Cancer of the Oral Cavity

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KEYWORDS

• Oral cavity cancer • Oral cancer • Squamous cell carcinoma
• Head and neck cancer

KEY POINTS

- Cancer of the oral cavity is a common malignancy in the United States and around the world.
- The standard of care is primary surgical resection with or without postoperative adjuvant therapy.
- Multidisciplinary treatment is crucial to improve the oncologic and functional results in patients with oral cancer.
- Primary and secondary prevention of oral cancer requires education about lifestyle-related risk factors, and improved awareness and tools for early diagnosis.

INTRODUCTION

Cancer of the oral cavity is one of the most common malignancies,[1] especially in developing countries but also in the developed world.[2] Squamous cell carcinoma (SCC) is the most common histology, and the main etiologic factors are tobacco and alcohol use.[3] Although early diagnosis is relatively easy, presentation with advanced disease is not uncommon. The standard of care is primary surgical resection with or without postoperative adjuvant therapy. Improvements in surgical techniques combined with the routine use of postoperative radiation or chemoradiation therapy have resulted in improved survival statistics over the past decade.[4] Successful treatment of patients with oral cancer is predicated on multidisciplinary treatment strategies to maximize oncologic control and minimize impact of therapy on form and function.

ANATOMY OF THE ORAL CAVITY

The oral cavity extends from the vermilion border of the lips to the circumvallate papillae of the tongue inferiorly and the junction of the hard and soft palate superiorly.

The authors have nothing to disclose.
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The oral cavity is divided into several anatomic subsites: lip, oral tongue, floor of the mouth, buccal mucosa, upper and lower gum, retromolar trigone, and hard palate (Fig. 1). Despite their proximity, these subsites have distinct anatomic characteristics that need to be taken into account in planning oncologic therapy.

EPIDEMIOLOGY AND ETIOLOGY

Worldwide, 405,000 new cases of oral cancer are anticipated each year, the countries with the highest rates being Sri Lanka, India, Pakistan, Bangladesh, Hungary, and France (Fig. 2).[5] In the European Union there are an estimated 66,650 new cases each year. The American Cancer Society estimates that there will be 45,780 new cancers of the oral cavity and pharynx in the United States in 2015, causing 8,650 deaths.[6]

Tobacco smoking and alcohol are the main etiologic factors in SCC of the oral cavity (SCCOC).[3,7] Other habits such as chewing of betel nuts and tobacco have been implicated in the Asian population. Tobacco contains many carcinogenic molecules, especially polycyclic hydrocarbons and nitrosamines. A directly proportional effect exists between the pack-years of tobacco used and the risk of SCCOC.[8] This risk can be reduced after tobacco cessation, but does not fully abate (30% in the first 9 years and 50% for more than 9 years).[9,10] A decreased incidence of oral cavity cancer has been reported in the last 15 years, widely attributed to a reduction in tobacco use.[11]

Alcohol and tobacco seem to have a synergistic effect in the etiology of oral and oropharyngeal SCC.[3,12,13] However, alcohol is linked to an increased risk of cancer even in nonsmokers.[14] Other factors such as poor oral hygiene,[15] wood dust exposure,[16] dietary deficiencies,[17] and consumption of red meat and salted meat[18,19] have been reported as etiologic factors. The herpes simplex virus (HSV) has been suspected but has not been implicated in the etiology of SCCOC.[20] Despite the emerging evidence supporting the role of the human papillomavirus (HPV) in the etiology of oropharyngeal cancer, it has not been conclusively linked to SCCOC.[21] Host factors

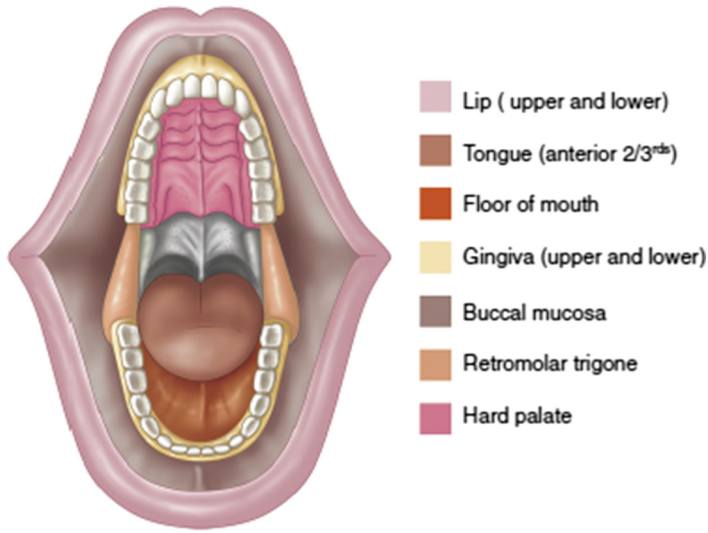

Fig. 1. Anatomic sites of the oral cavity. (*From* Shah JP, Patel SG, Singh B, et al. Jatin Shah's head and neck surgery and oncology. 4th edition. Philadelphia: Elsevier/Mosby; 2012; with permission. Copyright © 2012 by Jatin P. Shah, Snehal G. Patel, Bhuvanesh Singh.)