Emerging Oral Cancers, HPV and HIV

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Overview

- Incidence of Oral Cancer
- Risk factors (Tobacco, alcohol, HPV& HIV)
- Screening
- Treatment options
Normal Cells vs. Cancer Cells

**Healthy cells**
- Grows with control
- Regularly dies
- Specific function
- Organized

**Cancer cells**
- Grows without control
- Doesn’t self-destruct
- Can spread
Cancer can spread...

1. Through neighboring tissue.
2. Through the lymphatic system.
3. Through the blood system.
Oral/Pharyngeal/Head and Neck Cancer

- 40,250 newly diagnosed in USA
- 7,850 men and women died of oral and pharyngeal cancer in 2012
- 4.5% of all new cancer cases—ORAL
- 61% 5-year survival for all stages combined
Oral Cancer is a global disease

• 10th most common cancer worldwide (WHO)
• Tobacco use rampant in many countries
• Lack of education creates more problems
• Treatment expense is a heavy burden
Risk Factors

- Tobacco (90%)
- Alcohol
- Sun exposure – lip
- Diet
- Human Papilloma Virus (HPV) (on the rise)
More Risk Factors for Oral Cancer

- Men are twice as likely to develop oral cancers.

- Men are more likely to use tobacco and alcohol over long periods of time and in large enough doses to cause these cancers.

- Increases with age
WHO- estimates 1.3 billion smokers in the world (1/3 global population)

- Most common cancer in the world among men is lung cancer
- Leading cause of cancer death in men is lung
- 4th leading cause of cancer death in women worldwide is lung.
- **90% of all oral cancers are tobacco related**
Lung Cancer

• 1 out of 3 smokers will die from smoking!

• Second-hand smoke accounts for 10% of all tobacco-related deaths.
Chemicals in Cigarettes

- Ammonia (toilet cleaner)
- Acetone (nail polish remover)
- Arsenic (rat poison)
- Nicotine (tranquilizer darts, pesticide)
- Cadmium (batteries)
- Benzene (explosives, pesticides)
- Cresol (Lysol household cleaner)
- Formaldehyde (preserves dead bodies)
“Worldwide, 47 percent of men and 12 percent of women smoke a total of 6 trillion cigarettes a year. (World Health Organization, 1999).”
Two types of Oral Cancer

1. Oral cavity cancer

2. Oropharyngeal cancer
Location of cancers

Most oral cancers begin on the

1. Tongue or
2. The floor of the mouth

- 90% of cancers of the oral cavity and oropharynx are squamous cell carcinomas.

If you are a clinician keep your eyes open!
**Oral Cavity**

- **Hard palate:** The front of the roof of the mouth
- **Soft palate:** The back of the roof of the mouth
- **Tongue**
- **Gum**
- **Upper lip**
- **Lower lip**
- **Uvula:** Soft tissue that hangs from the soft palate
- **Tonsil:** Ball of tissue on the side of the throat (there is one on each side)
- **Retromolar trigone:** Tissue that joins the upper and lower jaws
- **Underside of the tongue**
- **Floor of the mouth:** Soft tissue under the tongue
Figure 6-1. The anatomical boundaries of the oropharynx.
Oral Cancer

The tongue is one of the most common sites.
Squamous Cell Carcinoma

1,700+ new cases of HPV are associated with head and neck cancers in women.

Approximately 5,700 men are diagnosed each year in the United States.

HPV (Human Papilloma Virus) Connection
Oral HPV connection

- The majority of oral cancers are primarily squamous cell carcinomas, much like the cancer that affect the cervix.
- Considered a sexually transmitted disease
- 30-35% of Oral Cancers are HPV related and **this percentage is rising**.
- HPV is so common that at least 50% of sexually active men and women get it at some point in their lives.
p53 gene (the good gene)

- Regulates the cell cycle (repairs DNA)
- Stops the formation of tumors
• Oral Cancers that are HPV (−) (tobacco/alcohol related) have mutated P53 gene.

• More aggressive HPV (+) tumors seem to be void of a p53 mutation.

• Survival outcomes may be better/longer if HPV (+)
Interferes with p53

Alcohol and carcinogens in tobacco contribute to mutation of p53 gene.
Preventive measures of Oral HPV

**HPV Vaccine**
- Gardasil & Cervarix
- These vaccines prevent HPV that cause 70% of all cervical and oropharyngeal cancers.

