

HOSPITAL PHYSICIAN®

ONCOLOGY BOARD REVIEW MANUAL

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The *Hospital Physician Oncology Board Review Manual* is a study guide for fellows and practicing physicians preparing for board examinations in oncology. Each manual reviews a topic essential to the current practice of oncology.

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Locally Advanced Squamous Cell Carcinoma of the Head and Neck

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Cover Illustration by Kathryn K. Johnson

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Locally Advanced Squamous Cell Carcinoma of the Head and Neck

Lori J. Wirth, MD

INTRODUCTION

The treatment of locally advanced squamous cell carcinoma of the head and neck (SCCHN) has evolved significantly over the last 2 decades. Advances in surgery have included improvements in reconstructive techniques and the development of larynx-sparing surgeries, such as supracricoid partial laryngectomy. Radiation techniques have also improved. For example, intensity modulated radiotherapy technology targets tumor and spares normal tissues better than older 3-dimension conformal techniques. Studies have also shown that outcomes in SCCHN can be improved by changing the schedule of radiotherapy from conventional once-daily treatment to an altered fractionation schedule. Perhaps even more dramatically, however, is that the treatment of locally advanced SCCHN has shifted from management governed primarily by surgery and radiation oncology to a multidisciplinary approach that incorporates medical oncology as an integral part of therapy. Since the landmark Veterans Affairs (VA) Laryngeal Cancer Study succeeded in establishing chemotherapy plus radiation as an organ-preserving alternative for patients with advanced laryngeal carcinoma, combined modality therapy has become an alternative for many SCCHN patients.¹ This review will focus on the anatomic, pathologic, and clinical features of SCCHN and discuss current treatment approaches for locally advanced SCCHN, particularly those involving combined modality therapy.

OVERVIEW OF SCCHN

More than 40,000 head and neck cancers will occur in the United States in 2007, making cancers of the head and neck one of the 10 most common cancers in the country.² Squamous cell carcinomas (SCCs) arising in the oral cavity, oropharynx, hypopharynx, and larynx account for most head and neck cancers. Other

entities that occur in the head and neck region include nasopharyngeal, sinonasal, salivary gland, and thyroid cancers; a discussion of these entities is beyond the scope of this review.

ANATOMIC CONSIDERATIONS

Despite sharing SCC histology and the features of rich innervation, lymphatic drainage, and vascular supply, head and neck cancers differ dramatically from each another. Anatomic differences between head and neck subsites account for most of the variation. For example, SCCHNs arising in the oropharynx can grow into large primary tumors before becoming clinically detectable. These tumors often spread to bilateral cervical lymph nodes due to generous lymphatic drainage in the region and thus carry a greater risk of distant metastasis than some other subsites. In contrast, nodal involvement is uncommon in laryngeal carcinoma, as is distant metastasis, because larynx tumors usually cause hoarseness that prompts early evaluation, and there is a relative paucity of laryngeal vasculature and lymphatic drainage as compared with other head and neck subsites.

Underlying etiologic features add to this variability. Oropharyngeal carcinomas frequently are associated with the presence of human papillomavirus (HPV) 16, and these HPV 16-related cancers occur more frequently in younger patients with less exposure to tobacco and alcohol.³⁻⁷ However, cancers of the larynx rarely occur in non-smokers and often present at an early stage, as hoarseness that prompts medical attention will occur even with small primary tumors. Unlike oropharyngeal SCCHN, HPV 16 is not thought to cause laryngeal cancers.

Clinical features at presentation vary due to anatomic location. Likewise, treatment approach can vary substantially from site to site. These topics will be discussed in the appropriate sections of this review (*see* "Treatment" on p. 6).

ETIOLOGIC FACTORS

The greatest risk for developing SCCHN derives