Lecture Synopsis:
Over 75% of sexually active Canadians will have a HPV (Human papillomavirus) infection in their lifetime. 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. What are the implications to dentistry? What are the subtle, life-saving symptoms and how should our extraoral/intraoral cancer screening be adjusted to compensate for this new profile? There is an urgent need for change. It’s within our hands!

Learning Outcomes:
• Understand the current statistics related to the sexually transmitted HPV connection with oral and oropharyngeal cancer
• Perform a systematic extraoral and intraoral examination with attention to high risk anatomical areas related both to HPV and non-HPV oral and oropharyngeal cancer
• Recognize the subtle, life-saving signs and symptoms that may accompany HPV oropharyngeal cancer
• Introduction to clinical resources and client education materials that will aid in assessment, documentation and management pathways of an abnormal finding

References:
www.oralcancerfoundation.org
www.hpvinfo.ca Link to teaching tools:
http://hpvinfo.ca/learn-explore/#teachingtools

Oral Cancer Screening: The Urgent Need for Change
Today’s Oral Cancer Profile is redefining our oral cancer screening

Oral and Oropharyngeal Cancer Risk Factors
1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)

75% of Canadians will be affected
Knowledge is your best defence

HPV: An Escalating 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

HPV-positive Oropharyngeal Cancer on the Rise:
Study: To investigate the population-level burden of HPV-positive oropharyngeal squamous cell carcinomas cancer
Methods: HPV status was collected by three population-based 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, 9 strains have been identified as oncogenic with high risk being HPV-16 and HPV-18.

HPV is associated with nearly all cases of pre-invasive and invasive cervical neoplasia;

- The oropharynx is the head and neck subsite particularly vulnerable to the development of tumors attributed to prior HPV infection.
- Oncogenic transformation is directly related to a persistent HPV infection with a high-risk strain.

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.

If recent incidence trends continue, the annual number of oropharyngeal cancers related to HPV-positive oropharyngeal cancers will surpass annual number of cervical cancers by the year 2020.

HPV Attributable Cancer Cases per Year*

*Data are from all states meeting USCS publication criteria for all years 2008 to 2012 and cover about 99% of the U.S. population.

Clinical Presentation: Condyloma Acuminatum

Cluster of multiple, pink, slightly papillary nodules attached with a broad or sessile base with a mild transparency to the surface nodules.

Painless, persistent, more common in young adults.

HPV 6, 11, 16 and 18, STI.

Lips, tongue and soft palate.

Also known as venereal wart.

Local excision, laser ablation.

Re-inoculation common amongst sexual partners.

Clinical Presentation: Verrucous Carcinoma

Diffuse white papillary or corrugated thickening.

Painless, continual enlargement.

References:


CDC; Centers for Disease Control and Prevention.

http://www.cdc.gov/cancer/hpv/statistics/cases.htm
HPV 16 and 18, smokeless tobacco
Commonly occur on the mandibular buccal vestibule at site of chronic tobacco exposure

Extraoral Palpation of High Risk Anatomical Areas
Systematic Examination of Lymph Nodes:
1. Submental
2. Submandibular
3. Cervical chain
4. Supraclavicular
5. Occipital
6. Posterior auricular
7. Anterior auricular

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
- Efferent vessels pass to deep cervical nodes

Cervical Nodes
- 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
Supraclavicular Nodes

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

**Technique**

- Positioned behind client
- Bilateral palpation; shoulders raised and rounded forward
- Enlargement should always be investigated

Lymphadenopathy Considerations:

**Infection Related**

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

**Neoplasia Related**

- Firm, usually not symptomatic
- Firm and fixed
- Client 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 client 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

Intraoral Palpation of High Risk Anatomical Areas

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

Tongue
Palpate and visually inspect dorsum, lateral borders and ventral surfaces
Notes:

References:

Resources:
For information on Orascoptic Loupes/Magnification please contact; Technical Support & Customer Service: 1 (800) 369-3698

Scott Gibson Professional Representative for Ontario: M: 416-566-4425 E: scott.gibson@sybron.com

For further information regarding VELscope Vx, please contact Wayne Rees, VP, LED Dental Inc. Email: wayne.rees@leddental.com Website: www.velscope.com

‘Join the Fight’ program and receive a free VELscope VX

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 client to take a deep breath and hold or say “ah” enabling the clinician enables the clinician to gain better visual acuity

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

CLINICAL RESOURCE: (provided in handout)

The Problem: Late Stage Discovery
Oral Cavity and Pharynx
All Stages – 59.1%
Local – 81.8%
Distant – 25.5%

Oral Cancer and Dysplastic Progression:
The Technology Platform of the VELscope Vx System

- Increased metabolic activity of the dysplastic cells in the epithelium, causes a decrease in FAD, resulting in decreased fluorescence
- Breakdown of the collagen matrix which occurs as a prelude to tumor invasion, results in decreased numbers of collagen cross-links, and thus decreases fluorescence
- The VELscope system uses enhanced tissue fluorescence visualization technology to directly view the oral mucosa with real-time feedback more effectively than can be achieved with traditional white light examination with the naked eye.

