



Karthik Balakrishnan, MD, MPH, FAAP, FACS

Professor of Otolaryngology - Head & Neck Surgery (OHNS) and, by courtesy, of Pediatrics

Otolaryngology (Head and Neck Surgery)

 Curriculum Vitae available Online

CLINICAL OFFICE (PRIMARY)

- **Respiratory Specialties and ENT**

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Bio

BIO

Dr. Balakrishnan is a pediatric otolaryngologist specializing in the care of children with complex disorders of breathing, voice, and swallowing. He is an expert in complex surgical reconstruction of the larynx (voice box) and trachea (windpipe); innovative approaches to pediatric airway reconstruction; and in vascular anomalies of the head and neck. He has interests in improving the quality, safety, and value of pediatric surgical care, reducing costs of care, and optimizing the patient, family, and caregiver healthcare experience. He also has expertise in how cognitive and implicit bias may affect medical decision-making and in healthcare disparities and injustice. Dr. Balakrishnan is also a committed educator. He has twice been selected as otolaryngology faculty Teacher of the Year at Stanford and has worked with residents to develop an innovative quality improvement education program for surgical trainees. He has mentored multiple fellows, residents, medical students, and undergraduates, several of whom have pursued careers in otolaryngology. He frequently works with international colleagues to provide otolaryngology education in multiple resource-limited settings as well. Dr. Balakrishnan serves as medical director for surgical performance improvement at Stanford Lucile Packard Children's Hospital. He also serves in several other leadership roles in Stanford Medicine, including co-chair of the Teamwork Advisory Council, co-lead for the Otolaryngology department's diversity/equity/inclusion program, and NSQIP-Pediatric Surgeon Champion. In 2022, he was appointed the Susan B. Ford Surgeon-in-Chief of Stanford Medicine Children's Health and Lucile Packard Children's Hospital.

Dr. Balakrishnan has nationally and internationally recognized expertise in these areas, with many national and international invited presentations. He has published over 90 peer-reviewed papers, multiple textbook chapters, and a textbook (Evidence-Based Management of Head and Neck Vascular Anomalies, 2019). He has also served as Associate Editor for the journal Otolaryngology – Head and Neck Surgery and the Journal of Vascular Anomalies. He serves on multiple national and institutional quality committees and is founding co-chair of the national multicenter Aerodigestive Research Collaborative. His commitment to quality care in pediatric surgery has been recognized with fellowships in the American College of Surgeons and American Academy of Pediatrics.

Dr. Balakrishnan was born and raised in Baltimore, Maryland and attended college at Harvard University. After taking a year to work as a high school teacher in Baltimore, he attended medical school at Johns Hopkins, with an additional year to complete a Howard Hughes Medical Institute research fellowship. He then completed residency in Otolaryngology – Head & Neck Surgery at the University of Washington. During residency, Dr. Balakrishnan completed a two-year NIH-funded research fellowship and a Master of Public Health degree with a focus on Health Services. He completed a two-year fellowship at Cincinnati Children's Hospital with a focus on complex reconstruction of the pediatric larynx and trachea and pediatric aerodigestive disorders.

In 2014, Dr. Balakrishnan joined the otolaryngology faculty at Mayo Clinic in Rochester, Minnesota, where he was a key contributor to the multidisciplinary aerodigestive, vascular anomalies, and velopharyngeal insufficiency programs. At the Mayo Clinic Children's Center, Dr. Balakrishnan also served as a surgical quality leader and championed the development of a comprehensive pediatric surgical quality program. Dr. Balakrishnan joined the Stanford Department of Otolaryngology – Head & Neck Surgery and Lucile Packard Children's Hospital faculty in early 2020.

