

GENERAL OTOLARYNGOLOGY

HEAD and NECK SURGICAL ONCOLOGY

1. BRIEF DESCRIPTION

Training in general otolaryngology, upper aerodigestive tract endoscopy and head and neck oncologic surgery begins and continues through all four years of the residency program, with a traditional evolution of emphasis in the senior residency years.

- MEE General ORL/Head and Neck Rotation - PGY 2,3,4,5
- Longwood Rotation - PGY 2,3,4,5

The residency training involves mentored interactions in the operating room and outpatient settings, supervised handling of emergencies and complications, daily inpatient rounds, clinical and didactic conferences, and both directed and self-initiated readings.

MEE General ORL/Head and Neck Rotation

- The PGY-2 resident spends time in the MEE ED, outpatient clinic (½ day of Otolaryngology, ½ day of Rhinology, ½ day of Head and Neck clinic), and the operating room
- The PGY-3 resident on the General ORL/H&N rotation is the coordinator and leader of the inpatient consult service at MGH.
- The PGY-4 resident spends time in the outpatient clinic (½ day of H&N clinic)
- The PGY-5 (chief resident) is the coordinator and leader of the inpatient ORL service at MEE.

2. CORE BASIC SCIENCE KNOWLEDGE

The anatomic preview of the subspecialties noted above includes the oral cavity, pharynx (naso-, oro-, hypo-), larynx, tracheobronchial tree, esophagus, salivary glands, thyroid and parathyroid glands, lips, cervicofacial and scalp skin, and the deeper cervical tissues, including vascular, neural, muscular, osseous, lymphatic and lymph nodal.

- Anatomic structures of the head and neck including the structures specific to oral cavity, nasopharynx, oropharynx, hypopharynx, larynx, trachea, esophagus, salivary glands, thyroid and parathyroid glands, cervicofacial and scalp skin, cervical facial compartments, muscles of the neck, anterior and lateral skull base.
- Anatomic course and function of cranial nerves I-XII
- Major blood vessels of the head and neck region with specific attention to branches of the external carotid artery and the extracranial course of the internal carotid artery
- Head and neck embryology as it applies to the clinical presentation of various masses, congenital malformations, and potential pathways of spread for infection.

- Physiology of oral cavity function, voice production, swallowing, and respiration
- Comprehension of head and neck related histology, cytology and microbiology
- Basic knowledge of head and neck related microbiology and pharmacology relevant to treatment.
- Appreciate the impact of the immune system on head and neck disease processes.
- Basic understanding of principles of radiation therapy
- Basic understanding of principles of chemotherapy
- Basic biology of squamous cell carcinogenesis

3. CORE CLINICAL KNOWLEDGE

- General clinical principles of cardiopulmonary, renal, hepatobiliary, gastrointestinal, genitourinary, vascular, endocrinologic, immunologic and hematologic medicine will have an active role in ORL specialty training and patient management both in the outpatient and inpatient setting.
- Familiarity with the pathophysiology, diagnosis, and management of the numerous ORL manifestations of systemic diseases, including sleep disorders, HIV, headache, pain, infectious and non-infectious inflammatory disorders, ambiguous clinical presentations and many others too numerous to list
- Standard preoperative evaluation including cardiopulmonary evaluation, diabetic considerations and perioperative antibiotic use
- Standard postoperative care including issues related to wound healing, nutrition, recognition and management of complications both systemic and head and neck specific.
- Pathophysiology, diagnosis, and management of neoplasm of the head and neck region

4. DIAGNOSTIC SKILLS

- Ability to obtain a complete and thorough history as well as head and neck focused history
- Ability to perform a thorough head and neck exam, including indirect mirror examination, fiberoptic examination of the nasopharynx, oropharynx, hypopharynx, and larynx, palpation of the neck including all lymphatic regions, larynx, and thyroid.
- Recognition of relevant comorbidities as they may relate to a disease diagnosis at presentation and potential impact on surgical management.
- Cost-effective and safe implementation of additional diagnostic testing
 - Imaging: x-ray, CT, MRI, US, PET, thyroid uptake, sestamibi, octreotide scanning
 - Biopsy: office based, operative, FNA, image guided FNA
 - Microbiology: timing and type of cultures
 - Immunologic assessment of systemic inflammatory conditions presenting in the head and neck
 - Needle aspiration
 - Sleep studies
 - Endocrine function tests

- Appropriate utilization of consultations including: voice/speech therapy, swallowing therapy, radiation oncology, medical oncology, neurosurgery, thoracic surgery and vascular surgery
- Generate an appropriate and comprehensive differential diagnosis based on the diagnostic work up.

