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Lecture Synopsis:

According to the CDC, nearly all sexually active Americans will have a HPV (Human Papillomavirus) infection in their lifetime. This is fueling an escalating rise in the incidence of HPV-positive oropharyngeal cancer. By the year 2020, HPV-positive oropharyngeal cancer is expected to be the leading HPV-related cancer surpassing cervical cancer. The historic etiologic patterns related to exposure to alcohol and tobacco are declining, while HPV is becoming increasingly more common. This session will discuss implications to dentistry and how oral cancer screening should be adjusted. Identify the dental professional's role in early discovery of mucosal tissue changes and potentially life-saving outcome through screening methods..

Learning Outcomes:

- Understand critical statistical information regarding oral and oropharyngeal cancer that every dental professional needs to know
- Discuss the transmission of the virus and the transformation to malignancy
- To identify high risk extraoral and intraoral anatomical areas related both to HPV and non-HPV oral and oropharyngeal cancer
- Be equipped with clinical knowledge and educational resources for your dental practice and patients

References & Resources:

All sites accessed June 2018
 Oral Cancer Foundation
www.oralcancerfoundation.org
 American Cancer Society. Cancer Facts & Figures 2018.
<https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2018/cancer-facts-and-figures-2018.pdf>

**Oral Cancer Screening for Today's Population:
 The URGENT Need for Change!**

Oral Cancer Quick Facts:

Over 50,000 Americans will be diagnosed with oral or pharyngeal cancer this year
 Oral cancer will claim over 10,000 lives killing 1 person/hour, 24 hours per day
 Of those 50,000+ newly diagnosed individuals, only slightly more than half will be alive in 5 years
 Worldwide, the problem is much greater with 640,000 new cases being found each year

We own this...

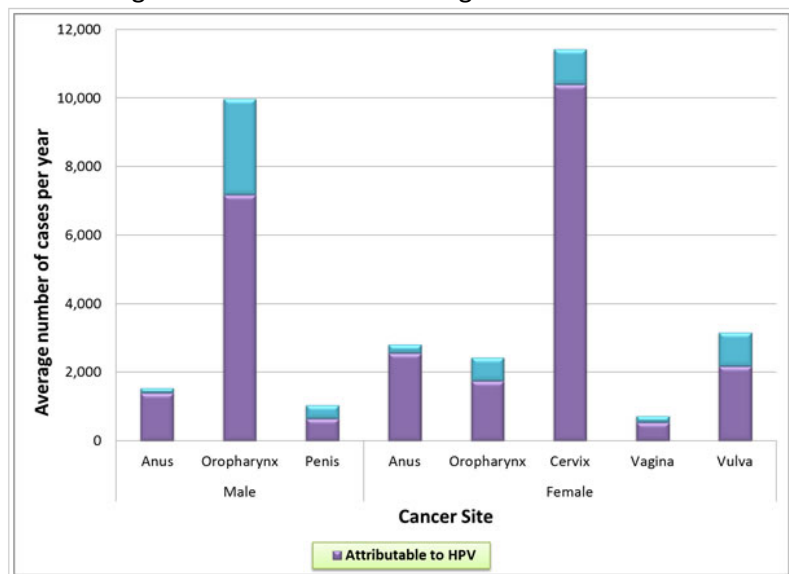
"An occupation whose core element is work based upon the mastery of a complex body of knowledge and skills....to be used in the service of others. Professions and their members are accountable to those served and to society. Society rewards health professionals...this status, however, comes with professional obligations." **Oral cancer is OUR cancer!**

Table 1. Estimated Number* of New Cancer Cases and Deaths by Sex, US, 2018

	Estimated New Cases			Estimated Deaths		
	Both sexes	Male	Female	Both sexes	Male	Female
All sites	1,735,350	856,370	878,980	609,640	323,630	286,010
Oral cavity & pharynx	51,540	37,160	14,380	10,030	7,280	2,750
Tongue	17,110	12,490	4,620	2,510	1,750	760
Mouth	13,580	7,980	5,600	2,650	1,770	880
Pharynx	17,590	14,250	3,340	3,230	2,480	750
Other oral cavity	3,260	2,440	820	1,640	1,280	360

Emerging Threat:

- Rates of head and neck cancers have risen and set to grow further
- An increased number are caused by the Human papillomavirus (HPV)
- At the same time, rates of cervical cancer, nearly all caused by HPV are declining due to increased screening



Data are from all states meeting [USCS publication criteria](#) for all years 2006–2010 and cover approximately 94.8% of the U.S. population.

