

# LARYNGOLOGY

## 1. BRIEF DESCRIPTION OF TRAINING

Exposure to clinical laryngology is provided in each of the four ORL years over the course of several rotations in a graduated approach.

- MEE General Otolaryngology Rotation – PGY2 and PGY3 years
- Pediatric Laryngology – MEE PGY-2 rotation and Boston Children’s Hospital PGY-3 rotation
- Longwood Rotation – PGY2 through PGY5 years
- A senior rotation (PGY-5) in Sinus/Laryngology/Endocrine provides exposure to more complex and advanced Laryngology procedures at MEE as well as professional voice and neurolaryngology in the clinic setting at MEE.

Phonosurgical Simulation course

- Offered for PGY-3 and PGY-4 year.
- Half day course with micro-phonosurgical training using porcine larynges.

## 2. CORE BASIC SCIENCE KNOWLEDGE

- Anatomy and anatomical variations of the larynx.
- Anatomy of adjacent structures including the central neck and physiologically important structures related to voice, swallowing and respiration.
- Innervation and control of the intrinsic and extrinsic laryngeal musculature.
- Sensory and autonomic regulation of the larynx.
- Physiology of the regulation of swallowing and respiration.
- Physiology of voice production.
- Developmental anatomy of the larynx.
- Tissue effects of laser treatment

## 3. CORE CLINICAL KNOWLEDGE

Pathogenesis, pathophysiology and treatment of common laryngeal disorders

- Benign mucosal pathology of the vocal folds.
- Epithelial disorders of the larynx.
- Congenital and developmental defects of the larynx
- Neurological disorders which affect the larynx
- Vocal fold paralysis
- Laryngopharyngeal reflux
- Acute infectious conditions of the larynx
- Chronic infectious conditions of the larynx
- Structural abnormalities
- Laryngeal and neck trauma
- Voice and swallowing disorders
- Structural and functional upper airway pathology

- Intubation and airway assessment
- Benign tumors of the larynx
- Malignant tumors of the larynx
- Post-laryngectomy voice and swallowing rehabilitation

#### Diagnosis and Management of laryngological emergencies

- Acute airway obstruction
- Laryngeal trauma
- Caustic injury
- Aerodigestive tract foreign bodies
- Stridor
- Sudden hoarseness
- Bilateral vocal fold immobility
- Difficult intubation

#### **4. DIAGNOSTIC SKILLS**

- Ability to obtain a thorough history
- Ability to perform a complete otolaryngological physical examination
- Ability to obtain a focused voice history
- Ability to perform a detailed laryngeal examination including perceptual auditory analysis
- Ability to perform laryngeal endoscopic and videostroboscopic examination with recognition of functional and anatomic pathology
- Cost-effective and safe implementation of additional diagnostic tests
  - Imaging studies
  - Biopsy
  - Microbiology
  - Allergy testing
  - Reflux testing
  - Voice testing (Objective acoustic and aerodynamic testing)
- Ability to create a rational differential diagnosis for various laryngological complaints.

#### **5. MEDICAL MANAGEMENT**

- Understanding of the prevention of laryngeal disease
- Understanding of medical management of common laryngeal disorders.
  - Infectious laryngitis
  - Laryngopharyngeal reflux
  - Allergic laryngitis
  - Hoarseness
  - Dysphagia
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- Develop proper referral skills.
  - Speech and language pathology and voice therapy
  - Pulmonology

- Rhinology
- Neurology
- Allergy
- Gastroenterology
- Basic knowledge of Videostroboscopy and voice therapy.

## **6. SURGICAL SKILLS**

- Competence in assessing patient candidacy for surgical treatment of laryngological disorders
  - Appropriate patient selection
  - Assessment of co-morbidities
  - Appropriate pre-operative medical management
  - Appropriate pre-operative testing (i.e. imaging studies, biopsy, etc)
  - Assessment of patient expectations
- Competence in intra-operative skills for the procedures listed below
- Competence in management of intra-operative and post-operative complications
- Competence in post-operative care of laryngology patients

## **7. SPECIFIC SURGICAL PROCEDURES**

Upon the completion of residency training, the resident should be competent in the following laryngological procedures:

- Diagnostic laryngeal endoscopy
- Direct laryngoscopy with biopsy/excision
- Operative endoscopic laser surgery
- Phonosurgery
- Rigid bronchoscopy and esophagoscopy with biopsy/excision
- Endoscopic dilation for airway or swallowing
- Removal of foreign bodies
- Suspension microscopic laryngoscopy
- Medialization thyroplasty
- Endoscopic operative injection augmentation
- Tracheo-esophageal puncture
- Total laryngectomy

Upon the completion of training, the resident should have a working knowledge of, but may require additional training before independently performing, the following procedures:

- Office based laser procedures
- Videostroboscopy
- Transnasal esophagoscopy

- Advanced or revision suspension microlaryngoscopic phonosurgery with mucosal flap reconstruction
- Laryngeal EMG
- Laryngeal chemodenervation (botulinum toxin injections)
- Office based injection vocal fold augmentation
- Airway reconstruction
- Complex endoscopic airway surgery
- Laryngotracheal reconstruction
- Laryngofissure
- Tracheal resection
- ORIF of complex laryngeal fractures
- Arytenoid adduction or arytenopexy

## 7. GRADUATED EXPERIENCE

A graduated experience and increased responsibilities are expected with advancing years of ORL training. The resident will assume increasing responsibility for diagnosis, medical management, and surgical therapy for laryngeal disorders.

By the end of the **PGY-2 year** the resident should be able to demonstrate:

- Competence in basic diagnostic skills as well as the basic science and clinical core knowledge in laryngology
- Basic familiarity with the use of the flexible laryngoscopy in the clinic, including atraumatic application of local anesthesia and topical nasal decongestants.
- Basic familiarity with imaging studies for laryngologic disease

By the end of the **PGY-3 year**, the resident should be able to demonstrate:

- Competence in the performance of diagnostic laryngeal endoscopy, direct laryngoscopy and biopsy, rigid bronchoscopy and esophagoscopy, tracheotomy.
- Competence in the postoperative management of patients who have undergone laryngeal surgery

By the end of the **PGY-4 year**, the resident should be able to demonstrate:

- Competence in the performance of suspension microlaryngoscopy, medialization thyroplasty, Endoscopic injection/augmentation.
- Competence in the management of emergent airway situations.

By the end of the **PGY-5 year**, the resident should be able to demonstrate:

- Competence in the use of lasers in Laryngology, Endoscopic dilation, phonosurgery, laryngectomy.
- Familiarity with advanced laryngologic techniques, including management of laryngeal fractures, laryngotracheal and tracheal resection, transnasal esophagoscopy, videostroboscopy, office based injection and laser procedures, laryngeal EMG, and advanced or revision suspension microlaryngoscopic phonosurgery

## **8. ASSESSMENT OF SKILLS**

An OSAT evaluation is not currently in use for the Laryngology rotation.

## **9. ABOto CORE SURGICAL PROCEDURES**

Core surgical procedures that are being assessed by the ABOto, based on the post-graduate year that competency was obtained

- Direct laryngoscopy with manipulation (biopsy, foreign body removal, dilation)
- Basic microlaryngeal surgery

## **10. EDUCATIONAL CONFERENCES IN LARYNGOLOGY**

Attendance is mandatory for all residents

- Laryngology Voice Rounds – The General ORL/H&N PGY 3 resident is required to be present. The S/L/E PGY-5 resident on the Laryngology rotation is required to be present.
- Laryngology Core Curriculum

Attendance is optional

- Multicenter televideo conference – case based program involving Vanderbilt and Drexel laryngology divisions.
- Laryngology Grand Rounds and Journal club.
- CME course – Updates in Laryngology

## **11. MILESTONES ASSESSMENT**

- Aerodigestive Tract Lesions (patient care)
- Dysphagia-Dysphonia (medical knowledge)
- Please see the below website for details  
<https://www.acgme.org/acgmeweb/Portals/0/PDFs/Milestones/OtolaryngologyMilestones.pdf>

## **12. SUGGESTED READING**

- Fried M and Ferlito A. The Larynx. Plural Publishing 2009.
- Ossof R, Shapshay S, Woodson G, Netterville J. The Larynx. Lippincott Williams and Wilkins 2002.
- Chapters concerning the larynx, voice and swallowing in one of the comprehensive textbooks in otolaryngology, such as Cummings, Fredrickson, Krause, Richardson, Schuller, Otolaryngology-Head and Neck Surgery, Mosby Co. 1998.
- Applicable readings from AAO-HNS Home Study Course and SIPACs.