



**AMRITA**  
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**Program**  
**M.Ch HEAD AND NECK**  
**SURGERY**

(Revised with effect from 2016-2017 onwards)

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# Core curriculum summary

The core curriculum includes didactic lectures and seminars on basic tumor biology, pathology, anatomy, molecular biology and genetics, clinical research methods, radiation oncology, medical oncology and different aspects of head and neck oncology and general head and neck surgery including benign pathology.

- Attend weekly interdisciplinary Tumor Board
- Clinical and surgical training as per the log book requirements
- Elective rotations (one to two months) with radiation oncology, medical oncology, pathology, ENT, neurosurgery, speech and swallowing therapy, pain and palliation and prosthetics.
- Completion of at least one research project that result in peer-reviewed publications
- Attendance in national oncology conferences once a year with paper presentations

## Program Outcomes

- PO1 Offer to the community, the current evidence based "standard of care" in Head & Neck cancer diagnosis and Surgical therapy
- PO2 Utilize the knowledge and skills acquired in allied specialties such as Pathology , Radiology, Radiation Oncology and Medical Oncology.
- PO3 Undertake Head & Neck diagnostic responsibilities and participate in the patient centered management decision making processes
- PO4 Keep himself/herself abreast of all recent developments and emerging trends in the field of Head & Neck Surgery/Oncology
- PO5 Evaluate his/her professional activities, educational needs and select appropriate learning resources periodically.
- PO6 Deal with general principles and practical problems related to Head & Neck Oncology
- PO7 Utilize the knowledge and skills from subspecialties like Reconstructive Surgery, Skull Base Surgery, Transoral Laser Microsurgery, Robotic Head & Neck Surgery and Rehabilitation of Speech, Voice and Swallowing
- PO8 Be aware of his or her own limitations to the application of the specialty in situations which warrant referral to major centers or individuals more qualified to treat.
- PO9 Contribute as an individual/ or in a group or institution towards the fulfillment of national objectives with regards to prevention of Head & Neck cancers
- PO10 Effectively communicate with patients or relatives so as to educate them sufficiently and give them the full benefit of informed consent to treatment and ensure compliance.
- PO11 Effectively communicate with colleagues.

- PO12 Ability to be an integral member of Multi Disciplinary Team to help in patient centered decision making process
- PO13 Effectively contribute to Head and Neck Research
- PO14 Ability to be competent in the management of Benign Head & Neck diseases
- PO15 Ability to manage recognise and manage complications of Head & Neck cancer treatment

## Program Specific Outcomes

- PSO1 Ability to independently perform extirpative surgery for Head & Neck cancer
- PSO2 Ability to effectively reconstruct a head and neck cancer defect
- PSO3 Ability to effectively rehabilitate a head and neck cancer patient with regards to speech, voice and swallowing
- PSO4 Perform daily Out Patient services including patient screening and disease determination.
- PSO5 Perform OPD investigative tests like diagnostic nasal endoscopy, video laryngoscopy, nasopharyngoscopy, oral cavity and nasal cavity biopsies.
- PSO6 Perform independently minor head & neck procedures like Tracheostomy tube and Naso Gastric tube insertion, Pharyngeal dilatation, Cauterization of Granulations, Debridement, Voice prosthesis insertion
- PSO7 Manage Head & Neck emergencies independently
- PSO8 Participate in community out reach activities like screening camps and public education.
- PSO9 Participate in department research activities and national trials
- PSO10 Prescribe medications for various head and neck symptoms and follow up patients to understand outcomes.
- PSO11 Present original research article in State/National/International conference.
- PSO12 Teach post graduates, undergraduates and research scholars.

