Pallavi Parashar BDS, DDS, FRCD (C), Dip. ABOMP
Clinical Associate Professor
University of Alberta, School of Dentistry
pparasha@ualberta.ca
Objectives

* Develop a systematic approach of evaluating changes in the Oral Mucosa
* Recognize clinical patterns of intraoral premalignant and malignant lesions
* Provision of new knowledge in the area of Human Papilloma Virus associated benign and malignant oral conditions
Resources

• Text books
• PubMed
• Reliable Online Resources

Googling your symptoms when you don't feel well is the most efficient way to convince yourself you're dying.
Biggest Dilemma ??????

Normal vs. Abnormal
Head and Neck Exam

• Oral cancer screening
• Oral Pathology screening (Metabolic, infectious, neoplastic, developmental, autoimmune, bone, other processes)
• Signs of abuse or domestic violence
• Some medical conditions have frank oral manifestations
• Base line evaluation
• Sometimes we are the first to identify and address a problem
Failure to diagnose and delayed diagnosis of cancer: medicolegal issues.

Epstein JB\(^1\), Sciubba JJ, Banasek TE, Hay LJ.

Author information

Abstract

BACKGROUND: Failure to diagnose and delayed diagnosis of cancer can have a significant effect on patients' morbidity and mortality. Oral health care professionals should be alert for oral premalignant and malignant disease and head and neck involvement by malignant disease. These issues have patient care and medicolegal implications.

CASE DESCRIPTION: To provide guidance to practitioners, the authors present a series of cases of oral and head and neck cancer that resulted in legal action. They chose the medicolegal cases to highlight dental professionals' potential legal liability and provide guidance in patient care.

CLINICAL IMPLICATIONS: Clinicians need to obtain complete comprehensive histories, perform thorough head and neck and oral examinations and appreciate the importance of being vigilant for abnormalities that may lead to early detection of potentially malignant disease.
Head and neck, oral, and oropharyngeal cancer: a review of medicolegal cases.

Epstein JB¹, Kish RV², Hallajian L³, Sciubba J⁴.

Author information

Abstract

OBJECTIVE: The purpose was to review cases of malpractice in head and neck cancer (HNC) in order to examine allegations and outcomes of the litigation and to assess the implications for best practices in the clinical care of patients with HNC.

MATERIALS AND METHODS: Three U.S. legal databases were accessed to assess the basis of the cases and the outcomes reported.

RESULTS: Dental and medical health care providers are identified in cases with alleged failure to diagnose or delayed diagnosis. In addition, inadequate prevention and management of oral complications of cancer therapy also may result in medicolegal action. In the dental cases, the mean recovery was $1,033,500.11, and in medical cases, it was $2,828,639.20.

CONCLUSIONS: In addition to failure in the diagnosis of malignant disease, our review identified failure to properly prevent and manage oral complications as potential causes of medicolegal actions. Evidence-based care with a multidisciplinary team may promote diagnosis of disease and prevention and management of complications.

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The First Step in Successful therapeutic management of a patient with an oral mucosal disease is

Creating a Differential Diagnosis

Working Diagnosis
Classification

Lesion

- Normal or variation of normal
- Benign/Reactive
- Premalignant
  - Or
  - Potentially malignant
- Malignant
Categories of Must-Know Lesions

• Lumps and Bumps
• Mucosal Discoloration (white, brown, red, blue/purple, gray- black, yellow)
• Ulcers, Blisters

*Many conditions overlap in these categories
Common ‘Bumps’

- Pyogenic Granuloma
- Peripheral Ossifying Fibroma
- Peripheral Giant Cell Granuloma
- Peripheral Fibroma
- Parulis
White lesions

Main reasons why an area looks ‘white’:

• Changes within the epithelium
• Surface debris/accumulation
• Changes in the connective tissue (eg, scar)
<table>
<thead>
<tr>
<th>Plaques with sharp margins</th>
<th>Plaques with ill-defined margins</th>
<th>Mixed red and white lesions</th>
<th>Sloughing plaques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leukoplakia</td>
<td>Smokeless Tobacco Keratosis</td>
<td>Erythroleukoplakia</td>
<td>Candidiasis</td>
</tr>
<tr>
<td>Frictional Keratosis</td>
<td>Chronic Cheek bite</td>
<td>Lichenoid reaction</td>
<td>Aspirin burn</td>
</tr>
<tr>
<td>Linea Alba</td>
<td>Leukoedema</td>
<td>Erosive Lichen Planus</td>
<td>Cocaine burn</td>
</tr>
<tr>
<td>Alveolar Keratosis</td>
<td>White Sponge Nevus</td>
<td>Geographic tongue</td>
<td>Ruptured blisters</td>
</tr>
<tr>
<td>Actinic Cheilosis</td>
<td>White coated tongue</td>
<td>Nicotine Stomatitis</td>
<td>Necrotic Mucosa</td>
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<tr>
<td>Lichen Planus</td>
<td>Hairy Leukoplakia</td>
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<td>Pizza burn</td>
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<tr>
<td>Lichenoid reaction</td>
<td>Nicotine stomatitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lupus erythematosus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographic tongue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin graft</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Granular cell tumor</td>
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</tbody>
</table>
Ulcers

