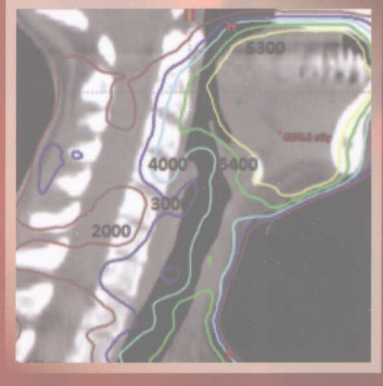
Includes Full Text Online and Trial Access to LWWOncology.com

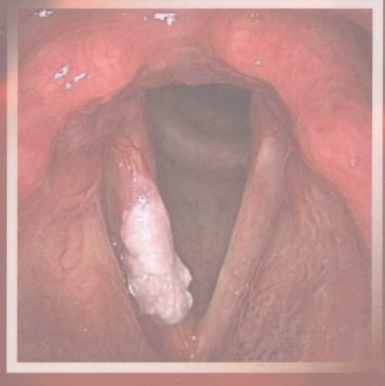
LWW ONCOLOGY

FOURTH EDITION

HEAD AND NECK CANCER

A MULTIDISCIPLINARY APPROACH





Louis B. Harrison
Roy B. Sessions
Merrill S. Kies

Wolters Kluwer Health | Lippincott Williams & Wilkins

HEAD AND NECK CANCER

A Multidisciplinary Approach

FOURTH EDITION

EDITORS

Louis B. Harrison, MD, FASTRO
Physician-in-Chief
Continuum Cancer Centers of New York
Chairman and Gerald J. Friedman Chair of Radiation Oncology
Beth Israel Medical Center and St. Luke's and Roosevelt Hospitals
Professor of Radiation Oncology and Otorhinolaryngology—Head and Neck Surgery
Albert Einstein College of Medicine
New York, New York

Roy B. Sessions, MD, FACS
Professor, Otolaryngology—Head and Neck Surgery
Medical University of South Carolina
Charleston, South Carolina
Adjunct Professor, Otolaryngology—Head and Neck Surgery
Georgetown University
Washington, District of Columbia

Merrill S. Kies, MD
Professor of Medicine, Thoracic/Head and Neck Medical Oncology
The University of Texas MD Anderson Cancer Center
Houston, Texas

Wolters Kluwer Health | Lippincott Williams & Wilkins

Philadelphia • Baltimore • New York • London
Buenos Aires • Hong Kong • Sydney • Tokyo

Senior Executive Editor: Jonathan W. Pine, Jr.
Senior Product Manager: Emilie Moyer
Vendor Manager: Bridgett Dougherty
Senior Manufacturing Coordinator: Beth Welsh
Design Coordinator: Holly McLaughlin
Production Service: S4Carlisle Publishing Services

Two Commerce Square
2001 Market Street
Philadelphia, PA 19103 USA
LWW.com

Printed in China

Library of Congress Cataloging-in-Publication Data

Head and neck cancer (2013)
Head and neck cancer : a multidisciplinary approach / authors, Louis B. Harrison, Roy B. Sessions, Merrill S. Kies.—Fourth Edition.
p. ; cm.
Includes bibliographical references and index.
ISBN 978-1-4511-4487-1 (alk. paper)
I. Harrison, Louis B., editor of compilation. II. Sessions, Roy B., editor of compilation. III. Kies, Merrill S., editor of compilation. IV. Title.
[DNLM: 1. Head and Neck Neoplasms—therapy. 2. Head and Neck Neoplasms—diagnosis. WE 707]
RC280.H4
616.99'491—dc23

2013012304

To purchase additional copies of this book, call our customer service department at (800) 638-3030 or fax orders to (301) 223-2320. International customers should call (301) 223-2300.

Visit Lippincott Williams & Wilkins on the Internet: at LWW.com. Lippincott Williams & Wilkins customer service representatives are available from 8:30 am to 6:00 pm, EST.

10 9 8 7 6 5 4 3 2 1

CCS0713

HEAD AND NECK CANCER

A Multidisciplinary Approach

FOURTH EDITION

With great love, I dedicate this book to my wife, Ilene. I am so grateful for all that she has done to support me in our lives together. Without her, this book, and most everything else that I have accomplished, would not exist.

LBH

In each of the three previous editions of this book, I mentioned my family in the dedication ritual—those members alive and those who are but fond memories. My thoughts were reflective of affection and respect, those very emotions implicit in the current endeavor. I am confident, then, that all—past and present—will or would have conceded that my professional accomplishment are to a great extent related to the thousands of my patients who have made the journey through the anguish of cancer, some successfully, others not; and the ultimate dedication should be to them. Their plight has been the essence of my mission in life, and my admiration of their courage is at the very core of my contribution to this book. I thank them for trusting me in the hour of their misfortune.

RBS

With love and affection, my contribution to this book is dedicated to Diana, my wife and partner.

MSK

SPECIAL DEDICATION

Dr. Waun Ki Hong, MD, FACP, DMSc

We are honored to gratefully acknowledge Dr. Waun Ki Hong, who, with Lou Harrison and Roy Sessions, conceived and was a founding editor of *Head and Neck Cancer: A Multidisciplinary Approach*. In many ways, this textbook is a literary projection and reflection of Dr. Hong. He has been and continues to be devoted to learning, scholarship, and the comprehensive evaluation and care of the broad spectrum of cancer patients. He has been a keen innovator and a leader paving the way to multidisciplinary thinking, utilizing physical examination skills, new imaging technologies, and creative colleagues from other specialties to develop and test new treatment strategies. He has long been engaged in blending the skills and talents of clinicians and clinical investigators to foster advances in patient care, constantly challenging the status quo.