CLINICAL FOCUS

- Airway Reconstruction
- Airway Obstruction
- Laryngeal Stenosis
- Tracheal Stenosis
- Vocal Cord Paralysis
- Airway
- Airway Surgery
- Choanal Atresia
- Vascular Anomalies
- Tracheostomy
- Tracheostomy Dependence
- Swallowing Disorders
- Aspiration
- Pediatric Otolaryngology

ACADEMIC APPOINTMENTS

- Professor - University Medical Line, Otolaryngology (Head and Neck Surgery)
- Professor - University Medical Line (By courtesy), Pediatrics
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)

ADMINISTRATIVE APPOINTMENTS

- Susan B. Ford Surgeon-in-Chief, Lucile Packard Children's Hospital/Stanford Children's Health, (2022- present)
- Co-chair, Stanford Otolaryngology Diversity, Equity, and Inclusion (DEI) committee, (2021- present)
- Co-chair, Stanford Medicine Teamwork Advisory Council, Stanford Medicine Center for Improvement, (2021- present)
- Member, Stanford Medicine Healthy Equity Committee, Stanford Medicine Center for Improvement, (2021- present)
- Medical Director of Surgical Performance Improvement, Lucile Packard Children's Hospital, Stanford, (2020- present)

HONORS AND AWARDS

- Fellow, Stanford Medicine Center for Improvement
- Fellow, American College of Surgeons
- Fellow, American Academy of Pediatrics

PROFESSIONAL EDUCATION

- Board Certification: Complex Pediatric Otolaryngology, American Board of Otolaryngology (2021)
- Fellowship: Cincinnati Children's Medical Center Pediatric Otolaryngology (2014) OH
- MPH, University of Washington , Health Services (2008)
- Board Certification: Otolaryngology, American Board of Otolaryngology (2013)
- Residency: University of Washington Otolaryngology Residency (2012) WA
- Internship: University of Washington Dept of Surgery (2006) WA
- Medical Education: Johns Hopkins University School of Medicine (2005) MD

LINKS

- Stanford Children's webpage: <https://www.stanfordchildrens.org/en/doctor/karthik-balakrishnan>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Balakrishnan studies ways to improve outcomes of pediatric airway reconstruction for diseases such as laryngotracheal, subglottic and tracheal stenosis, congenital tracheal stenosis and complete tracheal rings, laryngeal clefts, and vocal fold immobility and paralysis. He also examines the same questions for vascular malformations such as lymphatic malformations, venous malformations and hemangiomas.

Dr. Balakrishnan's research focuses on ways to standardize treatments and measure outcomes in these complex diseases, as well as ways to reduce treatment costs and medical errors, particularly those related to cognitive bias. By improving outcomes and reducing costs, he aims to improve the value of care, while also optimizing patient and caregiver experience during the care process.

Focus areas

1. Standardizing outcomes and processes in pediatric airway reconstruction. Dr. Balakrishnan co-leads unique international and national multidisciplinary collaborative groups to develop standard processes and outcome measures for airway surgery and aerodigestive (breathing/voice/swallowing) care in children. His previous work has led to the development of similar standards for lymphatic malformations in the head and neck and for reconstructive surgery of the larynx (voice box) and trachea (windpipe) in children. He has internationally recognized expertise in developing consensus statements for these complex questions.
2. Costs of otolaryngology care. Dr. Balakrishnan has studied thousands of patients and otolaryngology operations to identify factors that may predict more costly medical care. This will lead to process improvements that will allow Stanford and other institutions to reduce the cost burden that patients and the U.S. health care system face while maintaining quality and access to care. Dr. Balakrishnan's current work connects these costs to the outcomes and value of care provided.
3. Cognitive bias and implicit bias and medical error. Dr. Balakrishnan is working to improve otolaryngology resident and provider education related to the effects of cognitive and implicit bias on medical decision-making, and ways to reduce medical errors related to those biases.
4. Evidence-based care of vascular anomalies. Dr. Balakrishnan leads a task force of colleagues around the country to develop better scientific evidence to guide the care of challenging vascular anomalies such as lymphatic malformations.

5. Innovative approaches to pediatric airway reconstruction. Dr. Balakrishnan has studied several minimally invasive endoscopic approaches to airway surgery and is currently developing new robotic techniques to reconstruct the airway.