**Safe Sex**
- Use protection EVERY time you have any type of sex
- Limit number of sexual partners
- See oral health professional *at least* once a year – to check mouth thoroughly
Oral Cancer HIV Connection
AIDS related oral cancer manifestations

• Immune system extremely suppressed

• Oral AIDS related cancer - may be first sign of late stage HIV/AIDS

• Can be very painful and patient may develop problems eating
Two HIV Cancers

AIDS related Lymphoma

Kaposi’s Sarcoma

Hodgkin’s and Non-Hodgkin’s Lymphoma
Oral Kaposi’s Sarcoma

- May be first manifestation of late stage HIV
- More commonly observed in men
- Red, blue or purplish lesions
- Most commonly found on hard palate
- Immune system extremely suppressed
- Need biopsy to diagnose
Treatment for Kaposi’s Sarcoma

- Surgical (early stage)
- Low-dose irradiation and intralesional chemotherapy
- Systemic chemotherapy
- Highly active antiretroviral (HAART) drugs
AIDS related lymphoma

- Can grow and spread quickly.
- Need biopsy to diagnose
Treatment for AIDS related lymphoma

- HAART therapy
- Chemotherapy, if they can tolerate it.
- For patients with primary CNS lymphoma, chemotherapy or whole-brain radiation may be used.
Survival Rates of Oral Cancer

5-year relative USA survival rates

- 82% for localized disease
- 57% for regional involvement
- 35% for distant metastasis

(3yr survival rate HPV+ 82% vs. HPV− at 57%)
Early Detection Saves Lives

*Early* diagnosis leads to better outcomes!
The Oral Cancer Screening Exam

What do you need:

- Motivation
- About 2-3 minutes
- Proper lighting
- Dental mirror
- Gauze squares
- Gloves
The Cancer Screening Exam

Components of an Oral Cancer Screening Exam

- **Medical History** and Risk Factors

- **Extraoral Examination**
  - **Inspect** the Head and Neck region
  - **Palpate** Cervical Lymph Nodes and Salivary Gland

- **Intraoral Examination**
  - **Inspect and palpate** the buccal mucosa, lip, alveolar ridge/gingiva, tongue, floor of mouth, hard/soft palate
The Oral Cancer Exam

• If pt has dentures (plates) or partials, remove them.

• Next, inspect the face, neck, lips and mouth to look for any signs of cancer.

• With both hands, feel the area under the jaw and the side of the neck, checking lymph nodes for lumps that may suggest cancer.

• **Look at and feel** the insides of lips and cheeks to check for possible signs of cancer, such as red and/or white patches.
Oral Cancer Screening Continued

- Next, check tongue so it can be checked for swelling or abnormal color or texture.
- **Using gauze**, gently pull tongue to one side, then the other, to check the base of tongue. Check underside of tongue too.
- **Look and feel** the roof and floor of the mouth, as well as the back of the throat. *remember floor of mouth & tongue most common sites*
- Finally, put one finger on the floor of your mouth and, with the other hand under the chin, gently press down to check for lumps or sensitivity.
The Cancer Screening Exam

Symptoms of Oral Cancer

- Persistent pain or numbness
- Difficulty chewing, swallowing, speaking, or moving jaw or tongue
- Swelling of jaw
- Change in fit of denture
- Hoarseness
- Enlarging neck mass
The Cancer Screening Exam

Signs of Oral Cancer

- Persistent velvety white, red or speckled patch
- Sore that won’t heal or bleeds
- Hard, raised lesion
- Firm, non-tender, and/or non-mobile neck mass

~ Rule of thumb ~ 2 weeks!!!
The Cancer Screening Exam
Use Gauze – takes 30 seconds!

- Use Gauze – it is easier to hold the tongue

- Better view of back and side views of tongue

DHHS/NIH/NIDCR
If suspicious, then biopsy

Suspicious lesions need a biopsy!

• Incisional/excisional biopsy
  It is best to biopsy if suspicious!
Treatment Options

TREATMENT IS MOST SUCCESSFUL WHEN A TEAM APPROACH IS TAKEN!
Early Cancers of the Oral cavity/Oropharynx

- Surgery with or without radiation therapy
- After surgery reconstruction necessary even in low stage lesions
- Oropharynx rarely diagnosed early
- Base of tongue primary tumors are generally offered non-surgical therapy
**Advanced Oral Cavity/Oropharynx Cancer**

- Commonly involve bony structures of the maxilla and mandible and will require complicated reconstruction
- Lymph nodes involved
- *Combined* radiation and chemotherapy
- Seldom able to use surgery
- Reconstruction *mandatory* following surgery
Anterolateral Thigh Free Flap

- Example of tongue reconstruction
- Creating a tongue from the anterolateral thigh
- Donor site well tolerated
Conclusions

• *Early* identification improves outcomes of survival

• A team approach has better success when treating oral cancer patients

• As a clinician you can make a difference by doing an oral cancer screening on every patient.

• **EDUCATE – EDUCATE – EDUCATE!!!**
Thank you!

Questions ??
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