Notes:-

References:

Poor Oral Health Linked to Cancer-causing Oral HPV Infection. August 21, 2013. American Association for Cancer Research. CDC; Centers for Disease Control and Prevention.

<http://www.cdc.gov/cancer/hpv/statistics/cases.htm>

<http://www.cdc.gov/vaccinesafety/vaccines/HPV/Index.html>

<https://www.womenshealth.gov/a-z-topics/human-papillomavirus>

Chaturvedi A, Engels A, Pfeiffer RM et al. Human Papillomavirus and Rising Oropharyngeal Cancer Incidence in the United States. *Journ of Clin Oncol* published on October 3, 2011.

Cleveland JL, Junger ML, Saraiya M et al. The connection between human papillomavirus and oropharyngeal squamous cell carcinomas in the United States. Implications for Dentistry. *JADA* 142(8):2011;915-924. Images with permission granted from Lexi-Comp for use in presentation only; Newland J, Meiller T, Wynn R, Crossley H. Lexi-Comp Dental Reference Library: Oral Soft Tissue Diseases. 4th Ed. (2009)

McQuillan G, Kruszon-Moran D, Markowitz LE, et al. Prevalence of HPV in Adults Aged 18-69: United States, 2011-2014. NCHS Data Brief – April 2017.

<https://www.cdc.gov/nchs/data/databriefs/db280.pdf>

U.S. HPV Statistics:

Who gets HPV?

Genital HPV is the most common STI in the United States for both men and women. About 79 million Americans have HPV. It is so common that 80% of women will get at least one type of HPV at some point in their lifetime.

Current CDC Statement:

HPV is so common that nearly all sexually active men and women get it at some point in their lives.

Oral and Oropharyngeal Cancer Risk Factors:

- Age
- Race & minority men
 - 2:1 African-American vs. Caucasian
 - 5 year survival rate; 33% vs. 55%
- Gender
- Tobacco products (marijuana)
- Alcohol consumption
- Combined use of tobacco/alcohol
- Prolonged exposure to ultraviolet light
- Dietary deficiencies
- Population trends
- Immunosuppression
- HIV/Aids, organ transplant recipients
- Previous history of oral/oropharyngeal cancer
 - 30-fold increased risk of 2nd occurrence
- Suggestion poor oral hygiene may be linked to an oral HPV infection
- *Human papilloma virus*

HPV-Positive Oropharyngeal Cancer on the Rise:

Study: To investigate the population-level burden of HPV-positive oropharyngeal squamous cell carcinomas

Methods: HPV status was collected by three population-based cancer registries. Observed HPV prevalence was reweighted to all oropharyngeal cancers within the cancer registries

Results: HPV prevalence in oropharyngeal cancers significantly increased over calendar time; 225% from 1988 – 2004

Conclusion: Increases in the population-level incidence and survival of oropharyngeal cancers since 1984 are caused by HPV infection

Understanding the HPV/Oral Cancer Connection:

- More than 200 types of HPV, only a few are high-risk factors for oral cancer; primarily HPV-16 and HPV-18; over 90% of HPV-positive oral cancers are HPV-16 positive
- HPV-6, HPV-11, HPV-16 and HPV-18 are related to a venereal wart and present in the oral cavity as condyloma acuminatum; 9 strains have been identified as being oncogenic
- HPV is associated with nearly all cases of pre-invasive and invasive cervical neoplasia

Notes:

- HPV mechanism – *affinity for lymphoid tissues; virus' DNA integrates into nuclei of healthy cells to produce oncogenic proteins; E6 and E7. Both bind to tumour-suppressor proteins, p53 and pRb*
- Improved survival rates for HPV-related oral/oropharyngeal cancer

HPV FAQ's:

1. *How long before you know you have the infection?*

Present for some time before detection

15 – 30 years before becoming oncogenic

3 – 12 months after exposure

2. *Does it ever go away?*

Remain in body doing no harm or dealt with by immune system

May disappear spontaneously over time

3. *Can men be tested for HPV?*

Presently no reliable test to demonstrate presence of virus in men

4. *Can you prevent HPV infection?*

Limit sexual partners. The more sexual partners, the higher the chance of contracting HPV.