Significance to patient care

Complex and rare conditions such as airway stenosis and vascular malformations greatly impact children's survival and quality of life, but treatment pathways and standardization of care are still lacking. Dr. Balakrishnan hopes that increasing standardization of care and outcome reporting for these conditions will help doctors provide better care for these patients, with reduced costs and a better experience for children and their families and caregivers. Meanwhile, by developing and studying new and potentially better ways to do airway surgery, Dr. Balakrishnan hopes to provide families with innovative options that may better suit their children's needs.

Teaching

COURSES

2021-22

- Why College? Your Education and the Good Life: COLLEGE 101 (Aut)

STANFORD ADVISEES

Med Scholar Project Advisor

Jay Shah

Publications

PUBLICATIONS

- **Impact of demographics and social vulnerability on outcomes in pediatric medullary thyroid cancer.** *International journal of pediatric otorhinolaryngology*
Rahman, A., Low, C., Huang, A., Meister, K., Balakrishnan, K.
2024; 187: 112166
- **Recurrent Respiratory Papillomatosis in the Post-Human Papillomavirus Vaccination Era.** *JAMA pediatrics*
Qian, Z. J., Peñaranda, D., Valdez, T. A., Balakrishnan, K., Brigger, M. T.
2024
- **Large Language Models in Otolaryngology Residency Admissions: A Random Sampling Analysis.** *The Laryngoscope*
Halagur, A. S., Balakrishnan, K., Ayoub, N.
2024
- **Consensus on intake questionnaire data elements in the development of an aerodigestive registry.** *International journal of pediatric otorhinolaryngology*
Ruiz, R., Wooten, C., Balakrishnan, K., Boesch, R. P., Prager, J., Rosen, R., Sidell, D., de Alarcon, A., Chiou, E. H., Rutter, M. J., Piccione, J.
2024; 182: 112016
- **Towards a wraparound model of surgical care: Expanding out-of-hospital phases and integrating health justice considerations to improve health outcomes.** *American journal of surgery*
Mukund, A. X., Lu, A., Asamoah, A., Balakrishnan, K.
2024: 115786
- **Suprazygomatic Maxillary Nerve Blocks and Opioid Requirements in Pediatric Adenotonsillectomy: A Randomized Clinical Trial.** *JAMA otolaryngology-- head & neck surgery*
Lin, C., Abboud, S., Zoghbi, V., Kasimova, K., Thein, J., Meister, K. D., Sidell, D. R., Balakrishnan, K., Tsui, B. C.
2024
- **The utility of ChatGPT as a generative medical translator.** *European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery*