## Details of the core curriculum

### Didactic lectures and seminars

#### Year 1 (Semester – I)

##### **Part A**

- Molecular cell biology of cancer
- Mechanism of Carcinogenesis
- Targeted therapy
- Gene therapy in HNSCC
- Clinical Research Methods
  - Developing hypothesis and planning research project
  - Designing a clinical research project
  - Data collection and monitoring

- Ethics in biomedical research

#### Part B

- Applied head and neck anatomy
- Principles of radiation therapy.
- Principles of chemotherapy
- Head and neck radiology

### Year 1- Semester – II

#### Part A

- Lip and oral cavity
- Benign cysts and tumors of the jaw
- Management of Mandible
- Oropharynx

#### Part B

- Hypopharynx
- Supraglottic Larynx
- Glottic Larynx
- Subglottis and trachea
- Basic plastic surgery principles

### Year 2: Semester III

#### Part A

- Salivary gland
- Paranasal sinus
- Parapharyngeal space
- Nasopharynx

#### Part B

- Management of Neck
- Thyroid
- Parathyroid
- Occult Primary

### Year 2: Semester IV

#### Part A

- Nutritional support
- Anterior skull base tumors
- Lateral skull base tumors
- Management of cancer pain

- Specialized care of the terminally ill

**Part B**

- Lips reconstruction
- Oral cavity reconstruction
- Mandible reconstruction
- Sarcomas of head and neck

Year 3 : Semester V

Part A

- Reconstruction of soft tissue defects of face
- Nose reconstruction
- Pharynx reconstruction
- Skull base reconstruction

Part B

- Speech and swallowing therapy
- Tracheo-esophageal prosthesis
- Prosthetic rehabilitation
- Pediatric tumors of head and neck

Year 3 Semester VI

Part A

- Glomus tumors
- Acoustic schwannoma
- Chemo prevention of HNSCC
- Epidemiology of cancer

Part B

- Skin tumors of head and neck
- Melanoma of head and neck
- Lymphoma of head and neck
- Granulomatous and lymphoproliferative disease of head and neck

## **Detailed structure of the 3 year training programme**

### **Year one**

Head and Neck Surgery	-	8 months
Rotation postings to		
ENT/Surgical Oncology	-	1 month
Radiation Oncology	-	1 month
Medical Oncology	-	1 month
Pain and Palliation	-	1 month

### **Year two**

Research	1 month
Reconstructive surgery	6 months
Head and neck surgery	2 months (outside centers)
	3 months

Apart from the one month spent in the research lab which is intended to give the trainee preliminary acquaintance with basic sciences research methodology and allowing them to choose a project of their own, one day in the week shall be set apart each week for research for each trainee.

### **Year Three**

Head and Neck Surgery	6 months
Head and neck Surgery/ Reconstructive surgery	6 months

One day each week will be set apart for research/academics and publications for each trainee

## **Hands on Training for MCh Head and Neck Surgery Trainees**

During the three year training period it is envisaged that the trainees will have adequate exposure in patient evaluation and decision making, medical and surgical management of the cases, immediate post operative care and management of complications. Apart from these the trainees will be rotating to other ancillary units to get hands on training in relevant areas. They will also undertake intradepartmental audit activities and participate in clinical and basic science research projects. The details of the training will be listed below.

### **Patient evaluation and decision making**

The areas where trainees will get hands on training include

- a) out patient clinics
- b) weekly tumor board sessions

The trainees will be seeing all the new and follow up patients during the clinic posting. They will be always supervised by a senior qualified teacher and they will participate in discussions regarding the clinical problem and management plans. There will be a weekly tumor board session. Towards the end of their training, i.e. the third year, the trainees will be encouraged to arrive at independent decisions, critically evaluated and supervised by the teachers.

