SRIMANTA SANKARADEVA
UNIVERSITY OF HEALTH SCIENCES

DR. B BOROOAH CANCER INSTITUTE

GOPINATH NAGAR, GUWAHATI-781016

SYLLABUS
OF
M.CH Head & Neck Surgery

I. INTRODUCTION

Head and Neck surgery is a recognized Super-specialty after M.S. Otorhinolayngology/General surgery. Head and Neck cancers are most common cancers in India. With improvements in the managementof cancer over the last two decades, it has become essential to have trained Head and Neck Oncologists for the comprehensive care of these patients.

II. AIMS & OBJECTIVES

The main aim of the training program is to ensure that at the end of 3 years, the candidate should be acquainted with comprehensive management and research methodology including medical statistics.

He/She must:

1) Be an independent Consultant / Clinician / Teacher in Head and Neck surgery.

2) Be acquainted with the current literature on relevant aspects of basic oncology, investigation and clinical oncology.

3) Take up clinical or basic research projects,with reference to Head and Neck cancers in our country.

4) Render medical care to be the individual and the community, integrating preventive, diagnostic, curative and palliative aspects with adequate understanding of sociocultural aspects of the community and knowledge of the epidemiology of Head and Neck cancers in India.

III. NAME OF THE COURSE

M.Ch. (Head and Neck Surgery)

IV. ELIGIBILITY

M.S. (General Surgery)

M.S. (ENT)

V. DURATION OF COURSE

Three Years.

VI. No of Seats

As specified from time to time

VII Selection of Candidates

An entrance test will be conducted by the Competent Authority and the admission to the course will be on the basis of merit list prepared on the basis of this test.

VIII Teacher

All eligible faculty members as prescribed by Homi Bhabha National Institute (DU) will be teachers in rotation, subjectto approval by the University. One student will be registered under one teacher.The teacher should have minimum 8 years of experience in the field of Head and Neck surgery. He/ She should also have minimum 4 years' experience after being appointed as Assistant Professor in the department of Head and Neck Surgery.

IX Place of Course

The course will be conducted at affiliated Medical Colleges / Recognized Institutes.

X. TYPE OF COURSE

The selected candidates will undergo a three year residential training as Residents / Trainees at the affiliated Medical Colleges/Teaching Hospitals / Recognized Institutes.

XII. TEACHING SCHEDULE

A. Clinical:

1) **Outpatient Teaching Schedule**: The Post Graduate students will attend outpatient clinics as per the schedule of the assigned unit. In the outpatient clinics, the students will be taught clinical history taking, clinical examination with appropriate investigations to appropriate staging and tentative management of the patient which is then confirmed in the Joint Clinic. By the end of residency, the students are trained for independent decision making and management of the patient.

2) **Teaching Ward Rounds:** In addition to daily ward rounds, teaching ward rounds are conducted every Thursday morning by the consultant, for all students in the Head and Neck Surgery Department. The students assess the patients and present in front of the attending where complete management of the patient from the basic investigation to definitive treatment and post treatment follow-up is discussed. This exposes the young residents to basic protocols of patient management.

3) **Operation Theatres:** The Post Graduate students will attend the Operation Rooms (OR) as per the schedule of the assigned unit where they will assist in or perform operations under supervision. The first year of the residency focuses on the basic procedures in minor OR like tracheostomy, taking punch biopsy and knife biopsy from the representative areas and learning to perform various neck dissections in oral cancer, early oral cancer, raising of pedicled flaps in major OR. During the second year the emphasis is on assessing the patient under anesthesia and direct laryngoscopic examination for mapping out the disease and making the management plan of the patient in Minor OR and performing the excision of various oral cavity primaries with adequate margins and reconstruction including inset the routine pedicled flaps and various local flaps in Major OR. In final year of the residency the students learn more advanced surgeries like thyroidectomy, laryngectomy, parathyroid surgery, parotid, assisting in Transoral laser surgery and Transoral Robotic Surgery and exposure to skull base procedures.

4) **Casualty duties and emergency management:** The residents undergo compulsory casualty rotation where they are exposed to various oncologic emergencies. They learn to take decision regarding the emergency investigations and undertake the basic treatment to stabilize the patient. They deal with both surgical and non-surgical emergencies, perform emergency procedures like external carotid artery ligation, tracheostomy and emergency laryngectomy occasionally.

B. Academic:

There is structured program covering all aspects of head and neck cancers:

1) Formal course of lectures which cover the management of all subsites of head and neck cancer, basic science like molecular markers and carcinogenesis, premalignant lesions and chemoprevention, rehabilitation protocols, newer techniques and technologies, postoperative management and follow-up
2) Case presentations covering early and advanced head and neck cancers.
3) Seminar / journal club.
4) Weekly Hospital Clinical Meetings.
5) Mortality meeting discussing the cause and prevention in treated patients
6) All Seminar / Conference / Workshops conducted by the Department routine being GPRA, Oral Mastercourse, Laser workshop, Oncosurg, endocrine meetings, thyroid preceptorship etc.

