



YENEPOYA

(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956

Accredited by NAAC with 'A' Grade

YENEPOYA MEDICAL COLLEGE

PROGRAM AND PROGRAM SPECIFIC/COURSE OUTCOMES

POSTGRADUATE PROGRAM

MS OTORHINOLARYGOLOGY (ENT)

ATTESTED

Dr. Gangadhara Somayaji K S
Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore 575 018, Karnataka.

PROGRAM OUTCOMES
POSTGRADUATE PROGRAM
MS OTORHINOLARYGOLOGY (ENT)

At the end of postgraduate training the student should be able to:

- PO1 Practice his specialty ethically keeping in mind the requirement of the patient, community and people at large.
- PO2 Demonstrate sufficient understanding of basic sciences related to his specialty and be able to integrate such knowledge in his Clinical practice.
- PO3 Diagnose and manage majority of conditions in his specialty (clinically and with the help of relevant investigations)
- PO4 Plan and advise measures for the promotive, preventive, curative and rehabilitative aspects of health and diseases in the specialty of ENT.
- PO5 Should be able to demonstrate his cognitive skills in the field of ENT and its ancillary branches during the formative and summative evaluation processes.
- PO6 Play the assigned role in the implementation of National Health Programs
- PO7 Demonstrate competence in basic concepts of research methodology and writing thesis and research papers.
- PO8 Develop good learning, communication and teaching skills.
- PO9 Demonstrate sufficient understanding of basic sciences and the clinical applications related to the specialty to be able to integrate this knowledge into Clinical practice. Acquire in-depth knowledge in the subject including recent advances.
- PO10 Demonstrate that he is fully conversant with the latest diagnostics & therapeutics available.

PROGRAM SPECIFIC/COURSE OUTCOMES

POSTGRADUATE PROGRAM MS OTORHINOLARYGOLOGY (ENT)

A. Cognitive Domain

At the end of training, the student should be able to demonstrate ability to practically apply knowledge gained during training period. This would include the following:

Basic Sciences related to Otolaryngology

1. Physiology- Mechanism of perception of smell and taste, mechanism of breathing and voice production, lacrimation, deglutition and salivation. Functional tests of the nose and paranasal sinuses, mechanism of cough and sneezing.
2. Physics of sound, theories of hearing, mechanism of perception of sound and speech production, physiology of equilibrium and cerebral function. Physiology of brain in connection with hearing, speech, smell and phonation. Audiologic tests like audiometry, impedance, evoked potentials, OAE, Speech audiometry.
3. Physiology of larynx, tracheobronchial tree and oesophagus - Histology of mucous membranes, internal ear and other associated organs and structures, nose, PNS NPx, Larynx, Tracheo-Bronchial tree, Lymphoepithelial system. Mechanism of immune system/immunology and genetics.
4. Anatomy-Embryogenesis of ear, nose and throat including palate and the larynx, Oesophagus, trachea and lungs, tongue, salivary gland Head and Neck and skull base etc.
5. Parapharyngeal spaces in the neck including connective tissue barriers of larynx.
6. Applied anatomy of the skull bones, accessory sinuses, external, middle and inner ears, nose, PNS, nasopharynx, meninges, brain, pharynx, larynx, trachea and bronchi, lungs, pleurae, oesophagus and the mediastinum.
7. Anatomy of all cranial nerves with their functions.

Principles and Practices of Otolaryngology, Audiology and Speech Pathology

1. Clinical Methodology as applied to ORL HN diseases in adult and children and the accessory sinuses, diagnosis and surgical treatment of diseases of nose, throat and ear in adult and children. Prevention and treatment, infectious diseases of Otolaryngology and

Head Neck region. Circulatory and nervous disturbances of the nose, throat and ear and their effects on other organs of the body. Deformities, injuries sinus infections, polyps and the tumors of the nose, and paranasal sinuses.

2. Examination of the ear, deafness and allied diseases, complications of diseases of the ear. Injuries, tumors, nervous and circulatory neurological disturbances of the ear. Diagnosis and treatment of tinnitus and vertigo. Diagnosis and rehabilitation of the Hearing handicapped including, dispensing of hearing aid other vibrotatile aids.
 - Surgical pathology of Otolaryngology and Head Neck region.
 - Basic knowledge of anaesthesia as related to ENT.
 - Examination of diseases of children (Paediatric ORL) in connection with throat and larynx. Neurological and vascular disturbances. Congenital and neonatal stridor.
 - Pathology of various diseases of the larynx and throat, tracheo- bronchial tree and their causative organisms.
 - Indications and various techniques of direct laryngoscopy, nasal endoscopy. Bronchoscopy and oesophagoscopy, including microlaryngoscopic procedures.
 - Reading of radiograms, scans, audiograms, nystagmograms and tympanograms in connection with ENT diseases/disorders.
 - Special apparatus for the diagnosis and treatment of the diseases of ear, nose and throat including audiometer, BERA, Speech analyser etc.