Dr. Hong is Professor and Head of the Division of Cancer Medicine and Vice Provost for Clinical Research at The University of Texas MD Anderson Cancer Center. He obtained his medical degree from the Yonsei University School of Medicine, Korea, a medical residency at the Boston Veterans Affairs (VA) Medical Center, and fellowship in medical oncology at Memorial Sloan-Kettering Cancer Center of New York. He is an American Cancer Society professor and the Samsung Distinguished University Chair in cancer medicine. As the elected president of the AACR in 2001, he was influential in expanding the organization's international membership, and he has played an immense role in promoting multidisciplinary translational cancer research among physician-scientists worldwide. He has also played a pivotal role in shaping national public policy for cancer care and research in his commitment to the work of the National Cancer Institute. He has been the lead editor for numerous books, authored major treatises, and published 700 articles in scientific journals.

One story illustrates Dr. Hong's innovative thinking. As a young medical oncologist at the Boston VA, in 1979, he was one day called to the operating room by Stuart Strong, who was about to perform a total laryngectomy on a patient with clinical stage T4 squamous cancer. Dr. Hong had administered induction chemotherapy, and a wondrous, complete tumor response had occurred—so, now what to do? Of course, this led to formal clinical trials and, ultimately, the VA Cooperative Group study that showed the curative potential for chemotherapy and radiation, a nonsurgical and organ-preserving strategy that continues to be practiced in various platforms and, with many modifications later, throughout the world to benefit thousands of patients. He is renowned for seminal research in the role of retinoids in normal tissue biology and carcinogenesis, the broad area of chemoprevention of cancer, and importantly in the development of the methodology for cancer-prevention trials. His work has impacted the conduct of medical care for patients at risk of upper aerodigestive tract, breast, gastrointestinal, and genitourinary malignancies. Most recently, he spearheaded a remarkable new strategy for the systemic treatment of patients with advanced solid cancers. In the setting of progressive non–small cell lung cancer, in patients previously exposed to conventional therapies, he developed a platform for a fresh tumor biopsy at the time of enrollment and then an assignment to experimental therapies based on molecular assessments. He demonstrated that the approach is workable and has provided a blueprint for the conduct of future trials of molecular-targeted therapy across several solid tumors.

A centerpiece of current work is devotion to and mentoring of junior colleagues and fellows. Dr. Hong works vigorously within the MD Anderson fellowship program, with physician leaders and the fellows and students. Still directly caring for patients, he always has time to put his hand on young shoulders and show them the way. He sincerely cares about the future of both patients and the doctors who treat them.

To Dr. Hong, we offer our deepest appreciation for your devotion to and study of cancer medicine and for being a role model for the young and not-so-young, for all of us.

The Editors

LIST OF ASSOCIATE EDITORS

CONTRIBUTING AUTHORS

Akash Anand, MD
Clinical Assistant Professor
Department of Otolaryngology–Head and Neck Surgery
Ochsner Medical Center
New Orleans, Louisiana

K. Kian Ang, MD, PhD
Gilbert H. Fletcher Distinguished Memorial Chair, Professor
Department of Radiation Oncology
University of Texas MD Anderson Cancer Center
Houston, Texas

Bridget Bennett, MS, RD
Oncology Nutritionist
Continuum Cancer Centers of New York
New York, New York

Jeffrey A. Bennett, MD
Assistant Professor
Department of Radiology
University of Florida
Gainesville, Florida

Daniel Buchbinder, DMD, MD
Professor of Clinical Maxillofacial and Oral Surgery
Mount Sinai School of Medicine
Chief, Division of Maxillofacial Surgery
Department of Otolaryngology
Beth Israel Medical Center
New York, New York

Kenneth D.Burman, MD
Chief, Endocrine Section
MedStar Washington Hospital Center
Professor, Department of Medicine
Georgetown University
Washington, DC

Paul M. Busse, MD, PhD
Department of Radiation Oncology
Harvard Medical School
Clinical Director
Chief, Head and Neck Oncology Service
Department of Radiation Oncology
Massachusetts General Hospital
Boston, Massachusetts

James Kenneth Byrd, MD
Clinical Instructor
Department of Otolaryngology
University of Pittsburgh Medical Center
Pittsburgh, Pennsylvania

Joseph A. Califano, MD
Professor
Department of Otolaryngology–Head and Neck Surgery
Johns Hopkins Medical Institutions
Medical Director
Johns Hopkins Head and Neck Surgery
Milton J. Dance Head and Neck Center
Greater Baltimore Medical Center
Baltimore, Maryland

Elise Carper, RN, MA, ANP-BC, AOCN
Director of Nursing
Department of Radiation Oncology
Continuum Cancer Centers of New York
New York, New York

Mark S. Chambers, DMD, MS
Professor and Chief, Section of Oral Oncology and Maxillofacial Prosthodontics
Department of Head and Neck Surgery
University of Texas MD Anderson Cancer Center
Houston, Texas

Anthony T. C. Chan, MD, FRCP
Professor of Clinical Oncology
Chairman and Chief of Service
Department of Clinical Oncology
Prince of Wales Hospital
Director
Hong Kong Cancer Institute and Sir YK Pao Centre for Cancer
Assistant Dean (External Affairs)
The Chinese University of Hong Kong
Hong Kong, China

Jimmy Yue Wai Chan, MS, FRCSE, FHKAM (Surg)
Assistant Professor
Department of Surgery
University of Hong Kong
Hong Kong, China

Steven S. Chang, MD
Resident
Department of Otolaryngology–Head and Neck Surgery
Johns Hopkins Medical Institutions
Baltimore, Maryland