- Grimm, D. R., Lee, Y. J., Hu, K., Liu, L., Garcia, O., Balakrishnan, K., Ayoub, N. F.
2024
- **Impact of a Daily Huddle on Safety in Perioperative Services.** *Joint Commission journal on quality and patient safety*
Tuyishime, H., Claire, R., Balakrishnan, K., Chan, H., Lam, L., Randolph, M., Stroud, J., Traber, K., Tileston, K., Shea, K.
2024
 - **Closing the Gap: Exploring the Role of Cap Grafts in Tracheocutaneous Fistula Closure** *INDIAN JOURNAL OF OTOLARYNGOLOGY AND HEAD & NECK SURGERY*
Shashidhar, T. B., Balakrishnan, K., Chandra, I.
2024
 - **Use of temporary tracheostomy occlusion to reduce the risk of sternal wound infection after sternotomy in congenital cardiac surgery.** *Cardiology in the young*
Azimzadeh, J. B., Sidell, D. R., Balakrishnan, K., Mathew, R., Asija, R., Rutter, M. J., Meister, K. D.
2024: 1-6
 - **Prenatal Diagnosis and Postnatal Management of a Fetal Pericardial Mass.** *NeoReviews*
Weigel, N., Hintz, S., Kaplinski, M., Barth, R., Balakrishnan, K., Panelli, D., Ma, M., Chitkara, R.
2023; 24 (10): e683-e689
 - **Allyship to Advance Diversity, Equity, and Inclusion in Otolaryngology: What We Can All Do.** *Current otorhinolaryngology reports*
Balakrishnan, K., Faucett, E. A., Villwock, J., Boss, E. F., Esianor, B. I., Jefferson, G. D., Graboyes, E. M., Thompson, D. M., Flanary, V. A., Brenner, M. J.
2023; 11 (3): 201-214
 - **Redefining "Value" in Surgery: Development of a Comprehensive Value Score for Outpatient Endocrine Surgery.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Ayoub, N. F., Noel, J., Orloff, L. A., Balakrishnan, K.
2023
 - **Allyship to Advance Diversity, Equity, and Inclusion in Otolaryngology: What We Can All Do** *CURRENT OTORHINOLARYNGOLOGY REPORTS*
Balakrishnan, K., Faucett, E. A., Villwock, J., Boss, E. F., Esianor, B. I., Jefferson, G. D., Graboyes, E. M., Thompson, D. M., Flanary, V. A., Brenner, M. J.
2023
 - **A multicenter study analyzing the impact of pre-existing comorbidities on laryngotracheal reconstruction (LTR) outcomes.** *International journal of pediatric otorhinolaryngology*
Jacobs, I. N., Giordano, T., Soaper, A., Din, T. F., Faig, W., de Alarcon, A., Balakrishnan, K., Prager, J. D., Michael, R., Douglas, S., Piccione, J.
2023; 172: 111631
 - **Time-Driven Activity-Based Cost Comparison of Thyroid Lobectomy and Radiofrequency Ablation.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Ayoub, N. F., Balakrishnan, K., Orloff, L. A., Noel, J. E.
2023
 - **Pediatric Tracheostomy Emergency Readiness Assessment Tool: International Consensus Recommendations.** *The Laryngoscope*
Schiff, E., Propst, E. J., Balakrishnan, K., Johnson, K., Lounsbury, D. W., Brenner, M. J., Tawfik, M. M., Yang, C. J.
2023
 - **Comparison Between ChatGPT and Google Search as Sources of Postoperative Patient Instructions.** *JAMA otolaryngology-- head & neck surgery*
Ayoub, N. F., Lee, Y., Grimm, D., Balakrishnan, K.
2023
 - **Safety and effectiveness of vocal fold injection laryngoplasty in infants less than one year of age.** *International journal of pediatric otorhinolaryngology*
Ayoub, N., Balakrishnan, K., Meister, K., Grimm, D., Johnson, A., Maida, K., Sidell, D. R.
2023; 168: 111542