**Acute (Short onset)**
- Traumatic Ulcer
- Aphthous Ulcer
- Herpetic lesion
- Allergic Reactions
- Viral infection
- Iatrogenic

**Chronic (Long Duration)**
- Lichen Planus
- Other immune mediated conditions
- Malignancy
- Infectious disease
- Oral manifestations of certain systemic diseases
Human Papillomavirus
Human Papillomavirus (HPV)

- Group of more than 200 related viruses
- Each Virus is given a number which is called its HPV type
- Self limiting in most cases

https://www.cdc.gov/hpv/parents/whatishpv.html
Most common Sexually Transmitted Infection

-Center of Disease Control and Prevention
Other modes of HPV Transmission

- Vertical
- Horizontal (non sexually)
- Autoinoculation
- Fomites
Classification of HPV types

All HPVs

- Cutaneous HPV types
  - Low-risk Mucosal HPV types
    - Benign neoplasias
  - High-risk Mucosal HPV types
    - Benign neoplasias, malignancies
The majority of oral HPV infections are subclinical and cleared within 1 to 2 years (median 6 months)
### HPV Types

<table>
<thead>
<tr>
<th>LOW RISK</th>
<th>HIGH RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,11,40,42,54,55,61,62</td>
<td>16,18,26,31,33,35,39,45,</td>
</tr>
<tr>
<td>,64,67,69,70,71,72,81,</td>
<td>51,52,53,56,58,59,66,68,</td>
</tr>
<tr>
<td>82,83,84,89</td>
<td>73,82</td>
</tr>
</tbody>
</table>
Tree Man
A photo of Abul Bajandar, also known as "tree man," take on Jan. 31, 2018. After 24 surgeries, the unusual growths on his hands and feet are starting to come back.

Credit: Sam Jahan/AFP/Getty
# NHANES STUDY RESULT

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral HPV</td>
<td>11.5% (11 Million nationwide)</td>
<td>3.2% (3.2 million nationwide)</td>
</tr>
<tr>
<td>High risk HPV</td>
<td>7.3% (7 million nationwide)</td>
<td>1.4% (1.7 million nationwide)</td>
</tr>
<tr>
<td>HPV 16</td>
<td>1.8% (1.7 million nationwide)</td>
<td>0.3% (0.27 million nationwide)</td>
</tr>
</tbody>
</table>

Ages 18-69 from 2011-2014

Oral Manifestations of HPV

• Benign
• Premalignant
• Malignant
Benign HPV related Papillary Growths

- Squamous Papilloma
- Verruca Vulgaris
- Condyloma Acuminatum
- Multifocal epithelial hyperplasia
Squamous Papilloma

- Arises from stratified squamous epithelium
- Initiated by human papilloma virus (HPV)
  - HPV 6&11 the most common types
- Appears as an exophytic papillary growth
- May be sessile or pedunculated
- May appear white (keratinized) or red (nonkeratinized)
- May appear on any mucous membrane
Condyloma Acuminatum

- Venereal warts
- HPV 2, 6, 11, 16, 18, 53, 54
- 20% of all STD’s
- Sign of sexual abuse when found in children
- Incubation period: 1-3 months
- Oral Cavity: Labial mucosa, lingual frenum, soft palate
- Lesion infected with high risk HPV, at risk to malignant transformation
- Treatment: Surgical Excision
Verruca Vulgaris
Multifocal Epithelial Hyperplasia

- Heck’s Disease
- Certain demographic groups
- Multiple members of the family
- Buccal, and labial mucosa
- HPV 13, 32
Proliferative Verrucous Leukoplakia (PVL)

- First described in 1985 by Hansen et al
- Multifocal, progressive lesion of the oral mucosa
- Women
- High recurrence rate
- High rate of malignant transformation, rates varying between 40*-100%
Proliferative Verruous Leukoplakia
Clinical Presentation

- Solitary or Regional/diffuse
- Flat, papillary /verrucoid surface
- Leukoplakia- erythroleukoplakia
- Location: Alveolar ridge/Gingiva
  - Tongue
  - Buccal Mucosa
  - Others: Floor of mouth, labial mucosa, palate
- Multifocal, often bilateral
What causes this??