Allen M. Chen, MD
Associate Professor
Director, Residency Training Program
Department of Radiation Oncology and Otolaryngology–Head and Neck Surgery
University of California, Davis, Comprehensive Cancer Center
Sacramento, California

Walter H. Choi, MD
Attending Radiation Oncologist
Department of Radiation Oncology
Beth Israel Medical Center, St. Luke's and Roosevelt Hospitals
Assistant Professor of Radiation Oncology
Albert Einstein College of Medicine
New York, New York

Christine H. Chung, MD
Associate Professor
Department of Oncology and Otolaryngology–Head and Neck Surgery
Johns Hopkins University
Baltimore, Maryland

Charles S. Coffey, MD
Assistant Professor
Department of Surgery
Head and Neck Surgical Oncology
University of California San Diego Medical Center and Veterans Administration San Diego Healthcare
San Diego, California

Ezra E. W. Cohen, MD
Associate Professor of Medicine
Co-Director of the Head and Neck Cancer Program
Fellowship Program Director for Hematology/Oncology
Department of Medicine, Section of Hematology/Oncology
University of Chicago Medicine and Biologic Sciences
Chicago, Illinois

Jean-Marc Cohen, MD
Director of Cytopathology
Department of Diagnostic Pathology and Laboratory Medicine
Phillips Ambulatory Cancer Center
Beth Israel Medical Center
New York, New York

Peter D. Costantino, MD
Executive Director, New York Head and Neck Institute
Senior Vice President, Otolaryngology–Head and Neck Surgery Service Line, North Shore–LIJ Health System
Director, Center for Cranial Base Surgery, New York Head and Neck Institute
New York, New York

Bruce Culliney, MD
Co-Director, Head and Neck Medical Oncology
Continuum Cancer Centers of New York
Attending Medical Oncologist
Beth Israel Medical Center
Assistant Professor of Medicine
Albert Einstein College of Medicine
New York, New York

Bruce J. Davidson, MD, FACS
Professor and Chairman
Department of Otolaryngology–Head and Neck Surgery
Georgetown University Medical Center
Washington, DC

Michael A. Davies, MD, PhD
Assistant Professor
Department of Melanoma Medical Oncology
University of Texas MD Anderson Cancer Center
Houston, Texas

Terry A. Day, MD, FACS
Professor and Director, Division of Head and Neck Oncology
Department of Otolaryngology–Head and Neck Surgery
Head and Neck Tumor Center
Hollings Cancer Center
Medical University of South Carolina
Charleston, South Carolina

Daniel G. Deschler, MD, FACS
Professor
Department of Otology and Laryngology
Harvard Medical School
Director, Division of Head and Neck Surgery
Department of Otolaryngology–Head and Neck Surgery
Massachusetts Eye and Ear Infirmary
Boston, Massachusetts

Jonas A. de Souza, MD
Instructor of Medicine
Department of Medicine, Section of Hematology/Oncology
University of Chicago Medicine and Biological Sciences
Chicago, Illinois

James E. Dolan, MS
Lead Physicist
Beth Israel Medical Center
New York, New York

Avraham Eisbruch, MD
Associate Chair for Clinical Research
The Newman Family Professor of Radiation Oncology
Department of Radiation Oncology
University of Michigan
Ann Arbor, Michigan

Kevin S. Emerick, MD
Assistant Professor
Department of Otology and Laryngology
Harvard Medical School
Department of Otolaryngology
Massachusetts Eye and Ear Infirmary
Boston, Massachusetts

Ramon M. Esclamado, MD
Richard H. Chaney Sr. Professor and Chief
Division of Otolaryngology–Head and Neck Surgery
Department of Surgery
Duke University
Durham, North Carolina

Robert L. Ferris, MD, PhD
Professor and Chief
Division of Head and Neck Surgery
Associate Director for Translational Research
Co-Leader, Cancer Immunology Program
University of Pittsburgh Cancer Institute
Pittsburgh, Pennsylvania

Alice Fox, DrPH, PA-C
Liaison, Department of Pain Medicine and Palliative Care
Continuum Cancer Centers of New York
New York, New York

Matthew G. Fury, MD, PhD
Assistant Attending Physician
Head and Neck Oncology Service
Department of Medicine
Memorial Sloan-Kettering Cancer Center
Assistant Professor of Medicine
Weill Cornell Medical College
New York, New York

Paul A. Gardner, MD
Assistant Professor
Department of Neurological Surgery
University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania

M. Boyd Gillespie, MD
Associate Professor, Otolaryngology
Hollings Cancer Center
Medical University of South Carolina
Charleston, South Carolina

Patrick Gullane, CM, MB, FRCSC, FACS, FRACS(Hon), FRCS(Hon), FRCSI(Hon)
Wharton Chair in Head and Neck Surgery
Professor Department of Otolaryngology–Head and Neck Surgery
Professor of Surgery
University of Toronto
Toronto, Ontario, Canada

Abhda A. Gupta, MD
Assistant Professor
Department of Paediatrics
University of Toronto
Medical Oncologist
Division of Medical Oncology
Princess Margaret Hospital
Toronto, Ontario, Canada

Bruce G. Haffty, MD
Professor and Chairman
Department of Radiation Oncology
UMDNJ–Robert Wood Johnson University Hospital
Associate Director
Cancer Institute of New Jersey
New Brunswick, New Jersey

Matthew Halpern, MD
Private Practice
Mohs Micrographic Surgery and Reconstruction
Wynnewood, Pennsylvania

Paul M. Harari, MD
Jack Fowler Professor and Chairman
Department of Human Oncology
University of Wisconsin School of Medicine and Public Health
Madison, Wisconsin

