

# Giriraj K. Sharma, MD, MS

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## Education

Resident, University of California, Irvine (Orange, CA) Specialty: Otolaryngology – Head and Neck Surgery	2015 – present
Resident, MedStar Washington Hospital Center (Washington, DC) Specialty: General Surgery (categorical)	2012
Internship, MedStar Washington Hospital Center Specialty: General Surgery (preliminary)	2011 – 2012
MD, George Washington University (Washington, DC) Major: Medicine	2011
MS, Virginia Commonwealth University (Richmond, VA) Major: Physiology	2006
BA, Carnegie Mellon University (Pittsburgh, PA) Major: Chemistry	2004

## Professional Positions

Post-doctoral research fellow Brian J-F. Wong Research Lab, Beckman Laser Institute Department of Otolaryngology – Head and Neck Surgery University of California, Irvine (Irvine, CA)	2013 – 2015
Post-doctoral research fellow Department of Otolaryngology – Head and Neck Surgery University of Southern California (Los Angeles, CA)	2012 – 2013

## Licensure and Certifications

California Physician and Surgeon license, Medical Board of California	2013 - present
Washington, DC Postgraduate physician license	2011 – 2012

## Professional Memberships

Member, American Academy of Facial Plastic and Reconstructive Surgery (Nov 2018 – present)

Member, American Academy of Otolaryngology – Head and Neck Surgery (July 2015 - present)

Member, Triological Society (July 2015 – present)

## Awards and Honors

<b>First Place</b> , Triological Society poster award Pediatric Otolaryngology, 2015 Sections Meeting	2015
<b>First Place</b> , Charles F. Ferguson Clinical Research Award American Society of Pediatric Otolaryngology (ASPO)	2014
Ammerman Foundation Scholarship George Washington University Academic scholarship for achievement in research	2008
Stone/Stine Memorial Scholarship Carnegie Mellon University Academic scholarship	2000 – 2004
Presidential Scholar Carnegie Mellon University Academic scholarship	2000 – 2004
National Merit Scholar, <i>finalist</i>	2000
US Congressional Award, Gold medal URL: <a href="http://www.congressionalaward.org">www.congressionalaward.org</a>	1999

## Publications

### Peer-reviewed journal articles

1. Vates JR, Hetrick JL, Lavin KL, **Sharma GK**, Wagner RL, Johnson JT. Protecting medical record information: start your research registries today. *Laryngoscope* 2005; 115(3):441-444.
2. Clemo HR, **Sharma GK**, Allman BL, Meredith MA. Auditory projections to extrastriate visual cortex: connectional basis for multisensory processing in 'unimodal' visual neurons. *Exp Brain Research* 2008; 191(1):37-47.
3. **Sharma GK**, Deshmukh VR, Albuquerque FC, Wolf TR, McDougall CG. Resolution of mydriatic pupil after angioplasty and stenting of cervical internal carotid artery dissection: case report. *Neurosurgery* 2009; 64(3):562-563.
4. **Sharma GK**, Kucia EJ, Spetzler RF. Spontaneous intramedullary hemorrhage of spinal hemangioblastoma: case report. *Neurosurgery* 2009; 65(3):627-628.