XIII. INTERNAL ASSESSMENT

1) A Postgraduate student Logbook will be maintained as prescribed by the University.
2) A Log book of operations assisted in or performed will be maintained & periodically signed by the teacher (computerized).

Internal assessment will be carried out yearly for post-graduate students.

XIV. SYLLABUS

Syllabus shall comprise in four parts:

1) Oral cavity and Oropharynx
2) Parotid and Thyroid
3) Nasopharynx, Paranasal sinus, Neck, other sites - Eye, Ears etc
4) Larynx and Hypopharynx

This will cover all aspects of the diagnosis, management and treatment of these cancers with special emphasis on translational and molecular aspects as well as newer technologies and treatments. Recent development and advances in the field and amendment in guidelines are also covered. Students are also imparted the basic knowledge of reading and understanding the published literature and to critically analyze it. They are also exposed the basic knowledge of medical statistics and softwares.

Topics to be covered in the lecture series:

General Topics

1. Basic science

1. Cancer biology
2. Chromosome related technology (Karyotyping, Comparative genomic hybridization, Fluoresecence In Situ Hybridization)
3. DNA and RNA related technology (Isolation and quantitation of DNA/RNA, Mutation analysis, PCR, RT PCR, Real Time PCR, sequencing, arrays)
4. Protein related technology (Immunohistochemistry and Westernblotting)

5. Tumor Immunology
6. Cell cycle
7. Programmed cell death/apoptosis
8. Angiogenesis
9. Cancer stem cells
10. Apoptosis and its significance in cancer
11. Biomarkers in head neck cancer

2. Carcinogenesis

1. Etiology of cancer
2. Environmental factors in carcinogenesis
3. Genetic factors in carcinogenesis
4. Human Papilloma Virus and cancer
5. Other tumor viruses
6. Tobacco carcinogenesis

3**. Principles of cancer screening**

4**. Radiology Clinics**

5**. Principles of Radiation Oncology**

1. Physical and biologic basis of radiation oncology
2. Fractionation techniques
3. Brachytherapy
4. Newer techniques in radiation Oncology
5. Hypoxia in head neck cancers and hypoxic cell sensitizers
6. Radiotherapy planning
7. IMRT and evidence to support its use in HN cancer

6. Principles of medical oncology

1. Mechanism of action of cytotoxic agents
2. Management of febrile neutropenia
3. Targeted therapy
4. Assessment of response (clinical and RECIST)
5. Biology of drug resistance
6. Immunotherapy

7. Clinical Research Methodology

1. Making a database
2. Study designs – case control, cohort and RCTs
3. Writing a research protocol×
4. Writing a paper for publication
5. Survival analysis
6. Randomized controlled trials
7. Systematic reviews and meta-analysis
8. Evaluating screening tests and biases
9. Evaluating /critique of a published paper

8. **Quality of Life**

9. **Others**

1. Biotherapeutics
2. Interferons
3. Cancer vaccines

*** Case discussions:**

1. Carcinoma of Thyroid with / without neck node
2. Unknown Primary Carcinoma with cervical node
3. Early stage cancer of the oral tongue
4. Advanced stage cancer of the oral tongue
5. Cancer Gingivobuccal complex
6. Maxillary mass
7. Salivary gland neoplasms
8. Osteoradionecrosis
9. Laryngeal / hypopharyngeal cancers
10. premalignant lesions of the oral cavity

* Lectures and seminars:

LIP AND ORAL CAVITY

1. Imaging for the mandible
2. Infratemporal fossa – anatomy, imaging and relevance to resectability
3. Muscles of mastication and technique of composite resections (videos)

4. Management of early oral cancer (stage I & II)
5. Imaging of the neck and management of the neck in early oral cancer
6. Types of neck dissection
7. Reconstruction options after surgery for early oral cancer (buccal mucosa and tongue)
8. Resection margins in surgery for oral cancer- evidence
9. Role of neoadjuvant chemotherapy in oral cancers
10. Adjuvant therapy for oral cancers
11. Brachytherapy for lip cancers
12. Principles of reconstruction and local flaps after lip resections
13. Role of sentinel node biopsy
14. Dental evaluation (pre and post op) and prosthetics after oral cancer surgery

OROPHARYNX

1. Staging and Imaging for oropharyngeal cancers
2. HPV and oropharyngeal cancers
3. Methods of detection of HPV
4. Discuss surgery vs. radiotherapy as primary treatment for oropharyngeal cancers
5. Role of robotic surgery in oropharyngeal cancers
6. Approaches to surgery for oropharyngeal tumors (techniques with videos)