Louis B. Harrison, MD, FASTRO
Physician-in-Chief
Continuum Cancer Centers of New York
Chairman and Gerald J. Friedman Chair of Radiation Oncology
Beth Israel Medical Center, St. Luke's and Roosevelt Hospitals
Professor of Radiation Oncology and Otorhinolaryngology–Head and Neck Surgery
Albert Einstein College of Medicine
New York, New York

Henry T. Hoffman, MD
Professor, Department of Otolaryngology–Head and Neck Surgery
Professor, Department of Radiation Oncology
University of Iowa College of Medicine
Iowa City, Iowa

Theresa M. Hofstede, DDS
Assistant Professor
Department of Head and Neck Surgery
University of Texas MD Anderson Cancer Center
Houston, Texas

F. Christopher Holsinger, MD, FACS
Associate Professor
Department of Head and Neck Surgery
University of Texas MD Anderson Cancer Center
Houston, Texas

Waun Ki Hong, MD
Professor
Department of Thoracic/Head and Neck Medical Oncology
Head
Division of Cancer Medicine
University of Texas MD Anderson Cancer Center
Houston, Texas

Joshua D. Hornig, MD, FRCS(C)
Associate Professor
Department of Otolaryngology–Head and Neck Surgery
Director of Plastic and Reconstructive Surgery
Medical University of South Carolina
Charleston, South Carolina

Kenneth S. Hu, MD
Co-Director, Institute of Head and Neck and Thyroid Cancer
Continuum Cancer Centers of New York
Director, Radiation Oncology Programs
New York Eye and Ear Infirmary
Attending Radiation Oncologist
Beth Israel Medical Center, St. Luke's and Roosevelt Hospitals
Associate Professor of Radiation Oncology
Albert Einstein College of Medicine
New York, New York

Katherine A. Hutcheson, PhD
Assistant Professor
Department of Head and Neck Surgery
Section of Speech Pathology and Audiology
University of Texas MD Anderson Cancer Center
Houston, Texas

Adam S. Jacobson, MD
Attending Otolaryngologist–Head and Neck Surgeon
Department of Otolaryngology–Head and Neck Surgery
Beth Israel Medical Center
Assistant Professor of Otolaryngology–Head and Neck Surgery
Albert Einstein College of Medicine
New York, New York

Sung Kim, MD
Assistant Professor
Department of Radiation Oncology
UMDNJ–Robert Wood Johnson University Hospital
Cancer Institute of New Jersey
New Brunswick, New Jersey

Wayne M. Koch, MD
Professor
Department of Otolaryngology–Head and Neck Surgery and Oncology
Director, Head and Neck Division
Johns Hopkins Hospital
Baltimore, Maryland

Tim J. Kruser, MD
Chief Resident
Department of Human Oncology
University of Wisconsin School of Medicine and Public Health
Madison, Wisconsin

Michael E. Kupferman, MD
Associate Professor
Department of Head and Neck Surgery
University of Texas MD Anderson Cancer Center
Houston, Texas

Cathy L. Lazarus, PhD, CCC-SLP, BRS-S, ASHA Fellow
Associate Professor
Department of Otorhinolaryngology–Head and Neck Surgery
Albert Einstein College of Medicine
Research Director
Thyroid Head and Neck Research Center
Thyroid Head and Neck Cancer (THANC) Foundation
Beth Israel Medical Center
New York, New York

Nancy Lee, MD
Associate Attending
Department of Radiation Oncology
Memorial Sloan-Kettering Cancer Center
New York, New York

James C. Lemon, DDS
Private Practice
Covenant Medical Center
University Medical Center
Lubbock, Texas

Eric J. Lentsch, MD
Associate Professor
Department of Otolaryngology–Head and Neck Surgery
Medical University of South Carolina
Charleston, South Carolina

Jan S. Lewin, PhD
Professor
Department of Head and Neck Surgery
Section Chief
Speech Pathology and Audiology
University of Texas MD Anderson Cancer Center
Houston, Texas

Zujun Li, MD
Co-Director, Head and Neck Medical Oncology
Continuum Cancer Centers of New York
Assistant Professor of Medicine
Albert Einstein College of Medicine
New York, New York

Scott M. Lippman, MD
Director
University of California San Diego Moores Cancer Center
La Jolla, California

Barry T. Malin, MD, MPP
Assistant Professor
Attending Physician
Department of Otolaryngology
Medical University of South Carolina
Charleston, South Carolina

Spiros Manolidis, MD
Associate Professor
Otolaryngology–Head and Neck Surgery
Skull Base Surgery
Albert Einstein College of Medicine
Beth Israel Medical Center
New York, New York

Jack W. Martin, DDS, MS
Professor
Section of Oncologic Dentistry
Department of Head and Neck Surgery
University of Texas MD Anderson Cancer Center
Houston, Texas

Andrew A. McCall, MD
Assistant Professor
Department of Otolaryngology
University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania

Andrew J. McWhorter, MD
Department of Otolaryngology–Head and Neck Surgery
Louisiana State University Health Sciences Center
New Orleans, Louisiana
Director of OLOL/LSU Voice Center
Our Lady of the Lake Regional Medical Center
Baton Rouge, Louisiana

Par S. Mehta, MD
Attending Physician
Department of Radiation Oncology
Rush Copley Cancer Care Center
Aurora, Illinois

Vikas Mehta, MD
Fellow
Department of Otolaryngology/Head and Neck Surgery
University of Pittsburgh Medical Center, Eye and Ear Institute
Pittsburgh, Pennsylvania

William M. Mendenhall, MD
Professor of Radiation Oncology
University of Florida
Department of Radiation Oncology
Shands Hospital Davis Cancer Center
Gainesville, Florida