Recent advances in Otolaryngology and Head Neck surgery

1. Recent developments in the diagnosis, pathogenesis and treatment of the ENT diseases
2. The knowledge of the frontiers of the oto-laryngology and lateral skull base surgery
3. Rhinoplasty, endoscopic sinus surgery, and anterior cranial fossa surgery
4. Knowledge of LASERS and fibre optics
5. Other methods of managing Hearing loss
6. Implantable hearing aids cochlear implants
7. Phonosurgery
8. Etiology and Managements of sleep apnoea/snoring
9. Hypophysectomy and optic nerve decompressions
10. Immunotherapy and modalities of the gene therapy

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11. Newer techniques for Radiotherapy including, use of gamma knife for treatment of Intracranial tumors and other malignancy
12. Chemotherapy of cancer

General Surgical Principles and Head-Neck Surgery

1. General Surgery, Head and Neck oncology, and Medicine as applicable to the ENT disorders/diseases. Surgery of congenital deformities of nose, ear (Pinna) and trachea/oesophagus etc.
2. Radiology, Imaging – computed tomography and magnetic resonance imaging, (MRI) and intervention radiology and angiography as related to ENT
3. General Pathologic aspects such as wound healing and also pathology and Pathogenesis of ENT diseases, Pharmacology, molecular biology, genetics, cytology, haematology, and immunology as applicable to otolaryngology
4. General Principles of faciomaxillary traumatology and neck injury
5. Plastic Surgery as applicable to Otolaryngology

B. Affective Domain

1. The student will show integrity, accountability, respect, compassion and dedicated patient care. The student will demonstrate a commitment to excellence and continuous professional development.
2. The student should demonstrate a commitment to ethical principles relating to providing patient care, confidentiality of patient information and informed consent.
3. The student should show sensitivity and responsiveness to patients' culture, age, gender and disabilities.
4. The student should be able to choose the required investigations to enhance the attitude, communicative skills, including dealing with patient's relatives with the required empathy, adapt to changing trends in education, learning methods and evolving new diagnostic and therapeutic techniques in the subject of ENT.

C. Psychomotor Domain

By the end of the training, a student should be able to demonstrate his skills in:

1. Taking a good history and demonstrating good examination techniques.
2. arrive at a logical working diagnosis, differential diagnosis after clinical examination and order appropriate investigations keeping in mind their relevance (need based) and thereby provide appropriate care that is ethical, compassionate, responsive and cost effective and in conformation with statutory rules.
3. Should be able to perform and demonstrate the practical skills in the field of ENT including the following:
 - Examination of the ear, nose and throat oral cavity examination
 - Clinico-physiological examination and evaluation of the audio-vestibulo neurological system
 - Examination of the larynx and the throat including flexible endoscopy, stroboscopy, voice analysis and the clinico-physiological examination of the speech
 - Examination of the otological and audiological system including Tuning fork testing, audiological evaluation, micro and otoendoscopy
 - Clinical and physiological evaluation of the nose and paranasal sinuses including nasal endoscopy and olfactory evaluation
 - Examination of the neck and its structures
4. Should demonstrate and perform various therapeutic skills related to the speciality such as :
 - Tracheostomy
 - Anterior/ posterior nasal packing
 - Ear Packing and Syringing
 - Foreign body removal from air nose and throat
 - Airway management including basic life support skills, Cardiopulmonary resuscitation, intubation, homeostasis maintenance, IV alimentation and fluid, electrolyte maintenance and principles of blood transfusion alimentation including Nasogastric feeding, gastrostomy –
 - Wound suturing, dressings and care of the wounds


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- Basic principles of rehabilitation
 - Common procedures like FNAC, biopsy, aspiration from serous cavities, lumbar puncture etc.
5. Should understand principles of and interpret X-rays/CT/MRI, audiograms, ENG, BERA, OAE, ultrasonographic abnormalities and other diagnostic procedures in relation to the speciality
 6. Should have observed/performed under supervision the various surgical procedures in relation to the speciality.

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