

Cancer of the Oral Cavity, Pharynx and Larynx

Evidence-Based
Decision Making

Jesus E. Medina
Nilesh R. Vasan
Editors

 Springer

Cancer of the Oral Cavity, Pharynx and Larynx

Jesus E. Medina • Nilesh R. Vasan
Editors

Cancer of the Oral Cavity, Pharynx and Larynx

Evidence-Based Decision Making

 Springer

Editors

Jesus E. Medina
Department of Otolaryngology
College of Medicine
University of Oklahoma
Oklahoma City, OK, USA

Nilesh R. Vasani
Department of Otolaryngology
College of Medicine
University of Oklahoma
Oklahoma City, OK, USA

ISBN 978-3-319-18629-0 ISBN 978-3-319-18630-6 (eBook)
DOI 10.1007/978-3-319-18630-6

Library of Congress Control Number: 2016948221

© Springer International Publishing Switzerland 2016

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer International Publishing AG Switzerland

*To my wife Libby, a constant source
of inspiration!*

*To my children Katherine, Joey and Kristine,
their spouses and their children. They are
our joy and pride.*

Jesus E. Medina, M.D.

*“To my wife Dimple and sons Dylan
and Krish”*

Nilesh R. Vasani

Preface

The pursuit of knowledge is one of the fundamental pillars of medical professionalism. During the 8–10 years of medical education and residency training, physicians discipline themselves to acquire the knowledge needed to be able to diagnose and treat patients with different afflictions. The kind of knowledge we must pursue is described superbly by Sir William Osler, the late Regius Professor of Medicine at Oxford, in his book *Aequanimitas*:

A knowledge of the fundamental sciences upon which our art is based, ... not a smattering, but a full and deep acquaintance, not with all the facts, that is impossible, but with the great principles based upon them.

With the fast paced advances in medical technology and pharmacology, these principles evolve almost constantly, and we need to keep pace. Not too many years ago, conventional surgery and radiation therapy were the only treatment modalities available to treat cancers of the head and neck region. Today, the treatment of our patients can include transoral surgery using the laser or robotics, various modalities of radiation therapy such as IMRT or the proton beam, and a variety of drugs and bioactive agents. In addition to being able to counsel patients about the relationship of their cancer with tobacco and alcohol, we now must be able to talk to them intelligently about the human papilloma virus and its relationship to cancer.

An increasingly challenging decision-making process begins as soon as the history and clinical exam are completed. The clinician is now limited to obtaining only those diagnostic tests that are supported by evidence. While having an array of treatment modalities is clearly beneficial to our patients, the clinician must have a working knowledge of the rationale, advantages and disadvantages of each of them. Only then, each patient will be prescribed the most appropriate treatment.

The purpose of this book is to provide the clinician reader with a comprehensive, concise discussion of the best evidence available on which to base clinical decisions necessary in the course of managing patients with squamous cell carcinomas of the oral cavity, pharynx and larynx. The reason this is a timely addition to the literature is twofold. First, most clinical decisions in the management of cancers of the head and neck region are based on the results of a few controlled, randomized clinical

trials (Evidence Level I); most decision making is based on the results of case-control studies (Evidence Level II), descriptive studies, reports of expert committees, or opinions of respected authorities (Evidence Level III). Second, this information is scattered throughout the literature and often intermingled with information about other topics. Therefore, there is a need for a publication in which the evidence pertinent to making decisions regarding a particular clinical problem is distilled, from the literature, and is presented in a single, concise clinical situation-driven source.

We are indebted in this endeavour to the members of the Head and Neck Team at the University of Oklahoma Health Sciences for their valuable contributions.

Oklahoma City, OK, USA

Jesus E. Medina
Nilesh R. Vasani

Contents

1 Evidence-Based Medicine	1
Nilesh R. Vasani	
2 Oral Cavity Cancer	3
Jesus E. Medina, Nilesh R. Vasani, and Anthony Alleman	
3 Oropharynx Cancer	27
Nilesh R. Vasani, Jesus E. Medina, and Anthony Alleman	
4 Cancer of the Nasopharynx	51
Greg Kreml and Anthony Alleman	
5 Cancer of the Hypopharynx	65
Trinitia Y. Cannon and Keren Bartal	
6 Larynx Cancer	83
Jesus E. Medina	
Index	113

Chapter 1

Evidence-Based Medicine

Nilesh R. Vasan

Evidence-Based Medicine

Evidence-based medicine (EBM) can be defined as the application of best available evidence gained from the scientific method to clinical decision making [1]. Even though medicine is based on scientific advances, EBM aims to classify the “practice” of medicine by using levels of evidence based on the rigor of the study or trial to make either strong or weak recommendations for patient management. This can be for both diagnosis and treatment for various conditions. The idea for EBM is that patient management should be founded on the best and strongest available evidence and not the beliefs or entrenched dogma from physicians or experts.

The term “evidence based” was coined by David M. Eddy for his work on population-level policies [2]. But the term “evidence-based medicine” developed within clinical epidemiology. EBM can be applied to individuals as well as populations in regard to the effectiveness of a diagnostic test or treatment. Subsequently, a number of organizations developed EBM levels such as the US Preventative Services Task Force (USPSTF), the Centre for Evidence Based Medicine (CEBM), and the National Guideline Clearinghouse to name three. The underlying premise is the same in that the most robust and strongest available evidence is gained from randomized double-blinded control studies or meta-analyses whereas the weakest are from case reports. In this text, the authors have utilized the EBM classification from the USPSTF.

N.R. Vasan, M.D. (✉)
Department of Otorhinolaryngology, College of Medicine,
The University of Oklahoma, Oklahoma City, OK, USA
e-mail: nilesh-vasan@ouhsc.edu

This book describes the management of common head and neck malignancies using the best available evidence to date. The authors would like to challenge readers to critically evaluate their current management strategies using EBM and be open to new forms of diagnostic assessment and treatment if well-designed clinical studies demonstrate a significant improvement over current treatment protocols.

References

1. Timmermans S. *Health Aff (Millwood)*. 2005;24(1):18–28.
2. Eddy DM. Practice policies: guidelines for methods. *JAMA*. 1990;263(13):1839–41.

Chapter 2

Oral Cavity Cancer

Jesus E. Medina, Nilesh R. Vasan, and Anthony Alleman

Decisions in Clinical Evaluation

Clinical Situation

Sixty-year-old man who presents with a squamous cell carcinoma of the left floor of mouth clinically staged T2N0 (Fig. 2.1a).

The clinician managing this patient will face a number of critical clinical decisions in his diagnostic evaluation and treatment. One of these decisions is concerned with the appropriate assessment of the relationship of the tumor to the mandible.

What Is the Best Method to Assess Mandibular Invasion?

Accurate determination of the presence and extent of invasion of the mandible is important for staging purposes and to decide whether a resection of the mandible is necessary to remove the tumor adequately. If a resection of the mandible is deemed necessary, the surgeon must then decide whether it is appropriate to perform a marginal (rim resection), coronal (resection of the lingual table), or a segmental mandibulectomy (full-thickness segment of the mandible).

In addition to the clinical exam, several imaging studies are used by clinicians for this purpose. Considerable debate exists in the literature regarding the optimal imaging modality or combination of modalities needed for preoperative assessment

J.E. Medina, M.D. (✉) • N.R. Vasan, M.D.
Department of Otorhinolaryngology, College of Medicine, The University of Oklahoma,
Oklahoma City, OK, USA
e-mail: jesus-medina@ouhsc.edu

A. Alleman, M.D.
Department of Radiology, College of Medicine, The University of Oklahoma,
Oklahoma City, OK, USA