Waleed F. Mourad, MD
Attending Radiation Oncology
Beth Israel Medical Center, St. Luke's and Roosevelt Hospitals
Clinical Instructor
Department of Radiation Oncology
Albert Einstein College of Medicine
New York, New York

Kenneth A. Newkirk, MD, FACS
Associate Professor
Department of Otolaryngology–Head and Neck Surgery
MedStar Georgetown University Hospital
Washington, DC

Brendan O'Connell, MD
Resident Physician
Department of Otolaryngology
Medical University of South Carolina
Charleston, South Carolina

Brian O'Sullivan, MD
Professor, Department of Radiation Oncology
University of Toronto
Head and Neck Oncology Site Chair
Radiation Oncology Sarcoma Site Chair
Princess Margaret Hospital
Toronto, Ontario, Canada

Devin J. Okay, DDS
Director, Division of Prosthodontics
and Maxillofacial Prosthetics
Division of Oral and Maxillofacial Surgery
Department of Otolaryngology–Head and Neck Surgery
Beth Israel Medical Center
New York, New York

Samuel L. Oyer, MD
Resident Physician
Department of Otolaryngology–Head and Neck Surgery
Medical University of South Carolina
Charleston, South Carolina

Nitin A. Pagedar, MD
Assistant Professor
Department of Otolaryngology–Head and Neck Surgery
University of Iowa
Iowa City, Iowa

Mark S. Persky, MD
Professor and Chairman
Department of Otolaryngology–Head and Neck Surgery
Beth Israel Medical Center
Physician-in-Chief, Continuum Otolaryngology Service Line
Professor of Clinical Otolaryngology
Albert Einstein College of Medicine
New York, New York

David G. Pfister, MD
Attending Physician
Chief, Head and Neck Oncology Service
Department of Medicine
Co-leader, Head and Neck Cancer Disease Management Team
Memorial Sloan-Kettering Cancer Center
Professor of Medicine
Weill Cornell Medical College
New York, New York

Liana Puscas, D, MHS
Assistant Professor
Division of Otolaryngology–Head and Neck Surgery
Department of Surgery
Duke University
Durham, North Carolina

Harry Quon, MD, MS
Associate Professor
Co-Director, Head and Neck Multidisciplinary Program
Department of Radiation Oncology and Molecular
Radiation Sciences
Department of Otolaryngology–Head and Neck Surgery
Department of Oncology
Baltimore, Maryland

Desiree Ratner, MD
Director, Comprehensive Skin Cancer Program and
Dermatologic Surgery
Continuum Cancer Care Centers of New York
Professor of Clinical Dermatology
College of Physicians and Surgeons of Columbia University
New York, New York

Seth Resnick, MD
Chief, Chronic Pain and Recovery Center
Silver Hill Hospital
Assistant Professor
Department of Psychiatry
New York University
New York, New York

Nadeem Riaz, MD
Resident Physician
Memorial Sloan-Kettering Cancer Center
New York, New York

Pierre Saintigny, MD
Assistant Professor
Department of Thoracic/Head and Neck Medical Oncology
University of Texas MD Anderson Cancer Center
Houston, Texas

Diane Serra, RN, HN-BC, MS, LAc
Coordinator of Integrated Oncology
Continuum Cancer Centers of New York
New York, New York

Benjamin D. Smith, MD
Assistant Professor
Department of Radiation Oncology
University of Texas MD Anderson Cancer Center
Houston, Texas

Carl H. Snyderman, MD, MBA
Professor
Otolaryngology and Neurological Surgery
University of Pittsburgh School of Medicine
Co-Director
Center for Cranial Base Surgery
University of Pittsburgh Medical Center
Pittsburgh, Pennsylvania

Edward M. Stafford, MD
Otolaryngology–Head and Neck Surgery
Washington Ear, Nose and Throat
Washington, Pennsylvania

Erich M. Sturgis, MD, MPH
Professor of Surgery
Department of Head and Neck Surgery
Department of Epidemiology
University of Texas MD Anderson Cancer Center
Houston, Texas

Abtin Tabaee, MD
Director of Rhinology and Endoscopic Sinus Surgery
Department of Otolaryngology–Head and Neck Surgery
Beth Israel Medical Center
Assistant Professor
Department of Otorhinolaryngology–Head and Neck Surgery
Albert Einstein College of Medicine
New York, New York

Mark L. Urken, MD, FACS
Chief, Division of Head and Neck Surgical Oncology
Beth Israel Medical Center
Director, Division of Head and Neck Surgical Oncology
Continuum Cancer Centers of New York
Professor of Otolaryngology
Albert Einstein College of Medicine
New York, New York

Esther X. Vivas, MD
Department of Otolaryngology
University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania

Everett E. Vokes, MD
John E. Ultmann Professor of Medicine
Chairman, Department of Medicine and Physician in Chief
University of Chicago Medicine and Biologic Sciences
Chicago, Illinois

William Ignace Wei, MS, FRCS, FRCSE, FRACS(Hon), FACS(Hon), FHKAM(ORL), FHKAM(Surg)
Director
Li Shu Pui ENT, Head and Neck Surgery Center
Hong Kong Sanatorium and Hospital
Hong Kong, China

Bruce M. Wenig, MD
Chairman, Department of Diagnostic Pathology and Laboratory Medicine
Beth Israel Medical Center, St. Luke's and Roosevelt Hospitals
Professor of Pathology
Albert Einstein College of Medicine
New York, New York

John W. Werning, MD, DMD
Associate Professor
Department of Otolaryngology
University of Florida
Gainesville, Florida

