Nebraska Dental Association | ADA

POTENTIALLY MALIGNANT DISORDERS

Ashley Clark, DDS, FACD, FICD, FAAOMP

Vice President, CAMP Laboratory

Diplomate, American Board of Oral and Maxillofacial Pathology

AshleyClarkDDS@gmail.com

1

Conflicts of interest & disclaimers

- Conflict of interest: None
- The opinions expressed in this presentation are those of the speaker and not those of my lab.
- The opinions expressed in this course should not be construed as advice to care for specific patients.

2

Course objectives

- Upon completion of this course, you will be able to:
  - Discuss common presentations of potentially malignant disorders
  - Compare leukoplakia with other white lesions of the oral cavity
  - Discuss how to appropriately manage patients with potentially malignant disorders

3

4

Potentially malignant disorders (PMDs)

- Oral entities with an increased risk of squamous cell carcinoma:
  - Leukoplakia (and proliferative verrucous leukoplakia, or PVL)
  - Erythroplakia (and erythroleukoplakia)
  - Actinic cheilitis
  - Oral submucous fibrosis
  - Smokeless tobacco keratosis
  - Oral lichen planus
  - Dyskeratosis congenita
  - Fanconi anemia
  - Others!

Speight PM, Khurram SA, Kujan O. Oral potentially malignant disorders: risk of progression to malignancy. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2018;125:612-627.

5

Potentially malignant disorders

- The WHO adopted the phrase potentially malignant disorder (PMD) to describe lesions with potential to progress to malignancy
- "Premalignant" or "precancer" was formerly used
- ~85% of all PMDs are leukoplakia

Speight PM, Khurram SA, Kujan O. Oral potentially malignant disorders: risk of progression to malignancy. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2018;125:612-627.

6

LEUKOPLAKIA

7

Leukoplakia

- Defined as “a white plaque of questionable risk having excluded other known diseases or disorders that carry no risk”
- Tobacco pouch keratosis, leukoedema, lichen planus, etc. are not leukoplakia
- Lesions tend to change overtime
- A clinical term; never a diagnosis

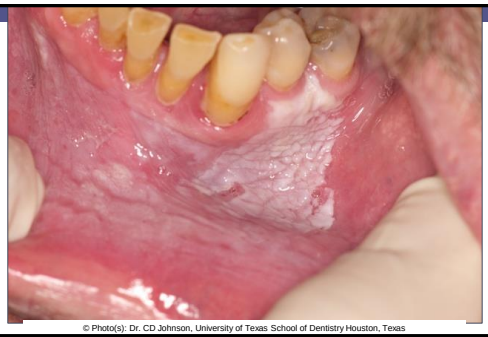
Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

8

Tobacco pouch keratosis; not leukoplakia

© Photo(s): Dr. Gregory Craft

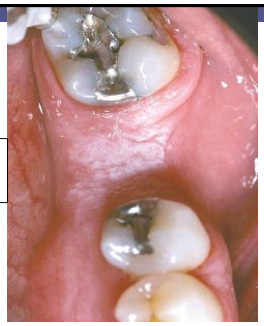
9



© Photo(s): Dr. CD Johnson, University of Texas School of Dentistry Houston, Texas

10

Frictional keratosis, not leukoplakia



© Photo(s): Dr. Jerry Bouquot, University of Texas School of Dentistry Houston, Texas

11

Leukoplakia

- Dysplastic epithelium or squamous cell carcinoma (SCCa) is seen in 20% of biopsy samples of clinical leukoplakia
- Malignant transformation potential is 5% to 50%, depending on clinical subtype

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

Mehanna HM, Rattay T, Smith J, et al. Treatment and Follow-Up of Oral Dysplasia – A Systematic Review and Meta-Analysis. *Head & Neck.* 2009;31(12):1600-1609.

Speight PM, Khurram SA, Kujan O. Oral potentially malignant disorders: risk of progression to malignancy. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2018;125:612–627.

