

ORAL SQUAMOUS CELL CARCINOMA

Objectives

- Important Issues
 - Epidemiology of oral cancer
 - Etiology and risk factors of oral cancer
 - Clinical presentation of oral cancer
 - Components of an Oral Cancer clinical examination
 - Increase confidence

Epidemiology of Oral Cancer

Oral Cancer Statistics

- 1.6 % of all malignancies in women (USA, 15th)
 - In 2006 it was the 12th most common
- 3 % of all estimated new cases of cancer in men (USA, 8th)
 - In 2006 it was the 6th most common
 - India: most common malignancy
- 2008: 25,310 new cases in men
 - Less than 3% of expected deaths
- 94% of malignancies are SCCa

Epidemiology

- Middle aged and older individuals
 - Disturbing number of younger adults
- Three categories
 - Oral cavity proper, lip vermilion, oropharynx
- Male:Female=2:1
- Incidence: 8/100,000
- Cau males 65 or older have the highest incidence
 - AfrAm middle-aged males have the highest incidence rate of oral cavity proper and oropharynx
 - Cau males highest of lip vermilion
 - AfrAm increasing incidence; Cau decreasing

Epidemiology

- Oral Cancer overall Mortality: 50-55%
- AfrAm > Cau: advanced stage
- 5-year survival rate has not improved significantly in the past several decades
 - Tongue: 47% Cau; 27% AfrAm
 - Floor of mouth: 52% Cau; 33% AfrAm
 - Lip: 95%

Statistics for MN (1988-2002)

- 520 cases; 110 die of the disease
- 2.3% of all cancers; 1.2% of all cancer deaths
- Incidence rate similar to national; mortality rates slightly lower
- Incidence: Significant decline by 2.2% per year among men
- Mortality: Among women there is a 1.9% decrease per year
- Less than 20% are diagnosed in patients less than 50 yo
- More men than women

Statistics for MN (2002)

- Incidence: 3%M; 1.6%W
- Mortality: 1.5%M; 0.9%W of oral cancer
- Incidence/site: Tongue, lip, gum other mouth, tonsils, salivary glands, floor of mouth
- Death/site: Tongue, gum other mouth, other oral cavity/pharynx, salivary glands, tonsil, oropharynx, nasopharynx, hypopharynx, floor of mouth, lip
- 4th most common in Native Americans (21.4%)
- Mortality: Blacks, Asians, Whites, Native Americans

Statistics for MN

- Extent of disease at diagnosis and 5-year relative survival
 - Localized 48.5% 82.1%
 - Regional 38.5% 51.3%
 - Distant 5.4% 27.6%

According to the MDH

- Most cases are preventable
- The single most effective measure to lower the risk is to reduce exposure to tobacco and alcohol

Etiology and Risk Factors of Oral Cancer

Tobacco Smoking (Squamous Cell Carcinoma)

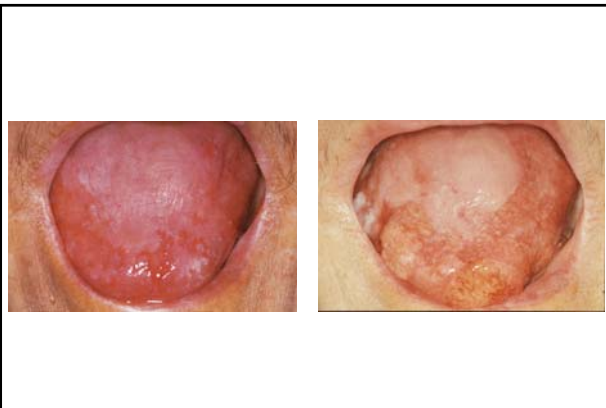
- Indirect evidence
 - 80% of patients are smokers
 - Chance for 2nd primary of upper aerodigestive tract is 2x to 6x greater in patients who continue smoking after treatment
 - Pipe and cigar carries greater risk
 - Reverse smoking (50% of palatal SCCa in such cultures)
 - Risk is dose dependent

Smokeless tobacco

- Users have increased risk
- Most cancers develop at the site of placement
- West Virginia: oral cancer incidence less than national average
- SCCa of the placement location more common among women than men in geographic areas where more women than men use dry snuff
- Much lower cancer risk than smoked
 - Swedish snuff (non-fermented and lower nitrosamine levels) not associated with increased risk

Betel quid (paan)

- Areca palm nuts, betel leaf, slaked lime, tobacco leaf
- Oral submucous fibrosis
- 600,000,000 people use it
- 8% lifetime risk