### **Surgical training**

The department has a very good surgical volume which includes the whole spectrum of plastic surgery. The trainees will be able to observe, assist and perform under supervision all these procedures in a graded manner. For this a log book will have to be maintained and at end of each semester of 6 months the trainee will sit with the consultants and the log book will be evaluated to see for the deficiencies. The minimum expected log book activity is given as below

#### **Surgical training requirements**

(A=assisted PA=performed with assistance P=performed)

	Year 1	year2	year3	total
	A-PA-P	A-PA-P	A-PA-P	A-PA-P
Larynx				
Conservative procedures				
Open	1-0-0	0-1 -0	0-0-1	1-1-1
Endoscopic				
Near total Laryngectomy	2-0-0	0-1-0	0-0-1	2-1-1



Total Laryngectomy	2-0-0	0-2-1	0-0-3	2-2-4
Total laryngopharyngectomy	2-0-0	0-2-0	0-0-2	2-2-2
TEP-				
Primary	2-0-0	0-2-0	0-0-2	2-2-2
Secondary	2-0-0	0-2-0	0-0-1	2-2-1
Maxilla				
Partial maxillectomy	2-0-0	0-2-0	0-0-2	2-2-2
Total maxillectomy	2-0-0	0-2-0	0-0-2	2-2-2
Orbital exenteration	1-0-0	0-1-0	0-0-1	1-1-1
Oral cavity/Oropharynx				
Lip lesions	2-0-0	0-2-0	0-0-2	2-2-2
Access mandibulotomies	4-0-0	0-4-0	0-0-4	4-4-4
Marginal resections	2-0-0	0-2-0	0-0-4	2-2-4
Segmental resections	2-0-0	0-2-0	0-0-4	2-2-4
Tongue/ fom / cheek resections	3-0-0	0-3-0	0-0-4	3-3-4
Neck				
Sentinal node biopsies	2-0-0	0-2-2	0-0-4	2-2-6
Selective dissections	2-1-0	0-1-4	0-0-6	2-2-10
Comprehensive	2-0-0	0-2-0	0-0-4	2-2-4
Skull base/ craniofacial				
Anterior	2-0-0	0-2-0	0-0-2	2-2-2
Thyroid				
Partial	4-0-0	0-4-0	0-0-4	4-4-4
Total	4-0-0	0-4-0	0-0-4	4-4-4
Parotid				
Superficial	4-0-0	0-4-0	0-0-4	4-4-4
Total	2-0-0	0-2-0	0-0-2	2-2-2
Reconstructions				
Minor flaps	2-0-0	0-2-0	0-0-2	2-2-2
Forehead flap	1-0-0	0-1-0	0-0-1	1-1-1
Pec major	2-2-0	0-2-2	0-0-2	2-4-4
D-P flap	1-0-0	0-1-0	0-0-1	1-1-1
Others (LD/Trap)	2-0-0	0-2-0	0-0-2	2-2-2
Free flaps raising				
Fibula	4-0-0	0-4-0	0-0-2	4-4-2
RFF	4-0-0	0-4-0	0-0-2	4-4-2
Lat arm	4-0-0	0-4-0	0-0-2	4-4-2
DCIA	2-0-0	0-2-0	0-0-1	2-2-1
Rectus	4-0-0	0-4-0	0-0-2	4-4-2
Jejunum	1-0-0	1-1-0	0-1-0	2-2-0
Stomach pull up	1-0-0	1-1-0	0-1-0	2-2-0

Free flaps

Recipient vessel				
Preparation	4-0-0	0-4-1	0-0-3	4-4-4
Anastomosis Vein	4-0-0	0-4-1	0-0-3	4-4-4
Anastomosis artery	4-0-0	0-4-1	0-0-3	4-4-4
Nerve grafts	2-0-0	0-2-0	0-0-2	2-2-2
Other procedures				
Jejunostomy/ Gastrostomy	2-0-0	0-2-0	0-0-2	2-2-2
Central lines	2-2-0	0-2-2	0-0-2	2-4-4
Stomoplasty	1-0-0	0-1-0	0-0-1	1-1
Laser use	2-0-0	0-2-0	0-0-2	2-2-2
Skin grafts	2-2-0	0-2-2	0-0-2	2-4-4

### **Compulsory Academic activities**

Topic presentation in department -	12 in three years
Journal club reviews -	12 in three years
Attendance /Presentation of papers	in National head and neck meetings Once every year
Publications -	Two in three years
Research activities -	participation in one laboratory research project and one clinical trial

Tumor board meetings once a week.

