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2  **ORAL CANCER  
SCREENING**

(THE PUSH)

**EVALUATING TECHNOLOGY**

3  **THE PROBLEM OF LATE DIAGNOSIS**

- Who is responsible for the late diagnosis of oral squamous cancer?

4  **THE PROBLEM OF LATE DIAGNOSIS**

- The patient, the physician and the dentist,, all share in this lack of early diagnosis. \*

5  **THE PROBLEM OF LATE DIAGNOSIS**

- Lack of symptoms, lack of yearly exams, lack of attention by the health care provider. The highest risk patients don't visit health care providers
- Lack of reliable screening methods, such as those used in medicine like Mammography, PAP Smears, and Colonoscopy.
- General medical practitioners were less likely to examine the patient's oral mucosa than general dental practitioners. (BDJ, 203, 13 July 2007)

6  **5 YR. ORAL CANCER SURVIVAL RATES**

7  **ORAL CANCER SURVIVAL**

- Will new "screening" technology improve the survival rate for oral SCC?
  - Oral SCC is a low incidence disease.
  - 34,000 new cases each year (estimated)
  - 130,000 practicing dentists in the US. (estimated)
  - Each dentist will see 1 oral SCC every 4 years.
  - Earlier detection should improve survival

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11  **PET/CT**

12  **THE CHANGING FACE OF ORAL SQUAMOUS CELL CARCINOMA**

- The etiology is now better understood then ever before.
- Will the emphasis on screening make a difference, and result in less morbidity and mortality?

13  **What are the main oral cancer etiologic factors ?**

- A.
- B.
- C.

- D.
- E.

14  **Is your wife at greater risk for oral cancer or cervical cancer ?**

- CERVICAL or ORAL

15  **NEGOTIATING JARGON**

- Cancer: H & N, Oral, Oral Pharyngeal, Pharyngeal.
- Screening, Routine Exam, Adjunctive devices.
- Pre-cancerous lesions, Dysplasia.
  - Leukoplakia, Speckled Leukoplakia, Erythroplakia.

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18  **CANCER MOUTH WASH**

19  **ORAL CANCER SCREENING**

#### TECHNIQUES AND METHODS

- Visual and Manual examination of the H&N - The classic approach
- Vital Staining
  - Toluidine Blue
  - Iodine - no one uses this modality
- Luminescence
  - ViziLite Plus
    - Chemiluminescence plus Toluidine Blue
  - Microlux-DL
- Auto fluorescence
  - VELscope
  - Identafi 3000

20  **VITAL STAINING**

- TOLUIDINE BLUE
  - Not useful in identifying occult lesions.
  - Dysplasia, Atypia, and Inflammation all stain variably.
  - Ca-in-situ, Oral SCC will stain positively
  - \*\*Helpful in choosing an area to biopsy of a previously identified lesion.
- IODINE
  - Marks epithelial dysplastic margin.
- Neither method has gained popularity, as clinicians have felt that direct visualization is sufficiently sensitive.
  - Both are nonspecific, training in interpretation is the key.

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26  **LUMINESCENCE**

- ViziLite Plus

- VizLite is a chemiluminescent light stick the Plus component is TOLUIDINE BLUE.
- The chemiluminescent component is claimed to help visualize suspect lesions. “Aceto White Lesions”
  - It does make white appear whiter
  - ??? Science ??? Does this make cancer detection easier??
    - There is O. B. literature but it is not directly applicable.
- The Plus component (TOLUIDINE BLUE) does have a place in identifying which part of a lesion is likely to yield the most diagnostic information.

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32  **AUTOFLUORESCENCE**

- VELscope and Identify 3000

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36  **AUTOFLUORESCENCE**

- Tissue autofluorescence is based on the principle that tissue molecules will self fluoresce when excited by specific light waves
- Fluorescing tissue components include tryptophan, porphyrins, collagen cross links, elastin and flavins.
- The wavelengths which excite the greatest fluorescence in oral mucosa range from 400 to 460 nm. Violet and Blue.
  - Identify 3000 uses 405 nm. (Violet) (+ white, and green to highlight vascularity)
  - VELscope uses approximately 436 nm. (Blue)
    - Filtered to Green (525 nm.)

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38  **AUTOFLUORESCENCE**

- The goal is to visualize no tissue fluorescence. Loss of Fluorescence
- This implies “dysplasia, atypia, pre-cancerous lesions, cancer.”

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41  **AUTOFLUORESCENCE CONFOUNDERS**

LOSS OF FLUORESCENCE

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- Any inflammation
- Any vascularity
- Increased Vascularity
- Angular Cheilitis
- Frictional Keratosis
- Reticular Lichen Planus

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- R.H.S.

- Melanosis
- Geographic Tongue
- Inflammatory Lesions
- Attached Gingivae
- Leukoplakia is variable

42  **AUTOFLUORESCENCE**

- The goal is to visualize no tissue fluorescence. Loss of Fluorescence
- SO ----- DO THEY WORK?
  - YES
- BUT DO THEY FIND MORE CANCER? OR FIND IT EARLIER?
  - NO EVIDENCE YET!
  - The literature is poor and scant.

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49  **What are the main oral cancer etiologic factors ?**

- A. Tobacco smoking. 6x risk vs. none
- B. Alcohol (heavy use) 6x risk vs. minimal
- C. Smoking and Alcohol 15x risk
  - This is associated with 70% of H & N cancers.
- D. HPV infection
  - HPV 16 is associated with up to 25% of H & N cancers.
- E. 95% known etiology

50  **HUMAN PAPILLOMA VIRUS**

- 100 different types. Most are considered low risk and cause warts. \*
- High cancer risk HPV types are:
  - HPV-6, 11, 16, and 18 for cervical cancer.
  - HPV-16 for head and neck (oral) cancer. \*
- GARDASIL VACCINE is effective against HPV-6, 11, 16, and 18.
- Will the GARDASIL VACCINE be effective and approved for the prevention of Head and Neck cancers ?

51  **OraRisk HPV**

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55  **WHAT TO DO WITH A POSITIVE ?**

- Close observation, Vigilance, Surveillance?
- What do you do with a social history of smoking and heavy alcohol consumption?

- Is the 6 mo check up enough, especially after the result has scared the patient!

56  **H & N CANCER BEHAVIORIAL RISK FACTORS**

- Do you smoke, much?

- Do you drink, much?

- Do you engage in oral sex with multiple partners?

57  **HPV IS A BEHAVIORIAL RISK FACTOR**

- HPV (+) tumors are associated with:
  - HPV-16.
  - Certain sexual practices and the number of sexual partners.
  - Marijuana use.
- HPV (-) tumors are associated with:
  - Tobacco use.
  - Alcohol use.
  - Poor O H (brushing less than 1x/d).

- From Gillson et. al., 3-19-2008, JNCI

58  **THE GOOD NEWS - SOME FACTS**

- HPV 16 is not very closely associated with oral cancer.
- HPV 16 is associated with cancer of:
  - Base of tongue
  - Tonsils
  - Oral pharynx
  - Larynx
- HPV associated cancers have a better prognosis and a 50% reduced mortality.
- The marketing to dentists is misleading.

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