## Giriraj K. Sharma, MD, MS

5. Chang SW, Kakarla UK, **Sharma GK**, Spetzler RF. Posterior inferior cerebellar artery origin thrombosis with aneurysm of collateralized posterior meningeal artery presenting as subarachnoid hemorrhage: case report. *Neurosurgery* 2009; 65(4):E818-9.
6. **Sharma GK**, Gilson MM, Nathan H, Makary MA. Needlestick injuries among medical students: incidence and implications. *Academic Medicine* 2009; 84(12):1815-1821.
7. **Sharma GK**, Eschbacher JM, Uschold TD, Theodore N. Neuroblastoma-like schwannoma of lumbar spinal nerve root. *J Neurosurg Spine* 2010; 13(1):82-86.
8. Kakarla UK, Kalani MY, **Sharma GK**, Sonntag VK, Theodore N. Surgical management of coccidiomycosis of the spine. *J Neurosurg Spine* 2011; 15(4):441-446.
9. **Sharma GK**, Dhillon VK, Masood R, Maceri DR. Overexpression of EphB4, EphrinB2 and epidermal growth factor receptor in papillary thyroid carcinoma: a pilot study. *Head and Neck*. 2014; 37(7):964-969.
10. Lazarow FB, Ahuja GS, Chin Loy A, Su E, Nguyen TD, **Sharma GK**, Wang A, Jing J, Chen Z, Wong BJ. Intraoperative long range optical coherence tomography as a novel method of imaging the pediatric upper airway before and after adenotonsillectomy. *Int J Peds Otorhinol* 2015; 79(1): 63-70.
11. Volgger V, **Sharma GK\***, Peaks YA, Loy AC, Lazarow F, Jing J, Wang A, Qu Y, Su E, Chen Z, Ahuja GS, Wong BJ. Long-range Fourier domain optical coherence tomography of the pediatric subglottis. *Int J Peds Otorhinol* 2015; 79(2):119-126.  
**\*Co-first author**
12. **Sharma GK**, Verma SP. Is nebulized lidocaine adequate topical anesthesia for transnasal tracheoscopy? *Ann Oto Rhinol Laryngol* 2015; 124(7):545-549.
13. **Sharma GK**, Foulad A, Verma SP. A novel device for measurement of subglottic stenosis during suspension laryngoscopy. *JAMA Oto Head Neck Surg* 2015; 141(4):377-381.
14. **Sharma GK**, Ahuja GS, Wiedmann M, Osann KE, Su E, Heidari AE, Jing JC, Qu Y, Lazarow F, Wang A, Chou L, Uy CC, Dhar V, Cleary JP, Pham N, Huoh K, Chen Z, Wong BJ. Long-range optical coherence tomography of the neonatal upper airway for early diagnosis of intubation-related subglottic injury. *Am J Respir Crit Care Med* 2015; 192(2):1504-1513.
15. Coughlan C, Chou LD, Jing JC, Chen JJ, Rangarajan S, Chang TH, **Sharma GK**, Cho K, Lee D, Goddard JA, Chen Z, Wong BJ. In vivo cross-sectional imaging of the phonating larynx using long-range Doppler optical coherence tomography. *Sci Reports* 2016; 6: 22792.
16. **Sharma GK**, Chin Loy A, Su E, Jing J, Chen Z, Wong BJ, Verma SP. Quantitative evaluation of adult subglottic stenosis using intraoperative long-range optical coherence tomography. *Ann Oto Rhinol Laryngol* 2016; 125(10): 815-822.
17. **Sharma GK**, Sofferman RA, Armstrong WB. Evaluation of the American College of Surgeons thyroid and parathyroid ultrasound course: results of a web-based survey. *Laryngoscope* 2017; 127(8):1950-1958.
18. **Sharma GK**, Foulad A, Shamouelian D, Bhandarkar ND. Inefficiencies in Computed Tomography sinus imaging for management of sinonasal disease. *Oto Head Neck Surg* 2017; 156(3): 575-582.
19. Saez N, **Sharma GK**, Barnes CH, Lu Y, Hsu FP, Huoh KC, Djalilian HR, Lin HW. Solid variant of aneurysmal bone cyst of the temporal bone. *Ann Oto Rhinol Laryngol* 2018; 127(4): 285-290.

## Giriraj K. Sharma, MD, MS

20. Tripathi PB, Majd P, Ngo T, Gu JT, **Sharma GK**, Badger C, Bhandarkar ND, Wong BJ. Evaluation of safety and efficacy for an intranasal airway device in nasal surgery. *JAMA Fac Plast Surg*. E-pub 2018 Sep 6 2018.

### **Pending submission:**

21. **Sharma GK**, Chen LY, Badger C, Hong E, Chou L, Rangarajan S, Chang TH, Armstrong WB, Verma SP, Chen Z, Ramalingam R, Wong BJ. In vivo optical coherence tomography of the human vocal folds in motion: transforming the paradigms of speech and sound. *Nat Methods*.