All trainees will be required to maintain a log book of cases worked up, assisted, performed, and planned RT, and administered Chemotherapy and palliative care cases attended to. Also the activity records in terms of the compulsory academic activities have to be maintained.

### **Courses:**

**Paper -I** (Course 1. M5HN1) Basic Oncology, Oncopathology, Epidemiology & Biostatistics, Preventive Oncology, rehabilitation & Palliation

CO1: Knowledge of Epidemiology and Prevention of Head & Neck Cancer

CO2: Knowledge of Molecular Biology as applied to Head & Neck Cancer

CO3: Knowledge of General Principles of Head & Neck Pathology

CO4: Knowledge of Measures of treatment outcomes and Rehabilitation of Speech, Voice & Swallowing after treatment

CO5: Knowledge of Principles of Oncology and Palliation

- **Molecular cell biology of cancer**
- **Mechanism of Carcinogenesis**
- Targeted therapy
- Gene therapy in HNSCC

- Clinical Research Methods
  - Developing hypothesis and planning research project
  - Designing a clinical research project
  - Data collection and monitoring
- Ethics in biomedical research
- **Applied head and neck anatomy**
- **Principles of radiation therapy.**
- **Principles of chemotherapy**

**Paper -II** (Course 2 - M5HN2) Clinical Head & Neck Oncology, Reconstructive Surgery – I

CO1: Knowledge of management of Oral Cavity and Oropharyngeal Cancers

CO2: Knowledge of management of Laryngeal and Hypopharyngeal Cancers

CO3: Knowledge of management of Nasopharyngeal Cancers

CO4: Knowledge of management of Metastatic Neck disease

CO5: Knowledge of principles of Multidisciplinary Head & Neck Reconstruction

- **Salivary gland**
- **Paranasal sinus**
- **Parapharyngeal space**
- **Nasopharynx**
  
- Management of Neck
- Thyroid
- Parathyroid
- Occult Primary
  
- Nutritional support including total parenteral nutrition in patients with Head and neck cancer
- **Anterior skull base tumors**
- **Lateral skull base tumors**
- Management of cancer pain
- Childhood malignancies- retinoblastoma, neuroblastoma
- Specialized care of the terminally ill
- Feasibility of Chemoradiation to patients with regard to the age, general condition and the comorbidities
- **Lips reconstruction**
- **Oral cavity reconstruction**
- **Mandible reconstruction**
- Sarcomas of head and neck

**Paper - III** (Course 3 - M5HN3) Clinical Head & Neck Oncology, Reconstructive Surgery- II

- CO1: Knowledge of management of Cancers of Nasal Cavity, Paranasal Sinuses Anterior Skull Base and Orbit
- CO2: Knowledge of management of Laryngeal and Hypopharyngeal Cancers
- CO3: Knowledge of management of Nasopharyngeal Cancers
- CO4: Knowledge of management of Salivary Gland tumors
- CO5: Knowledge of principles of Defect-based reconstruction, Maxillofacial Prosthetics and Osseointegration

- **Reconstruction of soft tissue defects of face**
- Nose reconstruction
- Pharynx reconstruction
- **Skull base reconstruction**
  
- **Speech and swallowing therapy**
- Tracheo-esophageal prosthesis
- Electrolarynx
- Prosthetic rehabilitation
- Pediatric tumors of head and neck
- Glomus tumors and its long term prognosis
- Acoustic schwannoma
- Chemo prevention of HNSCC
- Surgical resection vs role of chemoradiation in head and neck cancers
- Epidemiology of cancer

**Skin tumors of head and neck**

- Melanoma of head and neck
- Lymphoma of head and neck
- Granulomatous and lymphoproliferative disease of head and neck