Using condoms is excellent protection against STI, but does not cover all the skin.

Pap testing will detect abnormal cells.

Vaccination is now available to prevent certain low risk types that cause genital warts and certain high risk types that cause cancer.

5. *Will I transmit this infection to others?*

Currently no evidence for non-sexual transmission

Spouses of patients with HPV-OSCC have likely been exposed

Female patients with HPV-OSCC and female spouses/partners of patients with HPV-OSCC should undergo routine cervical screening

Transmission to future partners:

Many patients with HPV-OSCC do not have detectable viral DNA after treatment and therefore likely cannot transmit the infection after therapy.

On the other hand, some patients continue to have HPV detectable in exfoliated oral cells after therapy, although this likely represents integrated (non-infectious) HPV DNA

Clinical Presentation: Condyloma Acuminatum

- Cluster of multiple, pink, slightly papillary nodules attached with broad base
- Painless, persistent, more common in young adults
- HPV 6,11, 16 and 18
- Sexually transmitted infection (STI)
- Lips, tongue and soft palate
- Also known as a venereal wart
- Local excision, laser ablation
- Re-inoculation amongst sexual partners is common

Verrucous Carcinoma:

- Diffuse, white papillary or corrugated thickenings
- Painless, continual enlargement
- HPV 16, 18 and smokeless tobacco
- Commonly occur at site of tobacco exposure

Notes:

Earlier Discovery: What Can We Do as Dental Professionals?

Key Determinants of Risk

Certain factors affect prognosis and treatment options;

Stage and grade of the cancer

Where the tumor is in the body

Whether the tumor is associated with HPV infection

Treatment options depend on the following;

Stage and grade of the cancer

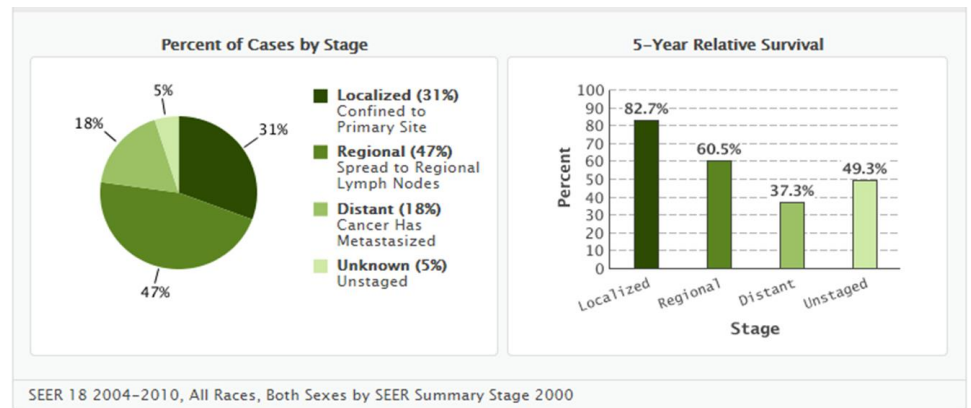
Where the tumor is in the body

Retention of patient's ability to speak and swallow as normal as possible

The patient's general health

5-Year Relative Survival Rates by Stage at Diagnosis:

Oral Cavity and Pharynx Cancer



The Extraoral Examination: Examination of High Risk Anatomical Areas

Accomplished by;

Observation, palpation, auscultation and olfaction

A, B, C, D, E of Malignant Melanoma

A _____

B _____

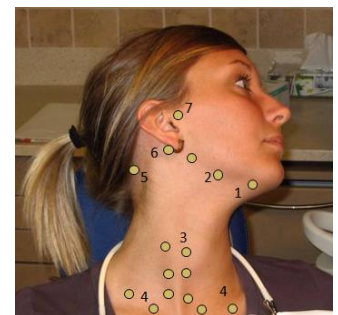
C _____

D _____

E _____

Systematic Examination of Lymph Nodes

1. Submental
2. **Submandibular**
3. **Cervical chain**
4. **Supraclavicular**
5. Occipital
6. Posterior auricular
7. Anterior auricular



Notes:

Extraoral Palpation of Submandibular Nodes:

- Unilateral palpation
- **Chin down, ear to shoulder; firm pressure**
- Note any enlargement, tenderness, hardness
- and asymmetry; nodes should not be clinically palpable or visible



Extraoral Palpation of Cervical Nodes: *Bilateral Palpation*

- Palpate the superficial and deep cervical nodes
- Turn the head to reposition the SCM to palpate the internal jugular chain
- Clinical considerations; past/chronic infection, malignancy



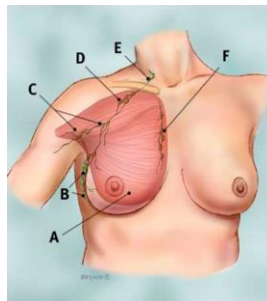
Extraoral Palpation of Supraclavicular Nodes:

Location

- Superior to the clavicle in the supraclavicular fossa directly above the collarbone

Technique

- Positioned behind patient
- Bilateral palpation
- Enlargement should always be investigated



Lymphadenopathy Considerations:

Infection Related

- Soft, often painful or tender
- Moveable
- Patient often aware of underlying infection



Notes:

Neoplasia Related

- Firm, usually not symptomatic
- Firm and fixed
- Patient often unaware



Palpation of Thyroid Gland:

Bilateral palpation and visual inspection

- Thyroid gland located on both sides as well as below the thyroid cartilage
- Instruct the patient to swallow noting any enlargement, immobility or asymmetrical movement
- Normally not detected by palpation or clinically visible; gland should rise up and down during swallowing



HPV-Positive Anatomical Sites:

HPV has an affinity towards lymphoid tissues present in lingual and palatal tonsillar areas, posterior area and base of the tongue, soft palate and oropharyngeal area

HPV-Negative Anatomical Sites:

Non-hpv high risk anatomical sites include the palate, tongue and floor of the mouth

7 Step Intraoral Examination:

1. Lips
2. Labial mucosa
3. Buccal mucosa
4. Gingival tissues
5. **Tongue**
6. **Floor of mouth**
7. **Oropharyngeal and Palatal Tissues**

Step 5: Tongue

A. Dorsum



Notes:

Studies & Clinical Papers

Poh, CF. Anderson, DW, Durham, S. et al. Fluorescence Visualization–Guided Surgery for Early-Stage Oral Cancer JAMA Otolaryngol Head Neck Surg. 2016;142(3):209-216.

Epstein J, Guneri P, Boyacioglu H et al. The limitations of the clinical oral examination in detecting dysplastic oral lesions and oral squamous cell carcinoma. JADA December 2012 Volume 143, Issue 12, Pages 1332–1342.

[http://jada.ada.org/article/S0002-8177\(14\)62187-5/abstract](http://jada.ada.org/article/S0002-8177(14)62187-5/abstract)

National Cancer Institute. Surveillance, Epidemiology and End Results. SEER Stat Fact Sheets: Oral Cavity and Pharynx Cancer.

<http://seer.cancer.gov/statfacts/html/oralcav.html>

Truelove, E L, Dean, D, Maltby, S et al. Narrow band (light) imaging of oral mucosa in routine dental clients. Part 1: Assessment of value in detection of mucosal changes. *Gen Dent* July/August 2011: p.281-89.

Huff KD et al: [Sensitivity of direct tissue fluorescence visualization in screening for oral premalignant lesions in general practice.](#) *Gen Dent.* 2009 Jan-Feb;57(1):34-8

Huff KD et al: [A novel, minimally invasive approach to managing mild epithelial dysplasia.](#) *Gen Dent.* 2010 Mar-Apr;58(2):126-9.

Additional Publications

Jones J. The Risk of Omission: Performance of Screening Exams. *Dentistry Today.* April 2011;30(4):p.104 – 09.

Jones J. The Risk of Omission: Alarming New Oral Cancer Trends. *Dentistry Today.* April 2010;29(4)p.124 -27.