- **Ankyloglossia: Clinical and Sociodemographic Predictors of Diagnosis and Management in the United States, 2004 to 2019.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Wei, E. X., Meister, K. D., Balakrishnan, K., Cheng, A. G., Qian, Z. J.
2023
- **International Pediatric Otolaryngology Group: Consensus guidelines on the diagnosis and management of non-tuberculous mycobacterial cervicofacial lymphadenitis.** *International journal of pediatric otorhinolaryngology*
Roy, C. F., Balakrishnan, K., Boudewyns, A., Cheng, A., Chun, R. H., Daniel, S. J., Fayoux, P., Hart, C., Hemansson, A., Hewitt, R., Hsu, W. C., Kuo, M., Liu, et al
2023; 166: 111469
- **Social Perception of External Laryngeal Anatomy Related to Gender Expression in a Web-based Survey.** *The Laryngoscope*
Kiessling, P., Balakrishnan, K., Fauer, A., Sanan, A., McDonald, D., Thomas, J., Erickson-Direnzo, E., Sung, C. K., Nuyen, B.
2022
- **Single-port robotic transcervical long-segment thoracic tracheal reconstruction: Cadaveric proof-of-concept study.** *JTCVS techniques*
Lui, N. S., Holsinger, F. C., Ma, M. R., Janus, J. R., Balakrishnan, K.
2022; 16: 231-236
- **International Pediatric Otolaryngology Group (IPOG) consensus recommendations: Evaluation and management of congenital tracheal stenosis.** *International journal of pediatric otorhinolaryngology*
Sidell, D. R., Meister, K. D., de Alarcon, A., Boudewyns, A., Brigger, M., Chun, R., Fayoux, P., Goudy, S., Hart, C. K., Hewitt, R., Hsu, W., Javia, L. R., Johnson, et al
2022; 161: 111251
- **Language Matters.** *Annals of surgery*
Losorelli, S., Su-Velez, B., Balakrishnan, K.
2022
- **Impact of COVID-19 on nationwide pediatric otolaryngology practice: Adenotonsillectomies (TA) and tonsil-related diagnoses trends.** *American journal of otolaryngology*
Allen, D. Z., Challapalli, S., Lee, K. H., Bell, C. S., Roy, S., Bowe, S., Balakrishnan, K., Chang, C. W., Huang, Z.
2022; 43 (5): 103526
- **Moving Beyond Detection: Charting a Path to Eliminate Health Care Disparities in Otolaryngology.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Bowe, S. N., Megwalu, U. C., Bergmark, R. W., Balakrishnan, K.
2022: 1945998221094460
- **Consensus on Triple Endoscopy Data Elements Preparatory to Development of an Aerodigestive Registry.** *The Laryngoscope*
Boesch, R. P., de Alarcon, A., Piccione, J., Prager, J., Rosen, R., Sidell, D. R., Wootten, C., Balakrishnan, K., Aerodigestive Research Collaborative
2022
- **Suprazygomatic infratemporal pterygopalatine fossa block with adjuvant low-dose dexmedetomidine for adenotonsillectomy.** *Canadian journal of anaesthesia = Journal canadien d'anesthesie*
Zoghbi, V., Okonski, F., Pan, S., Lin, C., Balakrishnan, K., Tsui, B. C.
1800
- **Impact of COVID-19 on nationwide pediatric otolaryngology: Otitis media and myringotomy tube trends.** *American journal of otolaryngology*
Allen, D. Z., Challapalli, S., McKee, S., Lee, K. H., Bell, C. S., Roy, S., Bowe, S., Balakrishnan, K., Chang, C. W., Huang, Z.
1800; 43 (2): 103369
- **Disruptive Therapy Using a Nonsurgical Orthodontic Airway Plate for the Management of Neonatal Robin Sequence: 1-Year Follow-up.** *The Cleft palate-craniofacial journal : official publication of the American Cleft Palate-Craniofacial Association*
Choo, H., Galera, R. I., Balakrishnan, K., Lin, H. C., Ahn, H., Lorenz, P., Khosla, R. K., Profit, J., Poets, C. F., Lee, J. S.
2022: 10556656221076980
- **Overcoming Vaccine Hesitancy Around Bell Palsy in Otolaryngology-Head and Neck Surgery: Lessons for COVID-19 Pandemic and Beyond.** *JAMA otolaryngology-- head & neck surgery*
Lam, D. J., Balakrishnan, K., Brenner, M. J.
2021

