Curriculum

FNB Fellowship

Head & Neck Oncology

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I. INTRODUCTION (BACKGROUND)

Head and neck cancers as a group are amongst the most prevalent cancers in India. The stress is on multimodality treatment of these tumors as well as on providing good quality of life along with the cure to these patients. The outcome of treatment in advanced cancers is still lagging behind the international standards. Unfortunately in India, there is no uniformity of treatment protocols and there is lack of training. The head and neck cancers are treated by specialists from many backgrounds like general surgeons, ENT surgeons, Dental surgeons and plastic surgeons, each having expertise in their own field, but lacking an overall expertise and complete understanding of the tumor biology and behaviour. Most oncology centers/departments in multispecialty Hospital have strong radiation oncologists who first see Head and Neck cancer patients and decide about their management. But only few radiation oncologists take exclusive interest in head and neck cancers alone.

The number of head and neck cancers that need specialized management in India is huge. The existing cancer centers cannot cater to the needs of the entire population in this respect. Hence many of the head and neck cancers will need to be diagnosed and treated in a non-cancer center setting or a multispecialty Hospital. Such treatment should be carried out only by adequately trained personnel. There is a need for training program for wholesome training to suitable candidates, who will be able to and will devote a significant part of their clinical practice to tackle head and neck cancers problems. A two year certification training program is envisaged for this with the training being imparted to ENT surgeons or general surgeons or oncosurgeons.

II. OBJECTIVES OF THE PROGRAMME

NBE is running a surgical oncology Program since 2005. NBE realized the need to create subspecialty within super speciality of surgical oncology as the problems and management of Head & Neck cancer patients are unique and different from other cancers. The three main thrusts of activity for initiating this course are

i) establishing uniform and internationally accepted standards of care in head and neck cancers in the country.

ii) Promote research programs in basic sciences as well as clinical areas and

iii) initiate educational activities like structured oncology training program eg. fellowship in head and neck oncology.

Training includes all aspects relevant to research, prevention, diagnosis, treatment and rehabilitation of head and neck cancers, with specific emphasis on hands-on surgical training in head and neck oncology and contemporary reconstruction.

III. TEACHING AND TRAINING ACTIVITIES

1. **Training in Basic Sciences:** The applicant hospital is required to make provisions for training & teaching of NBE trainees in applied basic sciences as relevant to the applicant specialty.

   Accredited hospitals should also rotate their FNB trainees (in addition to the routine duties) in their hospital's Medical oncology, Radiation Oncology all allied Departments so as to enable them to gain knowledge in other related specialities.

2. **Library facilities:** The applicant department should have subscribed to at least 04 journals in the specialty applied for. At least 02 of these 04 journals should be international. Electronic journals are acceptable and it is not mandatory to have print journals. Subscription of journals should be accessible to FNB trainees.

IV. SYLLABUS

1. Surgical training

a) During his/her training, the fellow is expected to have seen, evaluated and participated in the treatment of at least 200 patients with head and neck cancer.
b) The fellow is expected to have participated in at least 200 major and minor head and neck surgical procedures over the 2-year fellowship period.
c) A minimum of two full operative days per workweek (equivalent to 16 hours of operating room time) are recommended.

d) The fulfilment of the recommended number of site-wise surgical procedures will be considered an essential requirement for fellowship completion- this will be maintained as a surgical case log in the standard format.
e) It is recommended that the scope of the procedures should be expanded to include surgically amenable benign thyroid/parathyroid disease, benign salivary gland and skull base tumors etc.
f) Other subspecialty training requiring head/neck expertise pertinent to Otolaryngology- Head and Neck Surgery (CO_2 laser surgery or endoscopic skull base or Plastic Maxillofacial Surgery craniofacial surgery) can be allowed to be incorporated in training.
g) The fellow will be required to maintain a surgical case log with a comprehensive list of all cases participated in. Submission of a completed operative case log will be an essential requirement for issuance of the fellowship completion certificate.
h) The log book will be countersigned by the Program Director each month, and case log review will form an essential component of the periodic fellowship review (to be performed every 12 months till the completion of the fellowship).

2. Clinics

a) The number of hours spent in the outpatient clinic and patient numbers seen will be documented and standardized. These may be variable across multiple training institutions.
b) A minimum of two full clinic days (at least one of them directly supervised by the Program Director or the Assistant Program Director) is recommended.
c) Clinic case presentations should be at least one per full clinic day per fellow. There should also be the provision of incorporating case presentations into the weekly Multidisciplinary Tumor Board Conference.
d) There should be a recommendation and provision for periodic interaction with the social worker/s and the psychological counsellor/s.
e) Formal training in patient and grief counselling should be incorporated wherever possible.