- **Tobacco**: 37% patients used some tobacco product
- **Alcohol**: 17% of patients consumed alcohol
- **Human Papillomavirus**
  - Palefsky *et al*: 89% (8/9) of PVL +
  - Femiano *et al* and Gopalakrishnan *et al* (2/8) +
  - Campisi *et al*: 24.5% (14/58) of PVL +
  - Fettig *et al*: None
  - Bagan *et al*: None
  - Garcia-Lopez *et al*: None
- **Ebstein Barr Virus**: Maybe
- **Candida**: Marx *et al* 93% (27/29 patients)
  - Incidental or Real cause and effect
- **Weakened immune system**
Management and Follow up

- Optimal management techniques lacking due to paucity of data
- Series of biopsies (histologic comparison and progression): Average 10-14 biopsies
- Premalignant changes: Complete excision
- Modalities: Scalpel *, laser ablation, electrocautery, cryoablation, photodynamic therapy
- Recurrence and progression to malignancy despite intervention
- Recurrence: 3.66 new lesions during lifetime
- 71.2%-100% rate of progression to malignancy

Michael Douglas: oral sex caused my throat cancer

Michael Douglas has said that his throat cancer was caused by oral sex.
Squamous Cell Carcinoma

• Most common malignancy in head and Neck region
• 6$^{th}$ most common worldwide
• Males > females
• 5$^{th}$-6$^{th}$ decade
• Main Risk factor: Tobacco, alcohol
• 5 yr prognosis: 40-50%

Journal of Cranio-Maxillo-Facial Surgery 42 (2014) 1506e1514
HPV positive SCC

• HPV is an independent risk factor
• 2017 edition of the WHO/IARC Classification of Head and Neck Tumors
• Prevalence:
  32% - 84% Oropharyngeal
  5.9% - 10% Oral Cavity
• Risk factors: Sexual transmission
HPV positive OPSCC

• Younger patients with a lower comorbidity index
• Male, white, 40-55yr, non-smoker, non-drinker, tumor in tonsils or base of tongue
• High socioeconomic status
• Earlier sexual debut
• Multiple sexual partners and orogenital sexual practice
• HIV-infected
• Individuals with hx of anogenital SCC: 4-6 fold increase risk of OPSCC
Soft palate, base of tongue, lingual and palatine tonsils, and surrounding tissues
Prognosis

• HPV-positive OPSCC is extremely sensitive to radiation exposure
• HPV-positive oropharyngeal cancers have better outcomes and fewer relapses after treatment than HPV-negative cancers
• Disease control worse for patients who have a significant past or current smoking history
HPV related Cancers

On a global scale, HPV accounts for more than 50% of infection-linked cancers in women and approximately 5% in men

- 91% of cancers of cervix
- 91.1% of cancers of the anus
- 75% of cancers of the vagina
- 63.3% of cancers of the penis
- 68.8% of cancers of the vulva
- 70% of all oropharyngeal cancers

- *Journal of the National Cancer Institute*, Volume 107, Issue 6, 1 June 2015
- CDC
New Knowledge about HPV

• Association with cigarette and marijuana ***
• Association with sexual and behavioral characteristics. Highest in men who reported having same sex partners***
• Association with concurrent oral and genital HPV infection
Vaccines
Can the HPV vaccine prevent oral HPV and oropharyngeal cancers?

The HPV vaccine that is now on the market was developed to prevent cervical and other less common genital cancers. It is possible that the HPV vaccine might also prevent oropharyngeal cancers, since the vaccine prevents an initial infection with HPV types that can cause oropharyngeal cancers, but studies have not yet been done to determine if the HPV vaccine will prevent oropharyngeal cancers.
CHICAGO — With the number of cases of HPV-associated cancers on the rise, the American Dental Association (ADA) has adopted a policy that urges dentists to support the use and administration of the human papillomavirus (HPV) vaccine.

The combined estimate by the American Cancer Society is that there will be more than 50,000 new cases of oral and oropharyngeal cancers in 2018, of which 70 to 80 percent will be attributable to HPV. The HPV vaccine could help prevent the vast majority of the oropharyngeal cases, but compared to other vaccines in the U.S., it is underutilized. According to the ADA Council on Scientific Affairs, the single best predictor of whether a young person or adolescent receives the vaccine is a recommendation from a trusted health care professional.
Issues with the vaccine

- Low uptake among boys
- Vaccine age recommendations

FDA News Release

FDA approves expanded use of Gardasil 9 to include individuals 27 through 45 years old

For Immediate Release: October 05, 2018
Look carefully!