**Paper -IV** (Course 4 - M5HN4) Clinical Head & Neck Oncology, Newer concepts and clinical trials

- CO1: Knowledge of management of Thyroid cancers
- CO2: Knowledge of Robotic and Endoscopic Head & Neck surgery
- CO3: Knowledge of Systemic Targeted therapy for Recurrent and Metastatic Squamous Cell Carcinoma of Head & Neck
- CO4: Knowledge of management of Soft tissue and Bone Sarcomas of the Head & Neck
- CO5: Knowledge of management Non - Melanoma and Mellanoma Skin cancer

**Knowledge of latest management strategies in treatment of Thyroid cancer , Knowledge of latest treatment modalities and ability to prepare and present research topics in scientific conventions.**

**Soft Skills** (Course 5 - M5HN5) – Elective Course

The value added skills the student will acquire during the posting which will be assessed by 360 degree evaluation, throughout the programme.

CO1: Competency to conduct a clinical research.

CO2: Competency to work as a team leader.

CO3: Knowledge of medical ethics and etiquette.

CO4: Ability to interact with the patients and their relatives in an effective manner.

CO5: Attitude to be a lifelong learner.

CO6: Ability to be an effective teacher/communicator.

### **Assessments:**

A. Internal assessment - 6 monthly theory and clinical evaluations

B. Final examination

Theory papers – Four papers

- a) Basic sciences and applied anatomy
- b) General Head and Neck surgery, including benign pathology
- c) Head and neck Oncology, including radiotherapy and chemotherapy
- d) Recent advances

Practical and Viva

Model question papers

## MCh Head & Neck Surgery

### Paper-I

**Marks :100**

**Time: 3 Hrs**

Answer all questions

Draw labelled diagrams when necessary

#### Part A

- 1) Discuss biologic basis for interruption of EGFR pathway in head and neck cancer and clinical evidence of its utility. (20 marks)
- 2) Discuss the clinical anatomy of Infratemporal fossa. Describe the various approaches to the Infratemporal fossa. (20 marks)

#### Part B

(10 marks each )

Write briefly on:-

- 1) Targeted VEGF in Head and Neck cancer
- 2) Anatomical spaces and pattern of spread of laryngeal tumour
- 3) Surgical tumor margins, relevance and classification
- 4) Role of PET-CT in head and neck cancers
- 5) Discuss the Pathogenesis of osteo radionecrosis
- 6) Second primary cancer in head and neck

## MCh Head & Neck Surgery

### Paper II

**Marks :100**

**Time: 3 Hrs**

Answer all questions

Draw labelled diagrams when necessary

### Part-A

- 1) Discuss the pros and cons for lobectomy and total thyroidectomy for differentiated thyroid carcinoma  
(20 marks)
- 2) Mandibular reconstruction- Discuss indications with their justifications, methods with their relative merits and demerits  
(20 marks)

### Part -B

(10 marks each)

- 3) Radiologic features of benign mandibular disease
- 4) Pathology of parotid tumors
- 5) Pain management in head and neck cancer
- 6) Pathogenesis of osteoradionecrosis on mandible
- 7) TEP following total laryngectomy
- 8) Glomus jugulare classification and clinical features

## MCh Head & Neck Surgery Examination

### Paper-III

**Marks :100**

**Time: 3 Hrs**

Answer all questions  
Draw labelled diagrams when necessary

#### **Part A**

- 1) Impact of introduction of chemotherapy in the multi disciplinary management of head and neck cancer. Discuss the benefits and drawbacks (20 marks)
- 2) Discuss the evaluation and management of neck in head and neck squamous cell carcinoma (20 marks)

#### **Part B**

(10 marks each)

- 1) Discuss the localization studies in Parathyroid adenoma
- 2) Discuss the merits and demerits of laser surgery Vs radiotherapy for T1 glottic carcinoma
- 3) Management of orbit in PNS tumor
- 4) IMRT technique in NPC
- 5) Partial laryngectomy procedures
- 6) Role of HPV in head and neck malignancies