3. Academic program and Tumor Board

a) As part of the academic program, the trainee will help organize and attend a weekly Multidisciplinary Tumor Board Conference, to be attended by all disciplines present in the institution and pertinent to the practice of head and neck oncology, including but not limited to Head and Neck Surgery, Reconstructive Surgery, Radiation Oncology, Medical Oncology, Pathology,

Radiology, Nuclear Medicine, Dietetics, Speech/ Swallowing Therapy, Psychological Counselling, Nursing Supervisors, social workers etc. As many cases as possible should be presented by the trainees. The tumour board format and consensus recommendations will prepare the trainees to make well-informed decisions and prepare them for future team leading positions.

b) Wherever feasible, a Head and Neck Board should be encouraged with participation by Head and Neck Surgery, Plastic/ Reconstructive Surgery, Psychological Counselling, Dietetics, Physical therapy etc. The frequency of this meeting will be at the discretion of the participating institution.

c) There should be a provision for didactic training in a Grand Rounds format. The series of lectures should be delivered at least once weekly. The recommended format may include a minimum of (alternating) one trainee lecture and one lecture by program faculty, and should encourage extensive interaction. All topics pertinent to the management of head and neck oncology should be incorporated in the lecture schedule. The list of topics will be proposed by NBE.

d) Morbidity/mortality meetings, journal club and guest faculty presentations in a standard format are recommended to occur on a monthly basis for each activity.

e) The creation of an online training forum under the aegis of the NBE will be encouraged, where the trainees can share their perspectives via discussion threads. The registered users will have login privileges for accessing uploaded relevant course materials and recent literature.

4. Training in allied specialities

(Even though the presence of all of the below mentioned allied specialists at the training centre is ideal, trainees should be scheduled for rotations at outside affiliated centres if the above is not practicable)

a) Dental oncology

FNB trainees may interact with the dental surgeon regarding preradiation prophylaxis, post radiation conservative dental management and prevention/management of osteoradionecrosis.

Maxillofacial prosthesis training is important, as dental and prosthetic rehabilitation is integral for patients to return to their premorbid state.

b) Speech and swallowing rehabilitation:

Trainees will be encouraged to participate in rehabilitation following management of laryngeal/hypopharyngeal cancer, speech articulation/dysphagia management post glossectomy, and dysphagia rehabilitation post organ preservation treatment.

The fellow is expected to become proficient in TEP troubleshooting, compensatory manoeuvres/rehabilitation, and other aspects of voice and dysphagia management.

c) Diagnostic anatomical and functional imaging/nuclear medicine:

A week-long interactive rotation between the trainee and a radiologist experienced in head and neck imaging is suggested. This allows for discussion of a wide variety of cases by the trainee to allow understanding of radiological staging and subsequent surgical planning wherever indicated. The trainee should be able to understand the decision making as regards choice of investigation modality, and also understand the indications of therapeutic nuclear medicine.

d) Pathology:

A week-long interactive rotation with an experienced pathologist is recommended. Training will include essential aspects as cytopathology, processing of diagnostic biopsy, surgical specimen orientation, margin assessment, and a basic overview of routine as well as intraoperative pathology.

e) Radiation oncology:

The recommendation is for 2 weeks of rotation each year. At the completion of this rotation, the trainee should be able to understand the interplay between the two specialties in guiding decision-making, understand the indications of radiation therapy in head and neck cancers, and understand the sequelae and toxicities of radiation therapy and their management/ mitigation.

f) Medical Oncology:

The recommendation will be for 2 weeks of training. At the completion of this rotation, the trainee should be able to understand the rationale of decision making as regards cytotoxic and biological agents including immunotherapy, and regimen choice based on treatment setting and

performance status. He/she should also be able to understand and recognize toxicities of common chemotherapeutic agents and their basic management.

g) Pain management and palliative care:

This is recommended as ongoing interaction with the pain/palliative care specialist to understand cancer-associated pain and the pharmacological/ interventional modalities utilized to manage the same. This interaction will be aimed at gaining further perspective on end-of-life issues.

h) Preventive Oncology:

This constitutes an essential recommendation, and will incorporate strategies of tobacco cessation, community and physician initiatives, current role of HPV and the appropriate counselling, management of leucoplakia and other premalignant lesions, trismus rehabilitation, among others. Fellow is expected to have conducted at least one screening camp & one public education activity.

