

Precancerous and Cancerous Lesions

Many epithelial and connective tissue tumors of the head and neck region (e.g., papillomas, hemangiomas, lymphomas) occur elsewhere in the body and are described adequately in other chapters. This discussion considers only squamous cell carcinoma and its associated precancerous lesions.

Leukoplakia and Erythroplakia

Leukoplakia is defined by the World Health Organization as “a white patch or plaque that cannot be scraped off and cannot be characterized clinically or pathologically as any other disease.” This clinical term is reserved for lesions that are present in the oral cavity for no apparent reason. As such, white patches caused by obvious irritation or entities such as lichen planus and candidiasis are not considered to be leukoplakias. Approximately 3% of the world’s population have leukoplakic lesions; 5% to 25% of these lesions are premalignant. **Thus, until proven otherwise by means of histologic evaluation, all leukoplakias must be considered precancerous.**

Related to leukoplakia, but much less common and much more ominous, is *erythroplakia*, which is a red, velvety, possibly eroded area within the oral cavity that usually remains level with or may be slightly depressed in relation to the surrounding mucosa (Fig. 16-4). The epithelium in such lesions tends to be markedly atypical, and the risk of malignant transformation is much higher than is leukoplakia. Intermediate forms are occasionally encountered that have the characteristics of both leukoplakia and erythroplakia, termed *speckled leukoerythroplakia*.

Both leukoplakia and erythroplakia may be seen in adults at any age, but they are usually found in persons aged 40 to 70, with a 2:1 male preponderance. Although these lesions have multifactorial origins, the use of tobacco (cigarettes, pipes, cigars, and certain forms of smokeless tobacco) is a common antecedent.

MORPHOLOGY

Leukoplakias may occur anywhere in the oral cavity (favored locations are buccal mucosa, floor of the mouth, ventral surface of the tongue, palate, and gingiva). They appear as solitary or multiple white patches or plaques, often with sharply demarcated borders. They may be slightly thickened and smooth or wrinkled and fissured, or they may appear as raised, sometimes corrugated, verrucous plaques (Fig. 16-5A). On histologic examination they present a spectrum of epithelial changes ranging from hyperkeratosis overlying a thickened, acanthotic but orderly mucosal epithelium to lesions with markedly dysplastic changes sometimes merging into carcinoma in situ (Fig. 16-5B).

The histologic changes in **erythroplakia** only rarely demonstrate orderly epidermal maturation; virtually all (approximately 90%) disclose severe dysplasia, carcinoma in situ, or minimally invasive carcinoma. Often, an intense subepithelial inflammatory reaction with vascular dilation is seen that likely contributes to the reddish clinical appearance.



Figure 16-4 Erythroplakia. A, Lesion of the maxillary gingiva. B, Red lesion of the mandibular alveolar ridge. Biopsy of both lesions revealed carcinoma in situ.

Squamous Cell Carcinoma

Approximately 95% of cancers of the head and neck are squamous cell carcinomas (SCCs), with the remainder largely consisting of adenocarcinomas of salivary gland origin. Head and neck squamous cell carcinoma is the sixth most common neoplasm in the world. At current rates, approximately 45,000 cases in the United States and more than 650,000 cases worldwide will be diagnosed each year.

The pathogenesis of squamous cell carcinoma is multifactorial.

- Within North America and Europe, oral cavity SCC has classically been a disease of middle-aged individuals who have been chronic abusers of *smoked tobacco* and *alcohol*.
- In India and Asia, the chewing of betel quid and paan is a major regional predisposing influence. This concoction, considered a delicacy by some, contains ingredients such as areca nut, slaked lime, and tobacco, wrapped in a betel leaf; many of the ingredients of paan could give rise to potential carcinogens.
- *Actinic radiation* (sunlight) and, particularly, pipe smoking are known predisposing influences for cancer of the lower lip.
- The incidence of oral cavity SCC (particularly the tongue) in individuals younger than age 40, who have no known risk factors, has been on the rise.