CONTENTS

SECTION 1: THYROID

Chapter 1. Pathology of Thyroid Tumors 3
Smitha NV

- Classification *3*
- Fine Needle Aspiration Cytology (FNAC) *4*
- Papillary Carcinoma *5*
- Follicular Carcinoma *8*
- Poorly Differentiated Carcinoma *9*
- Anaplastic (Undifferentiated) Carcinoma *9*
- Medullary Carcinoma *10*
- Molecular Genetics *11*
- Ancillary Testing *13*

Chapter 2. Guidelines in the Management of Differentiated Thyroid Cancer 14
Shreya Bhattacharya, Krishnakumar Thankappan

- Diagnostic Evaluation *14*
- Treatment *15*
- Risk Stratification *20*
- Role of Radioiodine after Thyroidectomy *20*
- Distant Metastasis *21*
- External Beam Radiotherapy (EBRT) *21*
- Follow-up *21*
- Recurrent DTC *21*

Chapter 3. Guidelines in the Management of Medullary and Anaplastic Thyroid Cancer 23
Shreya Bhattacharya, Krishnakumar Thankappan

- **Medullary Thyroid Cancers** *23*
- Diagnostic Evaluation *23*
- TNM Staging *24*
- Treatment *24*
- Prognosis *26*
- Anaplastic Carcinoma *26*
- Staging *26*
- Management *26*

Chapter 4. Principles of Thyroid Surgery 28
Shreya Bhattacharya, Krishnakumar Thankappan
- Surgical Anatomy *28*
- Surgical Technique *29*
- Complications of Thyroidectomy *30*

Chapter 5. Role of Nuclear Medicine in Adjuvant Therapy and Follow-up of Differentiated Thyroid Cancer 32
P Shanmuga Sundaram
- Selection of Patients for Radioiodine ^{131}I Ablation *33*
- Side Effects of ^{131}I High-dose Therapy *36*
- Long-term Effects of ^{131}I *37*

Chapter 6. Medical Management of Differentiated Thyroid Cancer 39
Vasantha Nair, Krishnakumar Thankappan
- General Principles *39*
- Follow-up after Initial Therapy *39*
- T4 Suppression Therapy *40*
- Role of T3 *41*
- Chemotherapy *41*
- Addressing Comorbidities *41*

Chapter 7. Parathyroid Tumors: Evaluation and Management 44
Shibu George
- Anatomy *44*
- Primary Hyperparathyroidism and Parathyroid Adenoma *44*
- Asymptomatic Primary Hyperparathyroidism *45*
- Parathyroid Carcinoma *47*
- Secondary Parathyroid Malignancy *48*

SECTION 2: SALIVARY GLANDS AND PARAPHARYNGEAL TUMORS

Chapter 8. Pathology of Salivary Gland Tumors 55
Chaya Prasad, Smitha NV
- WHO Classification *55*
- Malignant Tumors *55*
- Benign Tumors *65*

Chapter 9. Imaging of Salivary Gland Tumors 67
Sandya CJ, Akshay Kudpaje, Sivakumar Vidhyadharan, Rajsekar CS
- Normal Anatomy *67*
- Neoplasms of Salivary Glands *68*
- Malignant Neoplasms of Parotid Gland *70*

Chapter 10. Guidelines in the Management of Salivary Gland Malignancies 72
Mahamaya Prasad Singh, Krishnakumar Thankappan, Subramania Iyer
- Epidemiology *72*
- Clinical Presentation *72*
- Imaging *72*
- Biopsy *74*
- Treatment *74*
- Prognosis *76*

Chapter 11. Principles of Salivary Gland Tumor Surgery 77
Mahamaya Prasad Singh, Krishnakumar Thankappan, Subramania Iyer
- Surgical Anatomy *77*
- Parotidectomy: Surgical Technique *78*
- Submandibular Gland *80*
- Surgical Technique *80*

Chapter 12. Imaging in Parapharyngeal Tumors 81
Sandya CJ, Akshay Kudpaje
- Anatomy *81*
- Imaging Assessment *81*
- Pathology *82*

Chapter 13. Parapharyngeal Space Tumors 89
Mahamaya Prasad Singh, Krishnakumar Thankappan
- Anatomy *89*
- Boundaries *89*
- Tumors of the Parapharyngeal Space *89*
- Clinical Presentation *90*
- Treatment *91*
- Approaches to the Parapharyngeal Space *91*

Chapter 14. Tumors of Infratemporal Fossa: Approaches and Management.....94
Divya GM
- Surgical Anatomy *94*
- Classification of Tumors of Infratemporal Fossa *94*
- Diagnosis *96*
- Patient Selection *97*
- Approaches to Infratemporal Fossa *97*