5. Research experience

a) Candidate should fulfil minimum following requirements in 2 years to be eligible for examination.
b) One paper publication as lead author in pubmed indexed journal/One conference presentation per year.
c) Candidate should attend at least two HN conferences (national/international or equivalent) in tenure.
d) The institution will provide infrastructural support, provision for maintenance of electronic or file data, IRB support, biostatistics support (in-house or outsourced as applicable) and permission to trainee to present or publish on behalf of the institution.
e) The decision on provision of protected research time will rest on a mutual decision made together by the trainee, program faculty and the institution.

6. Rotations at outside centres:

a) External rotation (outside institute) is recommended if the institute doesn't have necessary allied departments suggested for internal rotation. (especially for Rotations are preferred for dysphagia, dental rehab and reconstruction, pain palliative and psychology)
b) It needs to be done under an External Mentor.

c) The external mentor will have the following responsibilities: ensuring a beneficial supplemental training period by providing perspectives of management practised by another institution, signing off on the operative log book at the end of the rotation, and ensuring that the trainee gets adequate operating room experience during the rotation.
d) Trainees need to log their observation and participation during these external postings. The trainee also has to submit a written report on their experience.
e) Upon the fulfilment of the above pre-requisites, a certificate signifying the satisfactory completion of the external rotation will be issued. This will be an essential document at the time of completion of fellowship.

7. Meetings/Conferences:

a) The trainee is encouraged to participate and present papers (at least 2 in tenure of 2 years) at regional, national and international meetings, which will inspire confidence, bolster awareness and enhance study patterns.
b) The institution may, at its discretion, choose to reimburse the registration cost of meeting sattended.
c) Candidate must attend at least one meeting every year.
d) Candidate must present one papers every year in head neck or allied meetings

8. Suggested syllabus

a) A selected collection of textbooks including basic science texts, operative and lab manuals and compendia will be suggested for reading during the training period.
b) By no means should these lists be considered all-encompassing. The trainee will be encouraged to read other standard texts and journals as per his/her discretion under the supervision of the program faculty.

9. Surgical Curriculum

The FNB curriculum mandates a minimum of twice weekly OR with details mentioned in the log book. Following numbers suggest minimum required surgical exposure of the candidate.

For head neck oncology - Surgical curriculum year one

Procedure	**Seen**	**Assisted**	**Perfomed under Supervision**
Lymph node biopsy + Minor Procedure			25

DL Scopy biopsy	5	5	10
Neck dissection	10	10	5
Glossectomy	5	5	2
Mandibulotomy*	2	2	1
Parotidectomy	2	2	1
Thyroidectomy	5	5	2
Mandibulectomy -segmental	5	5	2
Mandibulectony – marginal	5	5	2
Larnygectomy - total	5	3	0
Maxillectomy	5	3	0
Pectoralis major	3	3	2
Other local flaps	3	3	2

For head neck oncology - Surgical curriculum year two

Procedure	**Performed under Supervision**
DL Scopy biopsy	20
Neck dissection	10
Glossectomy	5
Parotidectomy	2
Thyroidectomy	2
Mandibulectomy	10
Larnygectomy - total	2
Maxillectomy	2
Pectoralis major	5
Other local flaps	5

(May vary according to institutional practice, Candidate may undergo a microvascular course prior to commencement of free flap training Free flaps – Outside rotation at a high volume centre is desirable if Institute is not performing free flaps)

10. Academic curriculum

a) Weekly presentations – 30 / year.

b) Following topics are recommended to be covered in the curriculum over 2 years. Academic curriculum must include one case presentation and one seminar presentation per week along with journal club and grand rounds

i. **Basic science**

- Cancer biology
- Chromosome related technology (Karyotyping, Comparative genomic hybridization, Fluoresecence in Situ Hybridization)
- DNA and RNA related technology (Isolation and quantitation of DNA/RNA, Mutation analysis, PCR, RT PCR, Real Time PCR, sequencing, arrays)
- Protein related technology (Immunohistochemistry and Westernblotting)
- Tumor Immunology
- Cell cycle
- Programmed cell death/apoptosis
- Angiogenesis
- Cancer stem cells
- Apoptosis and its significance in cancer
- Biomarkers in head neck cancer