Alcohol

- Consumption and abuse
- Association with tobacco
- Alcohol and tobacco abuse
- One third of oral cancer patients are heavy users
- 20% of oral cancer patients have cirrhosis



Alcohol

- Risk associations between alcohol-containing mouth rinses and the development of oral cancer have not been established. (FDA 1996)

Phenols

- Workers in the wood product industry
- Nasal and nasopharyngeal carcinoma

Radiation

- Actinic radiation
- X-irradiation: therapeutic & dental





Iron deficiency

- Plummer-Vinson syndrome
- Cancer of the upper aerodigestive tract
- Esophageal webs
- Analysis of English language case reports published in the literature during the last 7 years (1999–2005) revealed that 25 out of the 28 adult patients with Plummer-Vinson syndrome were women (89 %)



Vitamin A deficiency

- Retinoic acid, β -carotene
- Excessive keratinization
- Protective or preventive role
- In some studies of retinoic acid use there has been regression of at least some leukoplakic lesions and reduction in severity

Syphilis

- Tertiary stage
- Dorsal tongue
- Arsenic and heavy metals that were used in the past have carcinogenic agents

Candidal infection

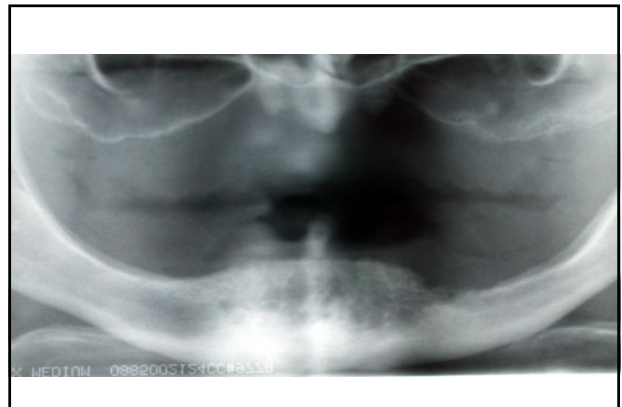
- Hyperplastic candidiasis
- Certain strains at the laboratory level have produced nitrosamines that have been implicated to carcinogenesis

Oncogenic viruses

- HPV: 16, 18, 31, 33
- HSV: most likely not
- HIV : indirectly – immunosuppression
- EBV: lymphoma, nasopharyngeal carcinoma

Immunosuppression

- AIDS
- Immunosuppression therapy



Squamous Cell Carcinoma

- Tongue
 - More than 50% of cases
 - posterior lateral border and ventral surfaces
- Floor of mouth (more common in men than women)
- Extension to soft palate/tonsils; “horseshoe” area
- Less common: gingiva, buccal mucosa, labial mucosa, hard palate

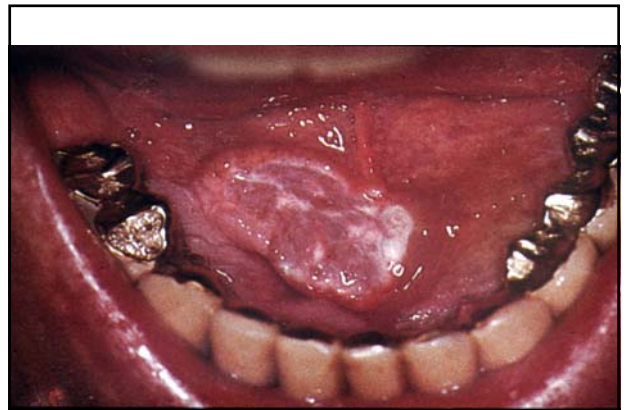
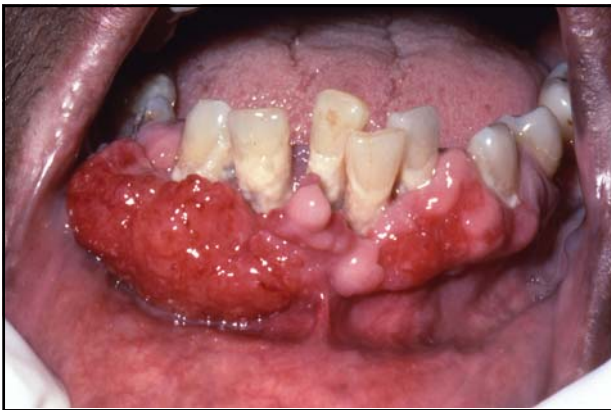
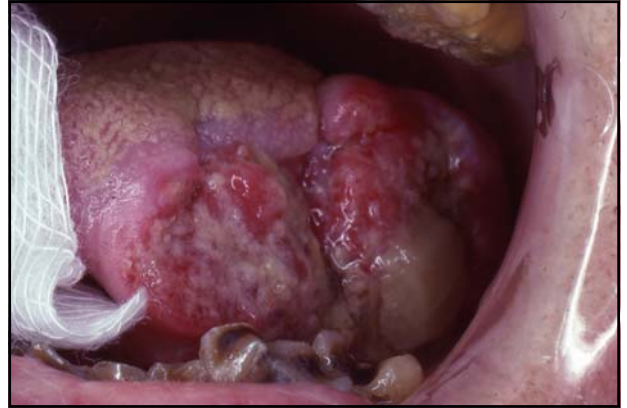
Squamous cell carcinoma