Chapter 15. Malignant Tumors of the Temporal Bone 101
Deepak Balasubramanian
- Etiology *101*
- Spectrum of Malignancies in the Temporal Bone *101*
- Pathways of Tumor Spread in the Temporal Bone *101*
- Clinical Presentation *102*
- Clinical Evaluation *102*
- Staging *102*
- Treatment *103*
- Prognosis *103*

Chapter 16. Facial Nerve 105
Salima Rema Windsor
- Anatomy *105*
- Surgical Landmarks for Facial Nerve *107*
- Pathophysiology *108*
- Etiology of Facial Nerve Paralysis *109*
- Management of Facial Nerve Paralysis *110*
- Treatment of Facial Paralysis *111*
- Facial Reanimation *111*

SECTION 3: NECK

Chapter 17. Neck Nodal Levels and Classification of Neck Dissection..... 117
Shashikant Vishnubhai Limbachiya, Deepak Balasubramanian
- Anatomy of the Fascial Spaces of the Neck *117*
- Neck Lymphatics *117*
- Classification of Neck Nodal Levels *117*
- Terminology of Neck Dissection *121*
- Staging of the Neck *122*

Chapter 18. Management of the Node Negative Neck 124
Shashikant Vishnubhai Limbachiya, Deepak Balasubramanian
- Treatment Options *124*

Chapter 19. Management of the Node Positive Neck 127
Shashikant Vishnubhai Limbachiya, Deepak Balasubramanian
- Treatment for N+ Neck *127*
- Radical Neck Dissection *127*
- Modified Radical Neck Dissection *131*
- Complications of Neck Dissection *132*

Chapter 20. Nodal Metastasis from an Unknown Primary Origin 134
Krishnakumar Thankappan
- Theories of Occurrence *134*
- Evaluation *134*
- AJCC 8th Edition: Changes in Relation to Cervical Metastasis with Unknown Primary *135*
- Treatment *137*

SECTION 4: PARANASAL SINUSES

Chapter 21. Pathology of Tumors of the Nose and Paranasal Sinuses 143
Chaya Prasad
- WHO Histological Classification *143*

Chapter 22. Imaging of the Paranasal Sinus Tumors 151
Sandya CJ, Akshay Kudpaje, Sivakumar Vidhyadharan, Chinmay Kulkarni
- Sinonasal Neoplasms *151*
- Imaging Modalities *151*
- Lymphatic Spread *151*
- Perineural Spread *152*
- Orbital Involvement *153*
- Brain and Dural Involvement *153*
- Soft Tissue Involvement *154*

Chapter 23. Guidelines in the Management of Malignancies in Maxillo-ethmoid Complex 156
Adharsh Anand, Deepak Balasubramanian
- Patterns of Spread *156*
- Presenting Signs and Symptoms *157*

- Ohngren's Classification *157*
- TNM Staging, AJCC 8th Edition *157*
- Evaluation *157*
- Treatment Guidelines *158*
- Management of Neck *161*
- Management of the Orbit *161*
- Reconstruction and Rehabilitation *161*
- Outcome *162*

Chapter 24. Principles of Surgery in the Management of Tumors of Maxillo-ethmoid Complex 163
Adharsh Anand, Deepak Balasubramanian

- Surgical Anatomy *163*
- Surgical Treatment *163*

SECTION 5: ORAL CAVITY AND OROPHARYNX

Chapter 25. Imaging in Oral and Oropharyngeal Tumors 171
Sandya CJ, Akshay Kudpaje, Shreya Bhattacharya

- Oral Cavity *171*
- Retromolar Trigone *172*
- Lymphatic Evaluation *179*
- Metastases *179*

Chapter 26. Guidelines in the Management of Oral Cavity Cancers 181
Sivakumar Vidhyadharan, Anoop R, Krishnakumar Thankappan

- Epidemiology *181*
- Clinical Presentation *181*
- Treatment: General Principles *185*

Chapter 27. Guidelines in the Management of Oropharyngeal Cancers..... 190
Prameela CG

- Epidemiology *190*
- Etiology *190*
- Anatomy *191*
- Subsites of Oropharynx *191*
- Pathology *191*
- Clinical Features *191*
- Distant Metastasis *192*

- Evaluation *192*
- Management *193*
- Subsite-wise Treatment Approaches *196*
- Transoral Surgical Approaches *200*
- Adjuvant Treatment *200*
- Definitive Radiotherapy *201*
- Altered Fractionation Schedules *202*
- Treatment Sequelae *204*

Chapter 28. Principles of Surgery in Oral Cavity Cancers 205
Sivakumar Vidhyadharan, Subramania Iyer, Krishnakumar Thankappan

- Surgical Anatomy *205*
- Retromolar Trigone *207*
- Surgical Management and Techniques *207*
- Management of the Mandible *212*
- Assessment of Bony Invasion *213*
- Mandibulectomy *214*