ii. **Carcinogenesis**

- Etiology of cancer
- Environmental factors in carcinogenesis
- Genetic factors in carcinogenesis
- Human Papilloma Virus and cancer
- Other tumor viruses
- Tobacco carcinogenesis

iii. **Principles of cancer screening**

iv. **Radiology Clinics**

v. **Principles of Radiation Oncology**

- Physical and biologic basis of radiation oncology
- Fractionation techniques
- Brachytherapy
- Newer techniques in radiation Oncology
- Hypoxia in head neck cancers and hypoxic cell sensitizers
- Radiotherapy planning
- IMRT and evidence to support its use in HN cancer

vi. **Principles of medical oncology**

- Mechanism of action of cytotoxic agents
- Management of febrile neutropenia
- Targeted therapy
- Assessment of response (clinical and RECIST)
- Biology of drug resistance
- Immunotherapy

vii. Clinical Research Methodology

- Making a database
- Study designs – case control, cohort and RCTs
- Writing a research protocol
- Writing a paper for publication
- Survival analysis
- Randomized controlled trials
- Systematic reviews and meta-analysis
- Evaluating screening tests and biases
- Evaluating /critique of a published paper

viii. Quality of Life:

- Measuring QOL – instruments (EORTC, site specific QOL)
- QOL as an outcome measure.
- End of life care issues
- Principles of palliative management
- Medical ethics in Oncology

ix. Others

- Biotherapeutics
- Interferons
- Cancer vaccines

❖ Case discussions:

- Carcinoma of Thyroid with / without neck node
- Unknown Primary Carcinoma with cervical node
- Early stage cancer of the oral tongue
- Advanced stage cancer of the oral tongue
- Cancer Gingivobuccal complex
- Maxillary mass
- Salivary gland neoplasms

- Osteoradionecrosis
- Laryngeal / hypopharyngeal cancers
- premalignant lesions of the oral cavity

❖ Lectures and seminars:

LIP AND ORAL CAVITY

- Imaging for the mandible
- Infratemporal fossa – anatomy, imaging and relevance to resectability
- Muscles of mastication and technique of composite resections videos)
- Management of early oral cancer (stage I & II)
- Imaging of the neck and management of the neck in early oral cancer
- Types of neck dissection
- Reconstruction options after surgery for early oral cancer (buccal mucosa and tongue)
- Resection margins in surgery for oral cancer- evidence
- Role of neoadjuvant chemotherapy in oral cancers
- Adjuvant therapy for oral cancers
- Brachytherapy for lip cancers
- Principles of reconstruction and local flaps after lip resections
- Role of sentinel node biopsy
- Dental evaluation (pre and post op) and prosthetics after oral cancer surgery

OROPHARYNX

- Staging and Imaging for oropharyngeal cancers
- HPV and oropharyngeal cancers
- Methods of detection of HPV
- Discuss surgery vs. radiotherapy as primary treatment for oropharyngeal cancers
- Role of robotic surgery in oropharyngeal cancers
- Approaches to surgery for oropharyngealtumors (techniques with videos)

THYROID

- Surgical anatomy of the thyroid, parathyroids and nerves in relation to thyroid
- Physiology of TSH and its importance in thyroid cancer
- Thyroglobulin in thyroid cancer
- Epidemiology and changing trends in patterns of thyroid cancer
- Aetio-pathology, prognostic and staging systems of DTC
- Molecular biology of thyroid carcinogenesis (DTC, PDTC and MTC)
- Management of a solitary thyroid nodule
- Hemithyroidectomy vs. total thyroidectomy for early thyroid cancers
- Technique of total thyroidectomy and central neck dissection (videos/pictures)
- Management of neck nodes in thyroid cancer (central and lateral)
- Management of postoperative hypocalcemia
- Locally advanced thyroid cancer- management of the recurrent laryngeal nerve
- Preparation for RAI therapy
- RAI therapy
- Follow up of patients after thyroid cancer treatment.
- TENIS and alternative therapies for non radio-iodine avid cancers
- Staging and management of MTC
- Familial MTC
- Management of metastatic MTC
- Management of anaplastic thyroid cancer

PARATHYROID

- Clinical features and work up of patient of hyperparathyroidism
- Surgery for parathyroid adenoma
- Parathyroid carcinoma

HYPOPHARYNX

- Relevant surgical anatomy and staging of hypopharyngeal cancers
- Work up for a patient with hypopharyngeal cancer
- Management of stage I/II hypopharyngeal cancer
- Management of stage III/IV (non metastatic) hypopharyngeal cancer
- Reconstruction of defects after surgery for hypopharyngeal cancer- when and how?