## MCh Head & Neck Surgery

### Paper IV

**Marks :100**

**Time: 3 Hrs**

Answer all questions  
Draw labelled diagrams when necessary

### Part A

- 1) What are the principles of Osteointegration and its indications in Head and Neck reconstruction? (20 marks)
- 2) Robotic assisted surgery in head and neck cancers-Current evidence and principle of practice (20 marks)

### Part B

(10 marks each)

- 1) Endoscopic assisted procedures in head and neck surgery
- 2) Role of image guided navigation in skull base tumors
- 3) Applications of stereotactic radio surgery
- 4) Stem cell in solid tumors
- 5) EGFR inhibitors
- 6) Super micro surgery

# EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the student:

Name of the faculty / Observer:

Date:

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Completeness of history and findings					
2	Clarity of presentation					
3	Assessment of defect/ problem					
4	Treatment plan					
5	Steps in execution of the plan					
6	Ability to defend diagnosis and plan					
7	Knowledge of the current and past literature					
	<b>Grand Total</b>					

## MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the student:

Name of the faculty / Observer:

Date:

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Article chosen was					
2	Extent of understanding of scope & Objectives of the paper of the candidate					
3	Whether cross reference has been consulted					
4	Whether other relevant publications consulted					
5	Ability to respond to questions on the paper / subject					
6	Audio – Visual aids used					
7	Ability to defend the paper					
8	Clarity of presentation					
9	Any other observation					
	<b>Total Score</b>					

## MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the student:

Name of the faculty / Observer:

Date

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Whether other relevant publications Consulted					
2	Whether cross references Have been consulted					
3	Completeness of the Preparation					
4	Clarity of Presentation					
5	Understanding the subject					
6	Ability to answer the questions					
7	Time Scheduling					
8	Appropriate use of Audio – Visual aids					
9	Over all Performance					
10	<b>Any other Observation</b>					
	<b>Total Score</b>					

## MODEL CHECK-LIST FOR EVALUATION OF CLINICAL WORK IN WARD/OPD

Name of the student:

Name of the faculty / Observer:

Date

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Regularity of attendance					
2	Punctuality					
3	Interaction with Colleagues And Supporting staff					
4	Maintainence of case records					
5	Presentation of cases during rounds					
6	Investigations work up					
7	Bedside Manners					
8	Rapport with patients					
9	Counseling Patient's relatives for blood donation or Postmortem andCase follow up.					
10	<b>Over all quality of clinical work</b>					
	<b>Total Score</b>					

## CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Name of faculty / Observer:

Sl No.		Strong point	Weak point
1	Communication of the purpose of the talk		
2	Evokes audience interest in the subject		
3	The Introduction		
4	The sequence of ideas		
5	The use of practical examples and /or illustrations		
6	Speaking style (clear, monotonous, etc. specify)		
7	Attempts audience participation		
8	Summary of the main points at the end		
9	Ask questions		
10	Answer questions asked by the audience		
11	Rapport of the speaker with his audience		
12	Effectiveness of the talk		
13	Uses of AV aids appropriately		

## LOG BOOK

Table 1: Academic activities attended

Name:

Admission year:

College:

<b>Date</b>	<b>Type of activity Specify Seminar, Journal club, Presentation, UG teaching</b>	<b>Particulars</b>

## LOG BOOK

Table 2: Academic Presentations made by the students

**Name:**

**Admission year:**

**College:**

Date	Topic	Type of activity Specify Seminar, Journal club, Presentation, UG teaching



# LOG BOOK

Table 3: Diagnostic and Operative procedures performed

**Name:**

**Admission year:**

**College:**

<b>Date</b>	<b>Name</b>	<b>I D No.</b>	<b>Procedure</b>	<b>Category A, PA, P*</b>

- A – Assisted a more senior surgeon
- PA – Performed procedure under the direct supervision of a senior surgeon
- PI - Performed independently