William N. William Jr., MD
Assistant Professor
Department of Thoracic/Head and Neck Medical Oncology
University of Texas MD Anderson Cancer Center
Houston, Texas

Lori J. Wirth, MD
Assistant Professor
Department of Medicine
Harvard Medical School
Medical Director, Head and Neck Oncology
Department of Medicine
Massachusetts General Hospital
Boston, Massachusetts

Rudolph Woode, MD
Chief Physicist
Beth Israel Medical Center
New York, New York

Marc S. Zimbler, MD
Assistant Professor
Department of Otolaryngology–Head and Neck Surgery
Albert Einstein College of Medicine
Director of Facial Plastic Surgery
Department of Otolaryngology–Head and Neck Surgery
Beth Israel Medical Center
New York, New York

PREFACE

We take considerable pride in the fact that the integrity of *Head and Neck Cancer: A Multidisciplinary Approach (HNC)* has been retained through four consecutive editions. HNC I (1999) started a crescendo of learning for all of us, and with each subsequent book, we sought and found ways to do a better job. The planners have always been keenly in tune with the concept that a continuance of book quality must never be based on previous laurels and accolades. As a means of separating this statement from the theoretical, we cite the example of the first edition of HNC that won a prestigious international literary award, by which we were certainly humbled and honored. To assume that to be the apogee of quality, however, would almost certainly have been followed in subsequent editions by a diminution of substance and book vitality. Unlike dated works of literature, such as fiction and history, a book like HNC is a relentlessly moving target, and failure to continually address the rapidly evolving science within the relevant body of knowledge would invite obsolescence. Accordingly, we have launched every new edition with this attitude and these realizations. Each time, the challenges were substantial, but were surmounted.

We set out to create the standard of excellence in the head and neck oncology literature, but subsequently came to realize that it is as much of a challenge to sustain the high level achieved as to create it. Our retrospective analysis of the elusive reasons for the achievement invariably led us back to several key axioms: First, literary vitality and dynamism are best achieved by a formula of staggered rotations of authors; that is to say, partial change for a given edition. This practice injects new thinking into a text while fostering continuity from edition to edition, and additionally, generates an important byproduct by incorporating fresh young academics from the rich talent pool available. Properly energized, these new contributors approach their task with a serious sense of responsibility to the book, to the profession, and ultimately to cancer patients. Another key to the formula is the avoidance of repeating the same book that seems to result from merely tweaking old data, only to have repeated the same chapter, rather than critically reading and rethinking each that was in the previous edition—not necessarily always starting from scratch, but at a minimum, divesting treasured thoughts and words that are better captured by change. Noted authors are often loath to do this, and finding an appropriate compromise with the editors represents the sine qua non of literary collaboration. Thus, each edition has been a fresh, new book. However, although new, each is largely grounded in our long-held philosophy that continues to recognize and emphasize scholarship and academic integrity, places equal importance on "why" and "how to," and embraces the notion that in the contemporary world of oncology, the overall goal should be to maximize the chance for cure, but not at any cost; that is to say, quality of life and death issues must take center stage in all cancer management decisions and strategies. Treatment that was once based almost solely on mechanical audacity and elegance has matured to include intellectual creativity. That is not meant to suggest that surgery, radiation, medical treatments, and other standard methods are no longer important, but instead, it is the recognition that science—molecular and genetic—is the critical part of the present and the future canon. In this, the fourth edition of *HNC*, the reader will note that there are several key chapters that go well beyond their respective predecessor chapters in addressing the scientifically relevant material of the particular subject discussed. That being said, in this edition of *HNC*, we have also significantly increased and improved the technique sections. We believe, then, that throughout multiple editions, we have adapted and have embraced change, brevity, and efficiency, the combination of which makes this latest work a readable and imminently practical companion for all students of head and neck oncology.

As in the last edition, we have made extensive use of algorithms and guidelines in the quest for standardization of workup and management strategies. While doing so, we have attempted to incorporate flexibility in order to accommodate the substantial variability between patients. And finally, as proof that the book's title is more than a catchy marketing ploy, the reader will easily discover that the multidisciplinary philosophy of dealing with this dreaded complex of diseases is embedded throughout the corpus of the work.

Collaborating with a world-class publishing organization improves the entire working environment in undertaking such a substantial endeavor, and as it relates to the team at Lippincott Williams & Wilkins, this is most assuredly an understatement.

Finally, we feel that words alone fail to describe the heartfelt gratitude of the editors for the time commitment and other sacrifices of the authors who have labored to finalize this project. As usual, the busiest of scholars have somehow found time to hammer out yet another project despite their already saturated agendas—we thank them and their families for paying the substantial personal price to thus enrich the scientific literature.

ACKNOWLEDGMENTS

First, we would like to thank the wonderful staff at Lippincott Williams and Wilkins. This especially includes Mr. Jonathan Pine, whose wisdom has guided us through several editions. We would also like to thank Senior Product Manager Emilie Moyer and Development Editor Martha Cushman.

The editors want to express their deep appreciation and respect to Mr. John Battis, who has been an indispensable partner in the last three editions of this textbook. His commitment to perfection and professionalism is a hallmark that all of us should aspire to achieve.

PERSONAL THOUGHTS ON BEING AN ONCOLOGIST

This fourth edition of our textbook will be my last as an editor. My regret in stepping down relates mainly to the loss of the association with my co-editors and the publisher. Our professional chemistry will be a fond memory throughout the balance of my life. However, the inexorability of life's accrual and retirement are real, and my pathway is clear. In signing off, however, I have asked for the indulgence of my co-editors by allowing me to write a personalized essay of sorts. I thank them for graciously accepting this departure from the norm in which I expound on matters thus far only slightly addressed in our literature.