- Stage wise prognosis and outcomes after treatment for hypopharyngeal cancer
- Technique of total laryngectomy (videos/pictures)
- Speech rehabilitation after total laryngectomy
- Speech and swallowing dysfunction after organ preservation strategies

LARYNX

- Surgical anatomy of the larynx
- Histological variants of laryngeal cancer
- Work up of a patient with suspected laryngeal cancer
- Options for treatment of early laryngeal cancers
- Physics and principles of laser surgery
- Speech therapy after laser resections
- Organ preservation strategies for advanced laryngeal cancer
- Role of conservative salvage surgery for recurrence
- Technique of supracricoidlaryngectomy (videos/pictures)

SALIVARY GLANDS

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

EAR AND TEMPORAL BONE

- Surgical anatomy of the temporal bone
- Natural history and mechanisms of spread of temporal bone tumors
- Imaging of temporal bone tumors
- Various surgical procedures and indications for temporal bone tumors
- Indications for adjuvant therapy

NOSE AND PARANASAL SINUSES

- Imaging of a maxillary mass
- Pathology of sinonasaltumors
- Maxillary defects and reconstructions
- Types of maxillary resections
- Indications for craniofacial resections
- Indications for endoscopic sinonasal resections
- Role of neo-adjuvant therapy in sinonasal malignancy

GENERAL HEAD NECK

- Management of unresectable HN cancer
- Nutritional support for HN cancer patients (peri-operative and during radiation therapy)
- Role of re-irradiation in HN cancer
- Parapharyngeal anatomy and tumors of the parapharyngeal space
- Sarcomas of the head and neck
- Mucosal melanomas
- Skin cancer
- Palliative chemotherapy
- Targeted therapy in HN cancer

RECONSTRUCTION

- Principles of Reconstruction in Head Neck Cancer
- Pedicled flaps -PMMC, Deltopectoral, submental,
- Local flaps: Nasolabial, palatal
- reconstruction of the lip
- Hypopharyngeal reconstruction

11. **Journal club:** Journal club presentation may be conducted by the candidate every week. Institute is encouraged, over and above suggested articles, to discuss appropriate articles in Journal Club.

V. LOG BOOK

A candidate shall maintain a log book of operations (assisted / performed) during the training period, certified by the concerned post graduate teacher / Head of the department / senior consultant.

This log book shall be made available to the board of examiners for their perusal at the time of the final examination.

The log book should show evidence that the before mentioned subjects were covered (with dates and the name of teacher(s) The candidate will maintain the record of all academic activities undertaken by him/her in log book.

1. Personal profile of the candidate
2. Educational qualification/Professional data
3. Record of case histories
4. Procedures learnt
5. Record of case Demonstration/Presentations
6. Every candidate, at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by him/her during the entire period of training as per requirements of the log book. It should be duly certified by the supervisor as work done by the candidate and countersigned by the administrative Head of the Institution.
7. In the absence of production of log book, the result will not be declared.

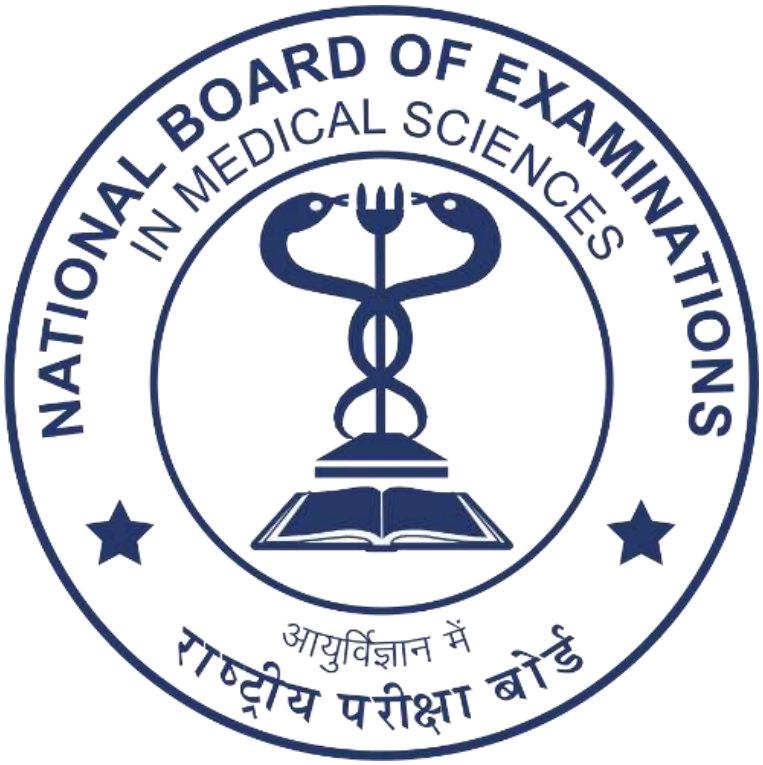
VI. RECOMMONDED TEXT BOOKS AND JOURNALS:

S. No.	BOOKS	AUTHOR NAME
1.	Stell and Maran's Textbook of Head and Neck Surgery and Oncology	John C. Watkinson and Ralph W. Gilbert
2.	Head and Neck Cancer: A Multidisciplinary Approach	Louis B. Harrison
3.	Functional and Selective Neck Dissection	Javier Gavilan
4.	Jatin Shah's Head and Neck Surgery and Oncology	Jatin Shah, Snehal Patel, Bhuvanesh Singh, Richard Wong
5.	Myer's - Cancer of the Head & neck	Jeffrey N.Myers,EhabY.N.Hanna, Eugene N.Myers
6.	Conservative laryngeal surgery	Sultan Pradhan
7.	Surgery of the thyroid and parathyroid gland, 3rd edition, Gregory	W Randolph

8.	Cummings otolaryngology head neck surgery, 7th edition	Paul W Flint
9.	Scott brown's otolaryngology head and neck surgery, 8th edition,	John Watkinson
10.	Surgery for cancer of the larynx and related structures,	Carl Silver
11.	Comprehensive management of skull base tumors,	Ehab Hanna
12.	Basic concepts in head and surgery and oncology	Krishnakumar Thankappan
13.	Dysphagia management in Head and neck cancers,	Krishnakumar Thankappan
14.	Contemporary Oral Oncology	Moni Kuriakose
15.	Principles and practice of head and neck surgery and oncology, 2nd edition	Paul Montgomery
16.	Radiotherapy for head and neck cancers, 5th edition	Adam S Garden
17.	Atlas of head and neck surgery	James Cohen
18.	The recurrent and superior laryngeal nerves,	Gregory Randolph
19.	Surgery of the Trachea and Bronchi	Hermes Grillo
20.	Netter atlas of human anatomy	Frank Netter
21.	Cunningham's Manual of practical anatomy, volume 3, 15th edition	Cunningham
22.	Atlas of regional and free flaps for head and neck reconstruction, 2nd edition,	Mark Urken
23.	Grabbs encyclopaedia of flaps - head and neck, 3rd edition	Berish strauch
24.	Head and Neck Cancer: An Evidence-Based Team Approach (1st Edition)	Genden / Varvares
25.	Open Access Atlas of Otolaryngology- Head and Neck Operative	Johan Fagan
26.	Head and Neck Pathology	Leon Barnes, SimionChiosea, Raja Seethala, David Elder (Editor)
27.	Head and Neck Radiology (2 Volumes)	Anthony A. Mancuso

28.	Head and Neck Anatomy (Point (Lippincott Williams & Wilkins)	James L. Hiatt PhD, Leslie P. Gartner PhDSeries: Point (Lippincott Williams & Wilkins)

S. NO.	Journal's
1.	Head & Neck Cancer
2.	INDIAN JOURNAL OF SURGICAL ONCOLOGY (IJSO)
3.	Journal of clinical oncology, ASCO
4.	Jama otolaryngology- head and neck surgery
5.	Oral oncology, Elsevier
6.	Laryngoscope, Wiley
7.	Thyroid, Mary Ann leibert
8.	Cancer-Walter kluwer
9.	New England Journal of Medicine
10.	Otolaryngology clinics of North America, elsevier
11.	International journal of oral and maxilla facial surgery, Churchill livingstone
12.	Indian journal of otolaryngology and Head & Neck Surgery, springer
13.	British journal of oral and maxillofacial surgery-Elsevier
14.	Annals of Research in Oncology-
15.	Radiotherapy and Oncology- Elsevier



आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड

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