THYROID

1. Surgical anatomy of the thyroid, parathyroids and nerves in relation to thyroid
2. Physiology of TSH and its importance in thyroid cancer
3. Thyroglobulin in thyroid cancer
4. Epidemiology and changing trends in patterns of thyroid cancer
5. Aetio-pathology, prognostic and staging systems of DTC
6. Molecular biology of thyroid carcinogenesis (DTC, PDTC and MTC)
7. Management of a solitary thyroid nodule
8. Hemithyroidectomy vs. total thyroidectomy for early thyroid cancers
9. Technique of total thyroidectomy and central neck dissection (videos/pictures)
10. Management of neck nodes in thyroid cancer (central and lateral)
11. Management of postoperative hypocalcemia
12. Locally advanced thyroid cancer- management of the recurrent laryngeal nerve
13. Preparation for RAI therapy

14. RAI therapy
15. Follow up of patients after thyroid cancer treatment.
16. TENIS and alternative therapies for non radio-iodine avid cancers
17. Staging and management of MTC
18. Familial MTC
19. Management of metastatic MTC
20. Management of anaplastic thyroid cancer

PARATHYROID

1. Clinical features and work up of patient of hyperparathyroidism
2. Surgery for parathyroid adenoma
3. Parathyroid carcinoma

HYPOPHARYNX

1. Relevant surgical anatomy and staging of hypopharyngeal cancers
2. Work up for a patient with hypopharyngeal cancer
3. Management of stage I/II hypopharyngeal cancer
4. Management of stage III/IV (non metastatic) hypopharyngeal cancer
5. Reconstruction of defects after surgery for hypopharyngeal cancer- when and how?
6. Stage wise prognosis and outcomes after treatment for hypopharyngeal cancer
7. Technique of total laryngectomy (videos/pictures)
8. Speech rehabilitation after total laryngectomy
9. Speech and swallowing dysfunction after organ preservation strategies

LARYNX

1. Surgical anatomy of the larynx
2. Histological variants of laryngeal cancer
3. Work up of a patient with suspected laryngeal cancer
4. Options for treatment of early laryngeal cancers
5. Physics and principles of laser surgery
6. Speech therapy after laser resections
7. Organ preservation strategies for advanced laryngeal cancer
8. Role of conservative salvage surgery for recurrence
9. Technique of supracricoid laryngectomy (videos/pictures)

SALIVARY GLANDS

1. Surgical anatomy of the parotid gland and facial nerve
2. Pathology of salivary gland neoplasms with discussion on treatment and prognostic significance
3. Staging and work up of a parotid tumor
4. Techniques of superficial, total, radical parotidectomy (videos/pictures)
5. Assessment of facial nerve dysfunction post operatively
6. Facial nerve reanimation procedures
7. Adjuvant therapy in salivary gland tumors

EAR AND TEMPORAL BONE

1. Surgical anatomy of the temporal bone
2. Natural history and mechanisms of spread of temporal bone tumors
3. Imaging of temporal bone tumors
4. Various surgical procedures and indications for temporal bone tumors
5. Indications for adjuvant therapy

NOSE AND PARANASAL SINUSES

1. Imaging of a maxillary mass
2. Pathology of sinonasal tumors
3. Maxillary defects and reconstructions
4. Types of maxillary resections
5. Indications for craniofacial resections
6. Indications for endoscopic sinonasal resections
7. Role of neo-adjuvant therapy in sinonasal malignancy

GENERAL HEAD NECK

1. Management of unresectable HN cancer
2. Nutritional support for HN cancer patients (peri-operative and during radiation therapy)
3. Role of re-irradiation in HN cancer
4. Parapharyngeal anatomy and tumors of the parapharyngeal space
5. Sarcomas of the head and neck
6. Mucosal melanomas
7. Skin cancer
8. Palliative chemotherapy

9. Targeted therapy in HN cancer

XV. ELIGBILITY FOR EXAMINATION

The candidate will be eligible to appear for the M. Ch. Examination in Head and Neck surgery conducted by the University only after certification of the following:

1) Completion of three years of Resident training.

2) Satisfactory attendance at Clinical / Academic sessions as duly certified on the logbook by the teacher. A minimum attendance of 85 % is mandatory.

XVI. EXAMINATION

4) Board of Examiners:

Four Examiners: Two internal & two external

All examiners shall be Surgical Oncologists/ Head and Neck surgeon.

5) Assessments of candidates & Results:

a) Assessment of theory, clinical, practical and viva–voce examination shall be done jointly by all the examiners.

b) A candidates shall be declared to have passed the examination if he /she has an adequate knowledge in all subjects as answered by Theory / clinical / practical and viva–voce examination and there shall be no classification or ranking of successful candidates. However, candidates of excellent performance could be recommended for award for distinction.

c) A candidates who fails in an examination shall appear as a casual student for subsequent examination.

d) The Board of examiners shall have the power to refer failed candidates for one year or to put in attendance for one term i.e. Six months before appearing for the next examination.