For appropriate reasons, psychosocial and ethical matters that are relevant to the moral foundation and behavior of oncologists have been infrequently mentioned in the literature. Mainstream cancer textbooks have always been devoted to the disease—its biology, pathology, pathogenesis, treatment, etc., without dwelling on the transcendental matters that relate to interaction with and care of cancer patients. Such a statement is in no way intended as an indictment of what has been written; instead, it is merely an acknowledgment of fact. In this discussion, therefore, I have attempted to touch on some of the more important of these issues, and in doing so I seek to create an imperative for oncologists that includes sensitivity and intuitiveness, in addition to intellectualism and technical skills. These thoughts are not limited to a particular oncology specialty; instead, they apply consistently to the entire cancer playbook. Unquestionably, esoteric thoroughness is beyond the capacity of this overview, but it is my hope that the reader will be stimulated to pursue further studies and deeper consideration of these matters.

Especially as it pertains to the medical profession, the desire to serve fellow humans is vocational, and the inherently strong and consuming passion required to function at this level goes well beyond routine ambition. This intensity is even more relevant to the life of an oncologist—whether focused on radiation, surgery, medical, or psycho-oncology; all are tethered to potentially insatiable emotional demands of a very needy patient population. While potentially appealing to one's vanity, these demands—unique in medicine—can consume an idealistic oncologist who is incapable of compartmentalization of life's priorities.

Being a *physician* is a privilege, and sober responsibilities go with the title. Caring for cancer victims magnifies this sobriety because the typical patient—frightened, vulnerable, and threatened to the core—justifiably expects compassion, a commitment to excellence, a seriousness of purpose, and an ethos of integrity and humanity from the cancer team in general, and especially from the cancer physician.[1] Whether justified or not, when responsible for cancer patients, the stakes are generally perceived to be higher than those associated with other maladies. Not surprisingly, being an oncologist involves a life with little room for frivolity or casualness, and at a minimum, dilettantish physicians who value style over substance should avoid the oncology specialties. Obviously, style and substance are not mutually exclusive, but in the personality of oncologists, the former must be substantially subordinated to the latter. Aspirants to these specialties must realize that to perform in this arena is neither an ordinary responsibility nor a casual commitment; none in medicine should be, but with cancer, there is usually heightened passion and drama. What is euphemistically labeled *the cancer experience* is can be an extraordinary test for physician and patient alike.

It is essential, then, for those on this career path to understand that oncologists are required to function with a heightened emotional capability—often in an atmosphere of sadness and fear. At a minimum, it's challenging to care for patients whose dependence, vulnerability, and psychological fragilities are extraordinary. Acceptance of this fact is fundamental to "Oncology 101." With that said, given the correct physician motivation, the experience can be deeply rewarding and the lifestyle very workable.

Even though most sophisticated cancer teams include psychiatric and other support colleagues, their participation, no matter how effective, should not preclude the involvement of the whole team; said another way, the emotional responsibilities of the oncologist are in no way mutually exclusive from those of the psycho-oncologist or social worker. Essentially, the psychological support from the cancer team should be circumferential.

The psychic issues at play between the oncologist and the patient are inextricably intertwined—and by the physician understanding the patient better, and by the patient understanding what is faced by the physician, *the cancer experience* is enhanced.

For starters, the repeated witnessing of agony and death can be emotionally erosive, and the personal price paid by oncologists can be substantial. That said, many of the contemporary treatment strategies are successful, and the rewards seem to consistently replenish our spirit. It is important, however, to recognize a consistent human characteristic present in the scenario just described; dealing with the travails associated with cancer can lead to an involuntary response of self-protection in which oncologists unintentionally shield themselves emotionally by being remote from their patients. This is similar to other human behavior in which barriers are erected out of fear of emotional pain. It is my observation that young physicians are more prone to such emotional defensiveness, but with maturation and self-analysis, many come to realize that the real rewards for a doctor come from the bonding and the affection that they sought to avoid in their younger years.

With emotional maturation, the oncologist hopefully begins to appreciate the rewards of success—not by always conquering the disease mind you, because unfortunately such is not the case—but by finding the human connection that helps guide and support patients in their time of extreme need. It has always amazed me how much genuine affection and gratitude cancer patients are capable of doling out. So when others remark that it must be discouraging to be an oncologist, my response is that while emotional and sometimes even depressing, quite the opposite from discouragement is the norm. On the contrary, gratification and satisfaction are abundant.

Absent an emotional commitment on the part of the oncologist—that is, failing to lower those self-imposed protective barriers—both the patient and the physician suffer. In fact, it is my unscientific observation that the latter's failure to commit can lead to crippling professional unhappiness. Those considering oncology as an avenue of study should, therefore, be self-analytical in this regard; if one is unwilling to commit emotionally, a psychologically less demanding specialty should be considered.

From the patient's standpoint, the psychic plight cannot be overstated. Admittedly, the intensity of fear—that most primordial of emotions—varies with the degree of seriousness of the malignancy and also from patient to patient. With some exceptions, however, these instinctive feelings are consistent and

strong. How various patients handle and respond to these feelings is a subject of study that the emotionally astute oncologist must address. Most have no special training in psychology, and the level of perceptiveness and concern for the more spiritual aspects of doctor–patient interactions is largely inherent to the physician's persona.

The fears of these patients vary from simple to complex and range from low grade to paralytic. Whether cured or not, the cancer victim often dwells on a kaleidoscope of perceived threats—financial matters, family well-being, loss of dignity, pain, deformity, dependency with lose of autonomy, being abandoned and alone, and obviously death itself—all of which can be catalyzed by an emotionally uninvolved cancer team that minimizes these deeply rooted concerns. The take-home message of this general subject is as with raising children, needs differ from one individual to the other—some patients require more attention, some less; and if a physician does not have the flexibility to cater to this diverse emotional appetite, they should work in another specialty of medicine.