Clinical Assessment, Management and Referral

- In the case of an abnormal lesion with an identified etiology and patient awareness, first remove the causative factor and re-appoint in 14 days for observation
- If the abnormal finding has resolved there is no further microscopic investigation required; continue to monitor site for recurrence
- If not resolved in 14 days, further microscopic evaluation is required
  - Only true diagnostic tool is a biopsy
- Ethical responsibility to refer and document referral

Clinical Practice & Educational Resources:

1. Glossary of Descriptive Terminology (provided at end of handout)
2. Medical History Update Form (provided at end of handout)
3. Quick Reference Guide to Descriptive Terminology (Handout provided)
4. Lexi-Comp Reference Library: www.lexi.com/dentistry (Promo code: RDHC01)
5. PennWell webinars www.ineedce.com ‘Oral Cancer Today: The Impact on our Profession’ “It’s Time to Discuss Sex, HPV and it’s Impact on Dentistry”
6. iTunes Podcast: The Thriving Dentist with Gary Takacs. Free download; interview with Jo-Anne Jones “Oral Cancer: An Emerging Pandemic?”
7. ODHA Oral Cancer Fact Sheets www.odha.on.ca
8. CDHA Oral Cancer Course www.cdha.ca/oralcancer
9. CDHA Public Education Site – Oral Cancer Awareness
Download the ‘Early Detection Flyer’
Download the ‘Fact Sheet and Quick Quiz’
Download the ‘Oral Cancer Screening for Today’s Population Booklet’
10. Customized Assessment Risk Evaluator www.philipscare.com
11. HPV Info Healthcare Professionals and Public Information
http://hpvinfo.ca/resources/
12. Free downloads for oral cancer screening/documentation/referral
14. SMILE: Healthy Teeth – Healthy Body (Health Canada booklet)
To obtain printed copies of the document (limit of 50 copies per order), contact
publications@hc-sc.gc.ca
15. CDHO Knowledge Network HPV Fact Sheet -
http://www.cdho.org/Advisories/CDHO_Factsheet_Human_Papillomavirus.pdf

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
Glossary of Descriptive Terminology Commonly Used to Describe Oral Lesions

Bulla
A Blister like lesion > 1 cm in diameter that contains serum and possibly extravastated blood

Desquamative
The oral epithelium is sloughing caused by separation from the submucosa. Desquamative lesions are often preceded by bullae.

Ecchymosis
Oral ecchymoses normally originate from trauma clinically appearing as an area of oral submucosal hemorrhage > 2 cm. at its greatest dimension.

Endophytic
An oral mucosal lesion that extends inwards to the adjacent tissues and are characteristically indurated.

Erosion
The epithelial surface of the oral mucosa is thinning characterized by being red in colour or erythematous.

Erythematous
The oral mucosa is red in colour resulting either from erosion of the epithelial surface or from increased vascularity.

Exophytic
An oral mucosal lesion that extends outward from the adjacent mucosa.

Indurated
An oral mucosal lesion that is firm when palpated.

Keratinized
An adherent white patch that cannot be removed or wiped off caused by excess keratin on the epithelial surface of the oral mucosa.

Macule
A flat, circumscribed, pigmented lesion on the oral mucosa.

Neoplasm
Abnormal new mass of tissue

Nodule
An elevated, circumscribed lesion on the oral mucosa.

Papillary
An oral mucosal lesion with a surface consisting of numerous blunted projections.

Papule
A well circumscribed, slightly elevated solid lesion on the oral mucosa.

Pedunculated
Refers to a mode of attachment to the adjacent mucosa by a narrow stalk

Petechiae
Small hemorrhages in the oral submucosa characterized by multiple small erythematous spots on the affected mucosa
Pseudomembrane
A non-adherent covering on an oral ulcer that consists of an accumulation of necrotic debris. Pseudomembranes are normally white to yellowish in colour.

Sessile
Refers to a mode of attachment to the adjacent mucosa by a broad base

Ulcer
A localized area demonstrating a complete loss of oral epithelium

Verrucous
An oral mucosal lesion with a surface composed of numerous elongated projections.

Vesicle
A small blister less than .5 cm. at its greatest dimension on the oral mucosa

Case Study Questions:
1. In regards to the extraoral and intraoral findings, which of the following is possibly a contributing factor?
   a. Exposure to HPV-2 or HPV-40
   b. Smokeless tobacco use
   c. Persistent infection with HPV-16 or HPV-18
   d. Lupus erythematosus

2. Which one of the following management strategies should the dental hygienist employ regarding the clinical findings?
   a. Surgical biopsy
   b. Provide client with educational materials related to HPV-related oral lesions.
   c. Referral to MD and subsequent request for referral to ENT.
   d. Both (b) and (c) are correct.

3. Which of the following characteristics generally pertain to a possibly malignant node?
   a. Firm to palpation
   b. Appears fixed to an underlying structure
   c. Both (a) and (b) are correct
   d. Tender to palpation

4. What other clinical signs or symptoms may be related to the clinical finding?
   a. Slurred speech
   b. Tongue that tracks to 1 side when stuck out
   c. Asymmetry in tonsillar area
   d. All of the above may be related
Referencing the documentation guide provided, document the following fields for:

**Lesion A:**

Shape

Colour

Surface of Lesion

Mode of attachment

Symmetry

Number

Margins

Overall configuration

Mobility

Type of Lesion (refer to glossary)

**Lesion B:**

Shape

Colour

Surface of Lesion

Mode of attachment

Symmetry

Number

Margins

Overall configuration

Mobility

Type of Lesion (refer to glossary)
Medical History Update

Client 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 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 osteoarthritis or rheumatoid arthritis? ☐ Yes ☐ No
Have you experienced increased joint pain or decrease in mobility? ☐ Yes ☐ No

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: ________________________________

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? ________________