- **Neonatal Nasal Obstruction** *CURRENT OTORHINOLARYNGOLOGY REPORTS*
Diop, M., Balakrishnan, K.
2021
- **Price Transparency and Compliance With Federal Regulation for Pediatric Tonsillectomy.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Ayoub, N. F., Balakrishnan, K.
2021: 1945998211047146
- **Effects of Social Determinants of Health Care on Pediatric Thyroid Cancer Outcomes in the United States.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Gruszczynski, N. R., Low, C. M., Choby, G., Meister, K. D., Smith, B. H., Balakrishnan, K.
2021: 1945998211032901
- **Opioid-Free Tonsillectomy With and Without Adenoidectomy: The Role of Regional Anesthesia in the "New Era".** *Anesthesia and analgesia*
Tsui, B. C., Pan, S., Smith, L., Lin, C., Balakrishnan, K.
2021; 133 (1): e7-e9
- **Sinonasal adenocarcinoma: A population-based analysis of demographic and socioeconomic disparities.** *Head & neck*
Low, C. M., Balakrishnan, K., Smith, B. M., Stokken, J. K., O'Brien, E. K., Van Gompel, J. J., Rowan, N. R., Choby, G.
2021
- **Pediatric Bilateral Vocal Fold Paralysis** *CURRENT OTORHINOLARYNGOLOGY REPORTS*
Kohn, J., Balakrishnan, K., Sidell, D.
2021; 9 (2): 127-133
- **Suprazygomatic maxillary (SZM) nerve blocks for perioperative pain control in pediatric tonsillectomy and adenoidectomy.** *Journal of clinical anesthesia*
Smith, L., Balakrishnan, K., Pan, S., Tsui, B. C.
2021; 71: 110240
- **Laryngeal and Tracheal Pressure Injuries in Patients With COVID-19-Reply** *JAMA OTOLARYNGOLOGY-HEAD & NECK SURGERY*
Balakrishnan, K., Brenner, M. J., Hillel, A. T.
2021
- **Laryngeal and Tracheal Pressure Injuries in Patients With COVID-19.** *JAMA otolaryngology-- head & neck surgery*
Balakrishnan, K., Brenner, M. J., Hillel, A. T.
2021
- **Postoperative dysphagia immediately following pediatric endoscopic laryngeal cleft repair.** *International journal of pediatric otorhinolaryngology*
Kiessling, P., Smith, A., Puccinelli, C., Balakrishnan, K.
2021; 142: 110625
- **Systemic Bevacizumab for Treatment of Respiratory Papillomatosis: International Consensus Statement.** *The Laryngoscope*
Sidell, D. R., Balakrishnan, K., Best, S. R., Zur, K., Buckingham, J., De Alarcon, A., Baroody, F. M., Bock, J. M., Boss, E. F., Bower, C. M., Campisi, P., Chen, S. F., Clarke, et al
2021
- **Outpatient healthcare use and outcomes after pediatric tracheostomy.** *International journal of pediatric otorhinolaryngology*
Qian, Z. J., Megwalu, U. C., Cheng, A. G., Balakrishnan, K.
2021; 151: 110963
- **International Pediatric Otolaryngology Group (IPOG) survey: Efforts to avoid complications in home tracheostomy care.** *International journal of pediatric otorhinolaryngology*
Caloway, C., Balakrishnan, K., Boudewyns, A., Chan, K. H., Cheng, A., Daniel, S. J., Fayoux, P., Garabedian, N., Hart, C., Moreddu, E., Muntz, H., Nicollas, R., Nuss, et al
2020; 141: 110563
- **Endotracheal metallic stent removal: A novel ABC (airway balloon collapse) technique.** *International journal of pediatric otorhinolaryngology*
Cofer, S. A., Badaoui, J. N., Boesch, R. P., Balakrishnan, K.