B: Lateral Borders



C. Ventral Surface



Step 6: Floor of the Mouth

- Particularly vulnerable area
- Inspect floor of mouth for any changes in;
 - Colour
 - Texture
 - Swelling
 - Surface abnormalities
- Use bimanual palpation



Step 7: Oropharynx and Palatal Tissues

- Examine the entire area of the oropharynx including the tonsil region, uvula, tonsillar pillars and palatine tonsils for presence, color, size or any noted abnormalities
- Depress the tongue towards the floor of the mouth using either a tongue blade or the back of the mouth mirror
- Instruct the patient to take a deep breath and hold or say “ah” enabling the clinician to gain better visual acuity



Notes:

References:

Epstein JB, Guneri P, Boyacioglu H. The limitations of the clinical oral examination in detecting dysplastic oral lesions and oral squamous cell carcinoma. *Tex Dent J*. 2013 May;130(5):410-24. <https://www.ncbi.nlm.nih.gov/pubmed/23923463>

Jennifer L. Cleveland, DDS, MPH, Dental Officer/Epidemiologist and Valerie A. Robison, DDS, MPH, PhD, Dental Officer Team Lead Valerie Abt E. Clinical Oral Examinations May Not Be Predictive of Dysplasia or Oral Squamous Cell Carcinoma. *J Evid Based Dent Pract*. 2013 Dec; 13(4): 151–154.

Symptoms We Can't Afford to Ignore:

- Continuous sore throat; persistent infection
- Pain when swallowing or difficulty swallowing;
- Unilateral ear pain
- Pain when chewing
- Non-healing oral lesions
- Bleeding in the mouth or throat
- Hoarseness
- A lump in the throat or the feeling that something is stuck in the throat
- Continual lymphadenopathy
- Unexplained weight loss
- Slurred speech
- Tongue that tracks to 1 side when stuck out
- Asymmetry in tonsillar area

*Clinical Resource included in HANDOUT

THE JOURNAL OF THE AMERICAN DENTAL ASSOCIATION

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The limitations of the clinical oral examination in detecting dysplastic oral lesions and oral squamous cell carcinoma

The Problem: Late Stage Discovery

Oral Cancer and Dysplastic Progression:

"On the basis of the available literature, the authors determined that a COE of mucosal lesions generally is not predictive of histologic diagnosis. The fact that OSCCs often are diagnosed at an advanced stage of disease indicates the need for improving the COE and for developing adjuncts to help detect and diagnose oral mucosal lesions".

Fluorescence Visualization-Guided Surgery for Early-Stage Oral Cancer

Study led by Dr. Catherine Poh, Provincial Oral Medicine Leader for Oral Oncology at the BC Cancer Agency.

Results published **January 14, 2016** in the **Journal of the American Medical Association** (goo.gl/QyIVtn).

Retrospective, case-control observational study that was conducted on 246 patients between September 1, 2004, to August 31, 2009.

Showed a significant reduction in the rate of local recurrence of early-stage squamous cell carcinoma and high-grade precancerous lesions in patients where VELscope tissue fluorescence visualization was used to assist in determining the surgical margin for excision, compared to those patients where conventional methods were used.

Application of Critical Thinking:

Unilateral as opposed to bilateral presentation
Irregular and/or non-symmetrical shape

Notes:

Well-demarcated borders
Abnormal patterns that appear “out of context”
Abnormal patterns that spread across different anatomical structures