### **Proceedings of conference and symposia**

1. Su E, **Sharma GK**, Chen J, Nguyen TD, Wang A, Hamamoto A, Ahuja GS, Chen Z, Wong BJ. Analysis and digital 3D modeling of long-range Fourier domain optical coherence tomography images of the pediatric subglottis. *Proceedings SPIE 8926, Photonic Therapeutics and Diagnostics X*, 89262J. March 3, 2014.
2. Rangarajan S, Chou L, Coughlan C, **Sharma GK**, Wong BJ, Ramalingam TS. Development of a high-speed VCSEL OCT system for real-time imaging of conscious patients' larynx using a hand-held probe. *Proceedings SPIE 9689, Photonic Therapeutics and Diagnostics XII*, 968920. April 27, 2016.
3. Rangarajan S, Chou L, **Sharma GK**, Barnes C, Wong BJ and Ramalingam TS. Real-time three-dimensional imaging of larynx using a swept-source optical coherence tomography (SS-OCT) system consisting of a GRIN lens rod-based probe and a high speed VCSEL laser source. *Biomedical Optics 2016*, OSA Technical Digest (online) (Optical Society of America, 2016), paper JTU3A.15.

### **Book chapters**

1. Venbrux AC, **Sharma GK**, Jackson ET, Harper AP, Hover L. Pelvic Varices Embolization. In Ignacio EA, Venbrux AC (eds): *Women's Health in Interventional Radiology*. Springer, 2012. ISBN-10: 1441958754.
2. **Sharma GK**, Boeckmann JO, Wong BJ. Evidence-Based Medicine. In Wong BJ, Arnold MG, Boeckmann JO (eds): *Facial Plastic and Reconstructive Surgery: A comprehensive study guide*. Springer, 2016. ISBN-10: 3319180347.
3. **Sharma GK**, Wong BJ. Optical coherence tomography of the larynx: normative anatomy and benign processes. In Wong BJ (ed): *Biomedical Photonics in Otorhinolaryngology – Head and Neck Surgery*. Springer, 2016. ISBN-10: 1493917579.
4. **Sharma GK**, Wong BJ. Optical coherence tomography of the oral cavity and pharynx: normative anatomy and benign processes. In Wong BJ (ed): *Biomedical Photonics in Otorhinolaryngology – Head and Neck Surgery*. Springer, 2016. ISBN-10: 1493917579.
5. **Sharma GK**, Rubinstein M, Betz CS, Wong BJ. Optical coherence tomography of malignancies of the head and neck. In Wong BJ (ed): *Biomedical Photonics in Otorhinolaryngology – Head and Neck Surgery*. Springer, 2016. ISBN-10: 1493917579.