SECTION 6: LARYNX, HYPOPHARYNX AND NASOPHARYNX

Chapter 29. Imaging in Laryngeal and Hypopharyngeal Tumors..... 221
Sandya CJ, Akshay Kudpaje

- Anatomy of Larynx *221*
- Imaging Techniques *222*
- Supraglottic Cancers *223*
- TNM Staging *226*

Chapter 30. Guidelines in the Management of Laryngeal Cancers 231
Akshay Kudpaje, Krishnakumar Thankappan

- Anatomy *231*
- Clinical Features *232*
- Treatment *233*

Chapter 31. Guidelines in the Management of Hypopharyngeal Cancers..... 239
Akshay Kudpaje, Krishnakumar Thankappan

- Anatomy *239*
- Clinical Features *240*
- Treatment *242*

Chapter 32. Principles of Surgery in Larynx and Hypopharynx Cancers 247
Akshay Kudpaje, Krishnakumar Thankappan, Subramania Iyer

- Transoral Laser Microsurgery *247*
- Vertical Partial Laryngectomy *249*
- Supraglottic Laryngectomy *250*
- Supracricoid Partial Laryngectomy with Cricohyoidoepiglottopexy (SCPL-CHEP) *250*
- Supracricoid Partial Laryngectomy with Cricohyoidopexy (SCPL-CHP) *251*
- Near Total Laryngectomy *252*
- Total Laryngectomy *253*
- Alaryngeal Speech *253*

Chapter 33. Tracheostomy and Airway Management 255
Salima Rema Windsor

- Tracheostomy *255*
- Pediatric Tracheostomy *258*
- Types of Tracheostomy Tubes *260*
- Percutaneous Dilatational Tracheostomy *260*

Chapter 34. Guidelines in the Management of Carcinoma of the Nasopharynx 263
Pushpaja KU

- Anatomy *263*
- Lymphatic Drainage *263*
- Epidemiology *263*
- Etiology *264*
- Pathology *264*
- Routes of Spread *264*
- Clinical Presentation *265*
- Diagnosis *266*
- General Treatment Principles *268*

SECTION 7: GENERAL TOPICS

Chapter 35. Melanoma and Nonmelanoma Skin Cancers 273
Divya GM

- Melanoma *273*
- Nonmelanoma Skin Cancers *279*
- Basal Cell Carcinoma *281*
- Squamous Cell Carcinoma *283*

Chapter 36. Role of Chemotherapy in Head and Neck Cancer 285
K Pavithran
- Induction Chemotherapy *285*
- Induction Chemotherapy Followed by CRT versus CRT Alone *286*
- Locally Advanced SCCHN *286*
- Postoperative Concurrent Chemoradiotherapy *287*
- Nasopharyngeal Carcinoma *288*
- Recurrent or Metastatic Disease *288*
- Metronomic Chemotherapy *288*
- Immunotherapy *288*

Chapter 37. Principles of Radiotherapy in Head and Neck Malignancies 290
Anoop R
- General Principles and Radiobiology *290*
- Four R's of Radiobiology *290*
- Fractionation *291*
- Methods of Radiation Delivery *291*
- Clinical Applications *292*
- Radiation Treatment Planning *292*
- External Beam Radiation Therapy *294*
- Three-dimensional Conformal Radiation Therapy (3D-CRT) *295*
- Intensity-modulated Radiation Therapy *295*
- Brachytherapy *297*
- Side Effects of Radiation Treatment *298*

Chapter 38. Molecular Biology of Head and Neck Cancer 300
Mayuri Mohan Rajapurkar
- Tobacco-related Cancers *301*
- Human Papillomavirus-related Cancers *301*
- Genetic Susceptibility *301*
- Carcinogenesis *302*
- Field Cancerization *302*
- Epithelial-to-Mesenchymal Transition *303*
- Epigenetic Modification *303*
- Molecular Pathways involved in HNSCC *303*
- Genetic Expression Profiling and Prognostic Markers *304*
- Role of Immunotherapy *305*

Chapter 39. Recent Advances in Management of Head and Neck Cancer 307
Deepak Balasubramanian
- Human Papillomavirus and Head and Neck Cancer *307*
- Transoral Robotic Surgery *307*

- Sentinel Node Biopsy *308*
- Molecular Diagnostics in Thyroid Cancer *308*
- Newer Systemic Agents (Epidermal Growth Factor Receptor and Tyrosine Kinase Inhibitor) *309*
- Advances in Radiation Delivery Techniques *309*

Chapter 40. Head and Neck Reconstruction 310

Mohit Sharma, Abhijeet N Wakure, Sivakumar Vidhyadharan, Subramania Iyer

- Principles of Reconstruction *310*
- Goals of Reconstruction *310*
- Reconstructive Strategies *310*
- Postreconstruction Rehabilitation *323*

Index 327