowchart was updated. It references risk factors for hearing loss based on the JCIH 2019 recommendations. The screening tools used are Otoacoustic Emissions (OAEs), which are used for both normal and at-risk infants. Automated Auditory Brainstem Response (AABR) is also recommended for at-risk infants in hospitals equipped with AABR. Hearing screening should be conducted within the first month of life. If a newborn does not pass the screening, a diagnostic hearing assessment is allowed by the age of 6 months, which differs from the JCIH recommendations. This is because Thailand has just begun promoting hearing screening and still lacks personnel trained to diagnose hearing loss in children.

In 2021, the Ministry of Public Health, in collaboration with the National Health Security Office (NHSO), announced a policy to include newborn hearing screening as part of the benefits package under the National Health Security System. Initially, the policy targeted at-risk newborns, such as those with a family history of hearing loss, congenital infections, or other medical conditions associated with hearing impairment. By 2022, the policy was expanded to include universal newborn hearing screening, ensuring that all newborns have access to early hearing detection services. A survey of hospitals in Thailand in 2023 found that most hospitals conduct universal newborn hearing screening, while some still screen only at-risk infants.

In cases where a newborn does not pass the hearing screening, they are referred to a hospital with the capability to conduct diagnostic hearing assessments. In Thailand, the healthcare system is divided into 13 health regions, each of which has designated at least one hospitals responsible for receiving referred cases and performing comprehensive hearing diagnostics, ensuring that families do not have to travel long distances to access care.

For children diagnosed with severe to profound hearing loss, the NHSO has provided coverage for one sided-cochlear implant surgery since 2021, which has the eligible criteria; age under 3 and a half year, bilateral severe to profound sensorineural hearing loss (>90 dB hearing level) and no language development when using hearing aids in both ears. Cochlear implants are electronic devices that stimulate the auditory nerve, allowing children with hearing loss to perceive sound, restore hearing and improve communication skills.

Thailand's National Health Security System has set a remarkable example in integrating newborn hearing screening and cochlear implant services into its benefits package. By prioritizing early detection and intervention, the policy not only improves the lives of children with hearing loss but also promotes equitable access to healthcare for all families.

Short Bio

1998-2004, Faculty of Medicine, Khon Kaen University
2004-2009, Residency in Otolaryngology Head and Neck Surgery, Khon Kaen University
2009-2012, Medical doctor, practitioner level, Center of Excellence in Otolaryngology Head and Neck Surgery, Rajavithi hospital
2012-2013, Observership in otology, UMC Nijmegen, The Netherlands and Sint Augustinus hospital, Belgium
2013-2020, Medical doctor, professional level, Center of Excellence in Otolaryngology Head and Neck Surgery, Rajavithi hospital
2021-Present, Medical doctor, senior professional level, Center of Excellence in Otolaryngology Head and Neck Surgery, Rajavithi hospital

Advancing Newborn Hearing Screening and Telemedicine for Cochlear Implant Users

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In Japan, a regional pilot program for Newborn Hearing Screening (NHS) was conducted between 2000 and 2004 to evaluate the challenges associated with implementing NHS as a mass screening program, subsequently NHS became a municipal-level initiative. Although disparities in screening rates among regions were once a concern, the current screening rate has reached approximately 95%, enabling the early detection of hearing impairment. The Japanese Society of Otorhinolaryngology-Head and Neck Surgery has developed a manual outlining screening methods and post-screening procedures. According to these guidelines, the initial hearing screening should be conducted within three days after birth, confirmatory examination for referred cases within one week, and a detailed examination by an otolaryngologist within three months if the confirmatory test also results in a referral.

Evidence supporting the treatment of congenital cytomegalovirus (cCMV) infection, one of the major causes of congenital hearing loss, has been established, and in Japan, valganciclovir treatment for symptomatic cCMV infection was covered by public health insurance in 2023. As a result, the government has issued a directive recommending that newborns who receive a referral in the initial hearing screening undergo a CMV urine test within three weeks of birth, as distinguishing between congenital and acquired infections becomes difficult after this period. In response, efforts are being made to establish testing systems across various regions of Japan.

For infants and children diagnosed with hearing loss through screening and confirmed by detailed hearing examinations, intervention by specialists, including otolaryngologists, is essential when necessary. In cases of severe or profound hearing loss, cochlear implantation is often chosen. However, for infants and young children, detailed follow-up, including precise mapping and habilitation/rehabilitation after cochlear implantation, is crucial. A significant challenge remains the limited number of hearing specialists and speech-language-hearing therapists, particularly in rural areas. As a result, accessibility to specialized medical care is often difficult for those living outside urban centers. Regular hospital visits for mapping and habilitation impose significant time, financial, and physical burdens on patients and their families, affecting the frequency of visits. Even for those residing closer to medical institutions, constraints related to work and school schedules can be an obstacle.

To address these issues, the author has been promoting remote healthcare services, including remote programming and telerehabilitation. When combined effectively with in-person medical care, telemedicine can enhance accessibility and increase opportunities for patients to receive high-quality medical care. Efforts are currently underway to establish evidence and validation for incorporating telemedicine for cochlear implant users into Japan's public health insurance system.

Short Bio

2001 M.D., Sapporo Medical University School of Medicine
2001-2003 Resident, Sapporo Medical University Hospital
2003-2008 Physician, Sapporo Medical University
2008-2012 Assistant Professor
2011-2012 Visiting fellow, Yale University
2013-2016 Junior Associate Professor, Sapporo Medical University
2016-2018 Associate Professor
2018-present Professor and Chairman