**Peer-reviewed abstracts and poster presentations**

1. Clemo HR, **Sharma GK**, Allman BL, Meredith MA. Auditory projections to visual cortex: synaptic basis for multisensory processing in 'unimodal' visual neurons. *J Vision*. June 30, 2007; 7(9): 864.
2. Clemo HR, **Sharma GK**, Allman BL, Meredith MA. Crossmodal connections underlying subthreshold multisensory processing: Auditory cortical projections to extrastriate visual cortex in cat. *Soc Neurosci Abstr* 2007; 37: 614.13
3. Kakarla UK, **Sharma GK**, Chang SW, Garrett M, Sonntag VK, Theodore N. Surgical treatment of occidiodal vertebral osteomyelitis: experience from a high volume center. *American Association of Neurological Surgeons (AANS)*. May 2, 2009 May 2. Article ID: 54820.
4. Kakarla UK, Abl A, **Sharma GK**, Theodore N. Anterior cervical corpectomy and arthrodesis using polyetheretherketone (PEEK): initial experience in 15 patients. *AANS*. May 2, 2009. Article ID: 54493.
5. **Sharma GK**, Dhillon VK, Masood R, Maceri DR. Overexpression of EphB4, EphrinB2 and EGFR in Papillary Thyroid Carcinoma. *American Academy of Otolaryngology - Head and Neck Surgery Foundation (AAO-HNSF)*. September 29, 2013.
6. **Sharma GK**, Ahuja GS, Jing J, Chen Z, Wong BJ. Optical coherence tomography in pediatric otolaryngology: theory, technology and applications. *Pediatrics 2040: Trends and Innovations for the Next 25 Years*. October 3-5, 2013.
7. **Sharma GK**, Ahuja GS, Hamamoto A, Chen Z, Wong BJ. Frequency domain optical coherence tomography of the pediatric subglottis using 0.7 mm optical probe. *Pediatrics 2040*. October 3-5, 2013.
8. Hamamoto A, **Sharma GK**, Su E, Wang A, Wheatley FC, Ahuja GS, Chen Z, Wong BJ. 3D reconstruction of neonatal subglottis rendered from high resolution optical coherence tomography. *Pediatrics 2040*. October 3-5, 2013.
9. Lazarow F, Ahuja GS, **Sharma GK**, Wang A, Su Erica, Nguyen TD, Loy AC, Chen Z, Wong BJ. Identifying anatomic obstruction in the pediatric upper airway via an emerging imaging modality: optical coherence tomography with a 0.7 millimeter probe. *Pediatrics 2040*. October 3-5, 2013.
10. **Sharma GK**, Armstrong WB, Chen Z, Wong BJ. Long range frequency domain optical coherence tomography in early detection and mapping of oral malignancy: review, preliminary report and future applications. *Chao Family Comprehensive Cancer Center: 2013 scientific retreat*. November 15-16, 2013.
11. Lazarow F, Ahuja GS, **Sharma GK**, Loy AC, Peaks Y, Volgger V, Wang A, Chen Z, Wong BJ. Intraoperative long-range optical coherence tomography as a novel method of imaging the pediatric upper airway. *Society for Ear, Nose and Throat Advances in Children (SENTAC)*. December 7, 2013.
12. **Sharma GK**, Foulad A, Verma SP. A novel device for precise intraoperative measurement of subglottic diameter prior to balloon laryngoplasty. 135<sup>th</sup> annual American Laryngological Association (ALA) meeting at Combined Otolaryngology Spring Meetings (COSM) 2014. May 14-15, 2014.
13. **Sharma GK**, Verma SP. Is nebulized lidocaine adequate anesthesia for transnasal tracheoscopy? *American Bronchoesophagological Association (ABEA) annual meeting at COSM* 2014. May 14-15, 2014.

## Giriraj K. Sharma, MD, MS

14. **Sharma GK**, Ahuja GS, Lazarow F, Wang A, Jing J, Hamamoto A, Pham NS, Dhar V, Uy C, Chen Z, Wong BJ. In vivo high-speed optical coherence tomography of the neonatal subglottis for early identification of subglottic stenosis. American society of pediatric otolaryngology (ASPO) annual meeting at COSM 2014. May 14-15, 2014.
15. **Sharma GK**, Ahuja GS, Lazarow FB, Su E, Nguyen TD, Wiedmann M, Protsenko DE, Jing J, Chen Z, Wong BJ. Office-based long range optical coherence tomography of the pediatric upper airway: objective analysis of airway obstruction. SENTAC 2014. December 4-7, 2014.
16. **Sharma GK**, Ahuja GS, Lazarow F, Su E, Nguyen TD, Wiedmann M, Wang Y, Protsenko DE, Jing J, Elghobashi SE, Chen Z, Wong BJ. Office-based long range optical coherence tomography of the pediatric airway: first report of objective analysis of upper airway obstruction using computational fluid dynamics. Triological Society, 2015 Combined Sections Meeting. Coronado, CA. January 22-24, 2015.
17. **Sharma GK**, Ahuja GS, Odhner D, Tong Y, Wiedmann MT, Jing J, Huoh K, Pham NS, Chen Z, Udupa JK, Wong BJ. A novel image analysis approach to optical coherence tomography of the neonatal airway to quantify early structural and histopathological changes associated with neonatal subglottic stenosis: relative fuzzy connectedness. ASPO annual meeting at COSM 2015. Boston, MA. May 24-26, 2015.
18. **Sharma GK**, Sofferman RA, Armstrong WB. Evaluation of the American College of Surgeons thyroid and parathyroid ultrasound skills-oriented course and surgeon-performed head and neck ultrasound practice patterns: results of a web-based survey. Triological Society 119<sup>th</sup> annual meeting at COSM 2016. May 20-21, 2016.
19. **Sharma GK**, Ngo T, Badger C, Tripathi PB, Chen Z, Wong BJ. Optical coherence tomography imaging of the internal nasal valve during inspiration: correlation of cross-sectional area and intranasal pressure. Triological Society, 2019 Combined Sections Meeting. Coronado, CA. January 24-26, 2019.
20. **Sharma GK**, Dunn B, Bhandarkar ND, Wong BJ. Telelecture educational series in facial plastic and reconstructive surgery: bridging the geographic and knowledge gap. AAFPRS Spring Meeting at COSM 2019. Austin, TX. May 1-2, 2019. **Submitted; pending decision.**