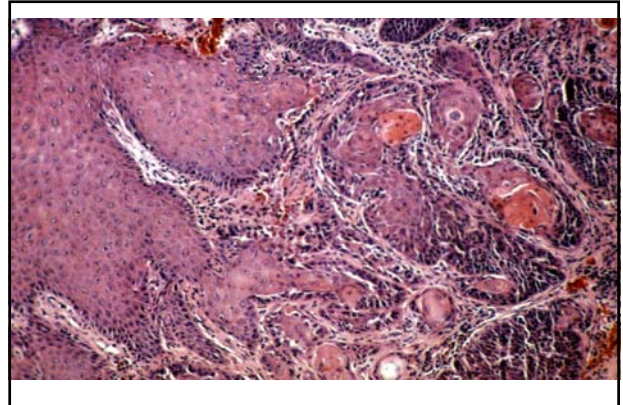
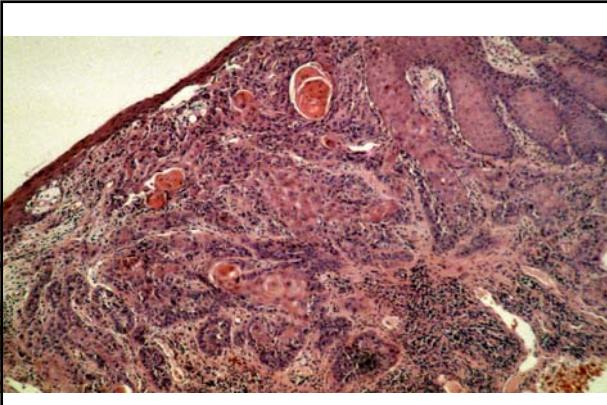
- White
- Red
- White and red
- Exophytic (fungating, papillary, verruciform)
 - Indurated
- Endophytic (ulcerated, invasive, burrowing)
 - Rolled borders

Squamous cell carcinoma

- Pain is not a reliable indicator
- Small carcinomas are usually painless
- Larger often painful due to infiltration
- Lesions may mimic reactive processes
- Lesions may appear innocuous







TNM System for SCCa

- **Tumor size**
 - X No available information
 - 0 No evidence of primary tumor
 - 1S Ca in situ at primary site
 - 2 2-4 cm in greatest dimension
 - 3 More than 4 cm
 - 4 Massive tumor; involves other structures

TNM System for SCCa

- **Nodal involvement (regional)**
 - X Could not or were not assessed
 - 0 No clinically positive nodes
 - 1 Clinically positive homolateral node < 3cm
 - 2 Single 3-6cm or multiple none > 6cm
 - 2a Single
 - 2b Multiple
 - 3 Massive homolateral node or nodes, bilateral nodes or contralateral or nodes
 - 3a Homolateral node or nodes one >6cm
 - 3b Bilateral
 - 3c Contralateral

TNM System for SCCa

- **Metastases**
 - X Distant metastasis was not assessed
 - 0 No evidence of distant metastasis
 - 1 Distant metastasis present

Staging

- Stage I T1N0M0 85% 5-year survival
- Stage II T2N0M0 66%
- Stage III T3N0M0 41%
- Stage III T1N1M0
- Stage III T2N1M0
- Stage III T3N1M0
- Stage IV Any T4, any N2 or N3, any M1 9%

Metastasis

- Metastatic nodes are firm and feel “fixed”
- Extracapsular spread
- Homolateral and contralateral
- Lower lip, floor of mouth → submental nodes
- Posterior mouth → superior jugular and digastric
- Oropharynx → jugulodigastric nodes