In addition to compromising their own chance of achieving professional fulfillment, the unwillingness of an oncologist to contribute to the emotional equation between doctor and patient often stymies the latter's ability to develop hope. This is no small consideration because, in the practical world of cancer medicine, there is nothing psychologically more valuable for a patient than hope—but only when it is realistic and honest. Better for the doctor to be noncommittal than to encourage false hope, which is deceptive, and perhaps even a betrayal of sorts.

The importance of the relationship between hope and trust of one's physician is extraordinary, especially when discussing cancer—the two are closely linked. To trust is to have faith and confidence not only in the integrity and unselfishness, but especially the beneficence of the person in charge; bottom line, "Will my doctor do and advise what is best for me, and not because of curiosity or a result of stubbornness." For the oncologist to find a balance between empathy and guidance throughout the cancer journey is the sine qua non of good leadership—a quality that should be practiced by those who have accepted the responsibility for cancer victims. The paradigm is straightforward: good doctor/patient relations come out of honest and forthright dialog that is based on realism rather than paternalistic avoidance of unpleasant news. Such a relationship begets trust, which in turn begets acceptance of the inevitable as the patient is led to the conclusion of care, whether it is improvement or death. In order to accommodate this paradigm, however, hope must be redefined. Let me explain just what I mean.

Too often, physicians misunderstand hope by thinking only in terms of cure or remission. This flawed concept is common in the ever-optimistic oncology community—surgical, radiation, and medical alike. Hope can also be for a good death; for time to mend interpersonal bonds that are in disrepair; for resolution of feelings about divinity and a life after death; and, yes, for comforting loved ones who will be left behind. Never mind what the medical team deems important, the patient should be the author of the new standard, and it is the job of the physician to incorporate that into the dialog and the relationship. As a result of trust and creditable dialogue, a patient should be able to completely rely on unselfish guidance in making practical choices, especially at the end of life. In this state of mind, one is better able to find closure in life and an acceptance of death, both of which add tranquility to the final stage of existence.

Oncologists—even those with the best of intentions—too often fight *the battle* to excess, and in an effort to do something, use up valuable end-of-life time and resources. It is my belief that this desperate behavior in a sense reflects our society's refusal to admit the existence of death's power, and perhaps even death itself, and in this high-tech biomedical era, when the tantalizing possibility of miraculous cure is dangled before patient and family, the temptation to see therapeutic hope is great, even in those situations when common sense would suggest otherwise.[2]

So as to take this out of the realm of speculation, I point to a study reported in the *Annals of Internal Medicine*[3] that used patients from California and Massachusetts as a study cohort. All were 65 and older, and had died as a result of their cancer. In more than 20% of the study group, chemotherapy had been administered within 3 months prior to their death, and significantly, the cancer's likelihood of responsiveness to chemotherapy did not seem to influence whether dying patients received chemotherapy at the end of life. Use of chemotherapeutic agents was similar for patients with breast, colon, and ovarian malignancies and even for those with cancers that are generally considered unresponsive to chemotherapy, such as melanomas and those of the pancreas, liver, and kidney.[4] Circumstantial data from another study[5] showed that 20% of the Medicare cancer patients with metastasis who were analyzed had been started on a new chemotherapy regimen within two weeks of death. The implications of this are far reaching and profound and among cynics surely suggest monetary motives. One is left to speculate how these data would differ in a population of uninsured patients. In evaluating what seems like a system's error, the obvious question is that if there are incentives for oncologists to try more treatment despite minimal odds for success, why can't the reverse be implemented; that is to say, why can't there be disincentives to go for that long shot.

In deciding how much treatment is enough, the cancer physician must repeatedly address the question of what is in the best interest of the patient—that is to say, he/she should act with beneficence. Even if what is done turns out to be the wrong strategy, if the motive was in quest of the patient's benefit, it is morally defensible. This sounds simplistic, but in fact, pride, vanity, and other unresolved or perhaps even unrecognized psychic forces within a physician can complicate a patient's life and death. Physicians, like other talented and intelligent people, are not immune to the insecurity that seeks reassurance of their abilities, and whether realized or not, part of their self-image depends on success and failure in patient care. Additionally, many physicians are extraordinarily competitive, and the instinct to fight on can be strong. Some oncologists seem to feel obligated to explore every avenue of treatment, no matter how unlikely the benefit. Aside from this being void of beneficence, it is financially an unsupportable strategy. My plea in this regard is for an early reality check, since the treatment decisions made near the end of life are prone to propel a dying person in a senseless direction. That being said, it is important to concede the need for certain palliative surgical techniques that are humanely applicable to those approaching death. For example, in selective circumstances, operations such as a gastrostomy, a colostomy, or a tracheostomy can diminish the misery associated with intestinal and airway compromise. Active palliative care—surgery and occasionally targeted radiation therapy included—has an important role, provided implementation is based on humaneness and beneficence.

A vulnerable cancer patient's reliance on their oncologist can be extraordinary, and it is not unusual for the patient to look to that physician for advice and counsel on a variety of health-related matters—psychiatric, nutritional, and some unrelated to the primary disease of concern. This role of the "perceived expert" on all medical matters must be handled with tact, realism, humility, and always with graciousness and generosity. It's a simple thing to disavowal expertise, but while doing that, to show obvious interest by offering suggestions on some questions and by promoting appropriate referrals when indicated. In this day and age of subspecialization, it is important to remind ourselves that we are still physicians and we should still attempt to look after and care for the "whole patient."