## Presentations

### Peer-reviewed platform lectures

1. "HIPAA and its far-reaching impact on patients' rights". The Triological Society, Eastern Section annual meeting. New York, NY. January 24, 2004.
2. "Digital 3-D modeling of the pediatric subglottis based on optical coherence tomography: a preliminary investigation". Biomedical Optics Conference (BIOS) 2014 at SPIE Photonics West. San Francisco, CA. February 1-6, 2014.
3. "High-speed swept source optical coherence tomography and optical Doppler tomography of vibrating vocal folds". American Society for Laser Medicine & Surgery (ASLMS). Phoenix, AZ. April 5, 2014.
4. "In vivo high-speed optical coherence tomography of the neonatal subglottis for early identification of subglottic stenosis". American Society of Pediatric Otolaryngology (ASPO) 2104 annual meeting at Combined Otolaryngology Spring Meetings (COSM). Las Vegas, NV. May 18, 2014.

## Giriraj K. Sharma, MD, MS

5. "Office-based long-range optical coherence tomography of the pediatric upper airway: objective analysis of airway obstruction". The Society for Ear, Nose and Throat Advances in Children (SENTAC) 2014 annual meeting. St. Louis, MO. December 4-7, 2014.
6. "Vertical cavity surface emission laser-based optical coherence tomography and optical Doppler tomography of the vocal folds". BIOS 2015 at SPIE Photonics West. San Francisco, CA. February 7-8, 2015.
7. "A novel image analysis approach to Fourier-domain optical coherence tomography of the neonatal airway to quantify early structural and histopathological mucosal changes associated with neonatal subglottic stenosis: relative "fuzzy" connectedness". ASPO 2015 annual meeting at COSM. Boston, MA.
8. "Incidence of post-operative hemorrhage following total tonsillectomy and coblation intracapsular tonsillectomy: results of a single, tertiary care pediatric hospital". SENTAC 2017 Annual meeting. Toronto, CA. December 1-3, 2017.
9. "High-resolution in vivo coronal cross-sectional imaging of the vocal fold during phonation using long-range optical coherence tomography: first report of a novel diagnostic tool to evaluate vocal fold morphometry and kinematics". American Laryngological Society 2018 annual meeting at COSM. April 19, 2018.

### Lectures, local

1. Anatomical bases for auditory projections to suprasylvian visual areas in the cat cerebral cortex. Graduate dissertation. Department of Physiology, Virginia Commonwealth University. Richmond, VA. April 28, 2006.
2. Management of frontal sinus and naso-orbito-ethmoid fractures. Grand rounds. Department of Otolaryngology – Head and Neck Surgery, University of California Irvine Medical Center. Orange, CA. April 25, 2018.

### Additional Experience & Leadership

Clinical research associate Department of Interventional Radiology George Washington University	2009 – 2011
Clinical research associate Department of Neurological Surgery George Washington University	2008 – 2010
President, University chapter American Medical Student Association George Washington University	2008 – 2009
Chair, Surgery Committee American Medical Student Association George Washington University	2007 – 2008
Clinical research associate Department of Neurological Surgery Barrow Neurological Institute (Phoenix, AZ)	2008

## Giriraj K. Sharma, MD, MS

Clinical research associate 2007  
Department of Surgery  
Johns Hopkins University (Baltimore, MD)

Research assistant 2003 – 2004  
Department of Otolaryngology - Head and Neck Surgery  
University of Pittsburgh Medical Center (Pittsburgh, PA)

### **Personal Interests and Activities**

City of Irvine Soccer League, men's Division A (Irvine, CA) 2014 – 2016

South Orange County Soccer league (Laguna Beach, CA) 2013 – present

Washington International Soccer League, men's Diamond division  
(Washington, DC) 2006 – 2011

Indian classical music (tabla) 1990 – present

Misc: Photography, Videography, Travel, Writing, Community / youth mentorship