5. ADULT ORL MEDICAL MANAGEMENT

An enormous number of routine office, emergency and non-surgical conditions fall in the purview of ORL. Over the course of the training program, residents will be expected to become adept in the diagnosis, triage and management of the following:

- Emergency/Trauma
 - Airway obstruction
 - Epistaxis
 - Craniofacial, mandibular and laryngeal fractures
 - Soft tissue injury, blunt and/or perforate
 - Head trauma
 - Acute infections, including deep neck and odontogenic
 - Foreign bodies and caustic ingestion
- Infections of head and neck sites
- Neoplastic diseases and mass lesions of head and neck sites
 - Benign
 - Malignant
 - Congenital masses/cysts
 - Tumor-like conditions
 - Mucosal, cutaneous, soft tissue, and osseous processes
- Thyroid and parathyroid disorders
- Non-neoplastic and inflammatory conditions of head and neck sites
 - Acute
 - Chronic
 - Oral mucosal diseases and related dentistry
- Sleep disorders
- Voice, speech and swallowing disorders and rehabilitation

6. SURGICAL SKILLS

- Competence for assessing appropriate operative candidacy
 - Appropriate preoperative assessment including appreciation of medical comorbidities and need for medical and / or anesthesia consultation
 - Providing adequate and appropriate informed consent including expectations of surgical outcomes and course.
 - Preoperative airway assessment and airway management planning.
- 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

7. SPECIFIC SURGICAL PROCEDURES

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

- Endoscopy - diagnostic and therapeutic
 - Direct laryngoscopy, including microlaryngoscopy, laser applications
 - Phonosurgery
 - Esophagoscopy, including dilation, foreign body removal
 - Bronchoscopy, including aspiration, foreign body removal
 - Airway management, including fiberoptic and emergency intubation
 - Zenkers diverticulotomy and cricopharyngeal myotomy
- Excision of benign and malignant skin lesions with various repair and reconstructive techniques, including lip
- Resection of lesions of the oral cavity and oropharyngeal regions including transoral and transcervical approaches
- Wound repair and debridement, including skin grafts
- Tonsillectomy, adenoidectomy, UPPP, sleep and snoring procedures
- Open neck procedures including mass excisions, access to great vessels and deep neck spaces for abscess drainage, vascular repair, cricopharyngeal myotomy and diverticula management, and lymphadenectomy w/ variations.
- Salivary gland surgery including superficial and total parotidectomy with and without facial nerve preservation, submandibular gland resection, sublingual gland resection
- Thyroid and parathyroid surgery
- Tracheotomy
- Voice restoration procedures

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

- Mandibulotomy, mandibulectomy, maxillectomy, w/ variations
- Laryngeal procedures for neoplastic, traumatic and inflammatory conditions
 - (Partial and total laryngectomy, laryngofissure, laryngotracheal reconstruction, tracheal resection, all w/ variations)
- Combined radical head and neck oncologic procedures
- Major head and neck reconstruction, including rotation, pedicle and free flaps
- Osseous reconstruction and prosthetic techniques
- Resection of parapharyngeal space tumors
- Open approaches to the anterior and lateral skull base
- Laser wavelength applications, including YAG, Argon, KTP, and phototherapy
- Skull base surgery, including dural repair
- Image-guided procedures - open magnet MRI, CT-guided, US-guided

8. GRADUATED EXPERIENCE/INCREASED RESPONSIBILITY

A graduated experience and increase in responsibility are expected with advancing years of ORL training. The resident will assume increasing responsibility for fund of

knowledge, diagnosis, medical management and surgical treatment for general otolaryngology and head and neck oncology patients.

During the **PGY2 & 3 year**, the resident should be able to demonstrate

- Competence in basic diagnostic skills as well as the basic science and clinical core knowledge in General Otolaryngology/Head and Neck Oncology
- Competence in the fundamentals of the physical exam, history, and routine diagnostic procedures
- Familiarity with basic text materials and relevant medical literature
- A beginning understanding of the translation of relevant basic science to the clinical setting
- Working familiarity with related disciplines and adjuvant diagnostic testing and procedures, including their use and interpretation
- Basic familiarity with inpatient and outpatient evaluation and care.
- The ability to evaluate and triage urgent and emergency conditions
- Ability to identify and treat routine emergencies
- Basic familiarity with surgical procedures – including ability to perform more simple and routine surgeries as well as assist on complex, advanced or specialized procedures

During the **PGY4 & 5 year**, the resident should be able to demonstrate

- Refined understanding and application of fundamentals
- Refined use and critical assessment of relevant medical literature
- Refined understanding of translational clinical research
- More in-depth understanding of related disciplines and interventional alternatives
- Familiarity with specialized patient care and supervision of routine patient care issues
- Ability to Evaluate and treat specialized emergencies
- Competent surgical technique in complex, advanced or specialized procedures
- Ability to supervise and train junior residents in more simple and routine surgeries
- Development of team supervisory and administrative skills

8. ASSESSMENT OF SKILLS

An OSAT evaluation has been incorporated into the PGY-3 and PGY-4 Head and Neck rotation, assessing tracheotomy and thyroidectomy. It is each resident's responsibility to assure that the OSAT is completed during the rotation.

- PGY – 3 Tracheotomy
- PGY – 4 Thyroidectomy

9. ABOTO CORE SURGICAL PROCEDURES

- Neck dissection (selective, radical)
- Oral cavity resection
- Parotidectomy

- Thyroidectomy
- Tracheotomy

10. RECOMMENDED READING

- Myers/Suen - Cancer of the head and neck
- Petruzelli – Practical Head and Neck Oncology
(The above 2 texts offer a comprehensive text on each of the head and neck subsites as well as text on nonsurgical modalities for the treatment of head and neck cancer)
- Montgomery - Surgery of the larynx, trachea, esophagus, and neck. (Highlight Chapters 4 – 16)
- Randolph – Surgery of the Thyroid and Parathyroid
- Multivolume general texts
 - Cummings
 - Bailey
 - Paparella
- Journals: Laryngoscope, Head and Neck, Journal of Clinical Oncology
Home study course - applicable readings