2020: 110490

- **Oral Intubation Attempts in Patients With a Laryngectomy: A Significant Safety Threat.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Brenner, M. J., Cramer, J. D., McGrath, B. A., Balakrishnan, K., Stepan, K. O., Pandian, V., Roberson, D. W., Shah, R. K., Chen, A. Y., Brook, I., Nussenbaum, B.
2020: 194599820960728
- **Competency-Based Assessment Tool for Pediatric Esophagoscopy: International Modified Delphi Consensus.** *The Laryngoscope*
Faucett, E. A., Wolter, N. E., Balakrishnan, K., Ishman, S. L., Mehta, D., Parikh, S., Nguyen, L. H., Preciado, D., Rutter, M. J., Prager, J. D., Green, G. E., Pransky, S. M., Elluru, et al
2020
- **Opioid Prescribing Patterns Following Pediatric Tonsillectomy in the United States, 2009-2017.** *The Laryngoscope*
Qian, Z. J., Alyono, J. C., Jin, M. C., Cooperman, S. P., Cheng, A. G., Balakrishnan, K.
2020
- **Intraoperative Sentinel Events in the Era of Surgical Safety Checklists: Results of a National Survey.** *OTO open*
Cramer, J. D., Balakrishnan, K., Roy, S., David Chang, C. W., Boss, E. F., Brereton, J. M., Monjur, T. M., Nussenbaum, B., Brenner, M. J.
2020; 4 (4): 2473974X20975731
- **Multidisciplinary Safety Recommendations After Tracheostomy During COVID-19 Pandemic: State of the Art Review.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Meister, K. D., Pandian, V., Hillel, A. T., Walsh, B. K., Brodsky, M. B., Balakrishnan, K., Best, S. R., Chinn, S. B., Cramer, J. D., Graboyes, E. M., McGrath, B. A., Rassekh, C. H., Bedwell, et al
2020: 194599820961990
- **Laryngotracheal Reconstruction in a Patient With a Central Conducting Lymphatic Anomaly.** *The Laryngoscope*
Macielak, R. J., Low, C. M., Tollefson, M. M., Balakrishnan, K.
2020
- **International Pediatric Otolaryngology Group (IPOG): Consensus recommendations on the prenatal and perinatal management of anticipated airway obstruction.** *International journal of pediatric otorhinolaryngology*
Puricelli, M. D., Rahbar, R., Allen, G. C., Balakrishnan, K., Brigger, M. T., Daniel, S. J., Fayoux, P., Goudy, S., Hewitt, R., Hsu, W., Ida, J. B., Johnson, R., Leboulanger, et al
2020; 138: 110281
- **Speech Pathology Utilization and Stroboscopy Before and After Adult Medialization Laryngoplasty.** *Journal of voice : official journal of the Voice Foundation*
Orbelo, D. M., Ekbohm, D. C., Van Houten, H. K., Bayan, S. L., Balakrishnan, K.
2020
- **The Difficult Airway and Aerosol-Generating Procedures in COVID-19: Timeless Principles for Uncertain Times.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Smith, J. D., Chen, M. M., Balakrishnan, K., Sidell, D. R., di Stadio, A., Schechtman, S. A., Brody, R. M., Kupfer, R. A., Rassekh, C. H., Brenner, M. J.
2020: 194599820936615
- **COVID-19 Pandemic: What Every Otolaryngologist-Head and Neck Surgeon Needs to Know for Safe Airway Management.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Balakrishnan, K., Schechtman, S., Hogikyan, N. D., Teoh, A. Y., McGrath, B., Brenner, M. J.
2020: 194599820919751
- **Pediatric tracheostomy practice patterns.** *International journal of pediatric otorhinolaryngology*
Sioshansi, P. C., Balakrishnan, K., Messner, A., Sidell, D.
2020; 133: 109982
- **Sclerotherapy for lymphatic malformations of head and neck: Systematic review and meta-analysis.** *Journal of vascular surgery. Venous and lymphatic disorders*
De Maria, L., De Sanctis, P., Balakrishnan, K., Tollefson, M., Brinjikji, W.
2020; 8 (1): 154-64

- **Sclerotherapy for Venous Malformations of Head and Neck: Systematic Review and Meta-Analysis.** *Neurointervention*
De Maria, L. n., De Sanctis, P. n., Balakrishnan, K. n., Tollefson, M. n., Brinjikji, W. n.
2020
- **The Relationship between Croup and Gastroesophageal Reflux: A Systematic Review and Meta-Analysis.** *The Laryngoscope*
Coughran, A. n., Balakrishnan, K. n., Ma, Y. n., Vaezeafshar, R. n., Capdarest-Arest, N. n., Hamdi, O. n., Sidell, D. R.
2020
- **International Pediatric Otolaryngology group (IPOG) consensus on the diagnosis and management of pediatric obstructive sleep apnea (OSA).** *International journal of pediatric otorhinolaryngology*
Benedek, P. n., Balakrishnan, K. n., Cunningham, M. J., Friedman, N. R., Goudy, S. L., Ishman, S. L., Katona, G. n., Kirkham, E. M., Lam, D. J., Leblouanger, N. n., Lee, G. S., Le Treut, C. n., Mitchell, et al
2020; 138: 110276
- **International Pediatric Otolaryngology Group (IPOG) management recommendations: Pediatric tracheostomy decannulation.** *International journal of pediatric otorhinolaryngology*
Kennedy, A. n., Hart, C. K., de Alarcon, A. n., Balakrishnan, K. n., Bowudewyns, A. n., Chun, R. n., Fayoux, P. n., Goudy, S. L., Hartnick, C. n., Hsu, W. C., Johnson, R. F., Kuo, M. n., Peer, et al
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