Clinical Practice & Patient Education: All sites accessed January 2018

1. Medical History Update Form (included in handout)
 2. Quick Reference Guide to Lesion Documentation (included in handout)
 3. VELScope Downloads Centre (free)
<http://www.velscope.com/education/downloads-center/>
 4. Lexi-Comp Reference Library: www.lexi.com/dentistry (Promo code: **RDHC01**)
 5. www.dentalacademyofce.com
HPV Related Oral Cancer Screening: Different Presentation, Different Protocol
Oral Cancer Today: The Impact on our Profession
 6. CDHA Downloads: Fact Sheet & Quiz, Booklet, Early Detection Flyer and Video
http://www.dentalhygienecanada.ca/pdfs/education/OCS_FactSheet_2015.pdf
<http://files.cdha.ca/Education/Courses/Oral-Cancer-4page-booklet.pdf>
<http://www.dentalhygienecanada.ca/pdfs/DHCanada/OralCancerEarlyDetectionFlyer.pdf>
Video:
http://www.dentalhygienecanada.ca/DHCanada/Your%20Oral%20Health/OralCancer_Awareness/DHCanada/Information/Oral_Cancer.aspx
 7. Gary Takacs – The Thriving Dentist Podcast – free iTunes download. Oral Cancer: An Emerging Pandemic
 8. Oral Cancer Fact Sheet ‘Oral Cancer Information Sheet’
<http://oralcancerfoundation.org/resources/screening-event-downloads/>
 9. Oral Cancer Foundation Patient and Practice resources www.ocfstore.org
 10. Six Step Screening Brochure www.sixstepscreening.org
 11. HPV Info Healthcare Professionals and Public Information www.hpvinfos.ca www.sexualityandu.ca www.hpvandme.org
 12. CDC HPV Oropharyngeal Fact Sheet <https://www.cdc.gov/hpv/>
 13. Hopkins Medicine HPV Brochure (free download)
http://www.hopkinsmedicine.org/kimmel_cancer_center/centers/head_neck/HPV/brochure.pdf
 14. Check Your Mouth global campaign – Video and Infoguide; a website developed to guide the public on the importance of doing a monthly oral self examination www.checkyourmouth.org Professional resources including postcards and the ‘Check Your Mouth’ kit are available at www.ocfstore.org
- Thank you to LED Dental Inc., Wolters Kluwer, developers of Lexi-Comp online and chairside library and to the Canadian Dental Hygienists Association for the use of the photographs used in this presentation. Special thanks also to Dr. Samson Ng, certified specialist in Oral Medicine and Oral Pathology, Clinical Assistant Professor at UBC Faculty of Dentistry for permission of clinical photographs in the lecture. If I may assist you with any further information regarding today’s presentation, please don’t hesitate to contact me at jjones@jo-annejones.com

Thank you for joining me in the quest for earlier discovery of oral cancer!

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Medical History Update

Patient Name: _____ **Date:** _____

Recent research indicates a strong relationship between the mouth and the body. Since we now know how closely they are related, we are going to be asking you some questions about your family history and your overall health that we may not have asked you about before. This additional information will assist us in providing the best possible care to maintain your oral health and overall wellness. Any changes in your health since your last dental visit? Yes No If yes, please list:

What medications are you taking? _____

Any changes in medication dosage or medications? Yes No If yes, please list:

What over the counter or 'herbal/natural' supplements are you taking on a regular basis? Please list:

Are you taking any bisphosphonates in the past or presently? Yes No If yes, please provide details:

Do you have a persistent sore throat, hoarseness, ear ache or feeling of something being caught in your throat?

Yes No If yes, please provide details:

Have you ever been diagnosed with an infection caused by a high risk HPV strain? Yes No

If yes, please provide details:

Have you had any surgery or been hospitalized since your last visit? Yes No

If yes, please explain: _____

Are you being treated for any medical problem presently? Yes No

If yes, please explain: _____

Have you ever taken antibiotics prior to having your teeth cleaned or before dental work? Yes No

If yes, please explain: _____

Any allergies to drugs, food, metal or latex? Yes No

If yes, please list: _____

History of illness or disease in family?

If yes, please explain: _____

Have you been diagnosed with diabetes? Type I Type II Pre-diabetes

Diet-controlled Medication controlled Under control: Yes No

Have you had any heart problems or a knee, hip or prosthetic joint replacement? Yes No

If yes, provide details: _____

Have you had a bone mineral density test? Yes No Results: _____

Have you been diagnosed with osteoarthritis or rheumatoid arthritis? Yes No

Have you experienced increased joint pain or decrease in mobility? Yes No

Female clients; Are you pregnant? Yes No

On a scale of 1 to 10 (10 being highest), how would you rate your general health at this time? _____

How would you rate your level of stress presently? Low Moderate High

On a scale of 1 to 10 (10 being highest), how closely related is the health of your mouth to your overall health in your opinion? _____

Oral Cancer Facts

- Approximately 49,750 Americans will be diagnosed with oral cancer in 2017.
- Worldwide the problem is much greater, with new cases exceeding 640,000 annually.
- In the US, approximately 132 new individuals each day will be diagnosed with oral cancer.
- The fastest growing segment of the oral/oropharyngeal cancer population comes from HPV16, a virus that goes unnoticed with no precancerous signs.
- Approximately one person every hour of every day 24/7/365 will die from oral cancer in the US alone.
- While not related to biology, oral cancer occurs in blacks 2 to 1 over whites.
- Oral cancer occurs in men 2 to 1 over women.

Risk Factors

- Tobacco use in all of its forms and alcohol are major risk factors for developing oral cancer.
- While the vast majority of oral cancers (front/anterior of mouth) are related to tobacco and alcohol, about 10% of these cancers come from unknown causes. This includes all three types of cancers found in the oral environment: Squamous Cell Carcinoma (SCC), Adenoid Cystic Carcinoma (ACC), and Mucoepidermoid Carcinoma (MEC).
- The unknown etiology cancers may arise from a genetic aberration or frailty or from a yet unidentified common shared lifestyle risk factor.

Signs and Symptoms

- Any sore or ulceration that does not heal within 14 days.
- A red, white, or black discoloration of the soft tissues of the mouth.
- Any abnormality that bleeds easily when touched (friable).
- A lump or hard spot in the tissue, usually border of the tongue (induration).
- Tissue raised above that which surrounds it; a growth (exophytic).
- A sore under a denture, which even after adjustment of the denture, that does not heal.
- A lump or thickening that develops in the mouth.
- A painless, firm, fixated lump felt on the outside of the neck, which has been there for at least two weeks.
- All the above symptoms have the commonality of being persistent and not resolving.

Additional signs found through verbal inquiry

- Patient reports sensation that something is stuck in their throat when swallowing or other difficulty in swallowing.
- Patient reports ear pain that occurs on one side only.
- Patient reports unexplained numbness in the mouth or lips.
- Patient reports hoarseness or sore throat that does not resolve within a few weeks.

For more information about Oral Cancer please visit www.oralcancerfoundation.org



Overview of HPV and Oral/Oropharyngeal Cancers

There are two distinct pathways by which most people come to oral/oropharyngeal cancers. One is through the use of tobacco and alcohol, which is a long-term problem and historic cause. While the historic tobacco cause has leveled off in incidence, a new etiology is increasing the incidence of these cancers. HPV (Human Papilloma Virus) is the most commonly sexually transmitted virus in the US. HPV oral/oropharyngeal cancers and tobacco/alcohol oral cancers produce very different signs and symptoms, and the anatomical sites they affect are different as well. Here is a quick overview of what you need to know about HPV related oral/oropharyngeal cancers.

- There are nearly 200 strains of HPV. HPV16 is the version most responsible for oropharyngeal (very back of the mouth, areas such as the base of the tongue, the back of throat and tonsils) cancers and it affects both males and females. HPV16 also causes five other cancers, having the most impact in cervical cancer.
- The CDC (Centers for Disease Control) says nearly all sexually active Americans will develop an HPV infection during their lifetime. Almost all HPV infections occur early in peoples' sexual experiences, i.e. their teens and 20's.
- HPV is transmitted through conventional vaginal and oral sex, through skin-to-skin contact, not through body fluid transmission (i.e. saliva and semen). Approximately 99% of people who develop an HPV oral infection will clear the virus on their own. In approximately 1% of individuals the immune system does not clear the virus and it can lay dormant for decades before potentially causing a cancer.
- An important problem with HPV infections is that those who have them will not develop signs or symptoms they will be aware of. Most people will become infected, naturally clear the infection, and never know either event occurred. Only when HPV is producing a cancer will symptomatology develop that they might notice. This is the danger of HPV caused cancers because there are no precancerous warning signs.
- Currently about 72% of all oropharyngeal cancers are the results of an oncogenic HPV infection. HPV viruses cause very few front/anterior mouth cancers.
- White, non-smoking males in their 40's and 50's are the most at risk, 4 to 1 over females. Remember, these infections occurred in their early sexual experiences, not in their fourth or fifth decade of life.
- Over 16,000 men will develop an oropharyngeal cancer in 2017.
- Over 3,000 women will develop an oropharyngeal cancer in 2017.

HPV Etiology Oropharyngeal Cancer Signs and Symptoms

- Hoarseness or sore throat that does not resolve within a few weeks.
- A painless, firm, fixated lump felt on the outside of the neck, which has been there for at least two weeks.
- Constant coughing that does not resolve after many days.
- Difficulty swallowing; a sensation that food is getting caught in your throat.
- An earache on one side (unilateral) that persists for more than a few days.
- All the above symptoms have the commonality of being persistent and not resolving.

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