12

Leukoplakia

- Usually found in patients over 40; prevalence increases rapidly with age
- 10% of men over age 70 are affected
- Most are found on the buccal mucosa & gingiva
- Most with dysplasia or carcinoma are found on the lateral/ventral tongue or floor of mouth

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

13

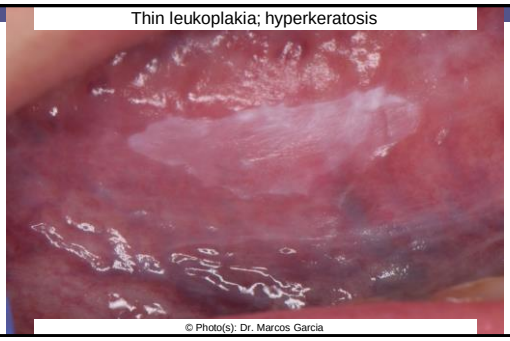
Leukoplakia

- Thin leukoplakia represents the earliest lesions and presents as slightly elevated gray or white plaques
  - Most have sharply demarcated borders
  - May appear fissured or wrinkled
- Thin leukoplakia seldom shows dysplasia on biopsy
- The malignant potential is probably less than 5%

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

14

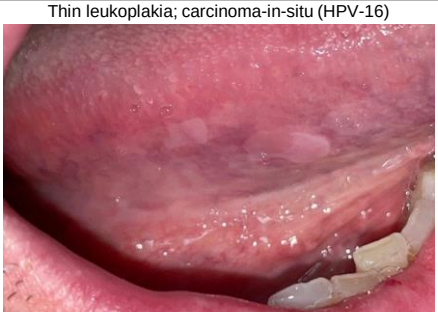
Thin leukoplakia; hyperkeratosis



© Photo(s): Dr. Marcos Garcia

15

Thin leukoplakia; carcinoma-in-situ (HPV-16)



© Photo(s): Dr. Louis Halkias

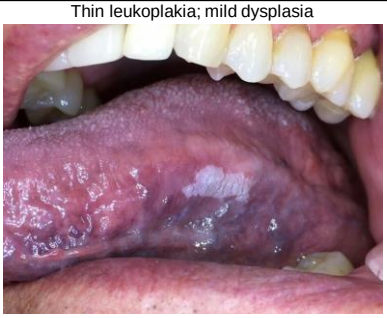
16

Thin leukoplakia; hyperkeratosis

© Photo(s): Dr. Eugene Ko, Penn Dental Medicine

17

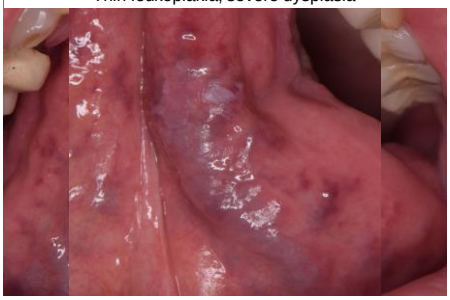
Thin leukoplakia; mild dysplasia



© Photo(s): Dr. Kyra Holt, Holt Family Dental, Pearland Texas

18

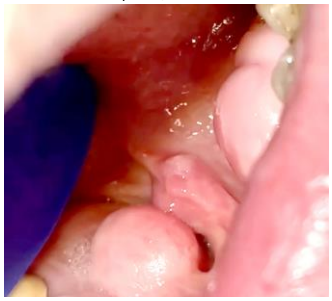
Thin leukoplakia; severe dysplasia



© Photo(s): Dr. Marcos Garcia

19

Thin leukoplakia; carcinoma-in-situ



© Photo(s): Dr. Kelsey Smith

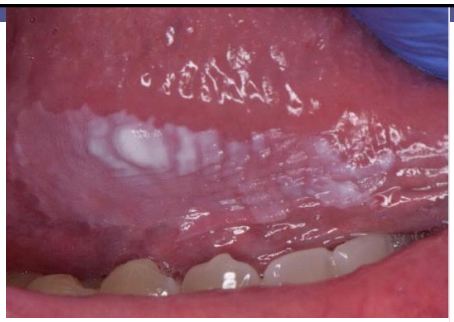
20

Leukoplakia

- Thin leukoplakia can progress to become thicker, more distinctly white, and fissured
  - Termed homogeneous or thick leukoplakia
- Most remain at this stage; up to 1/3 may regress

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

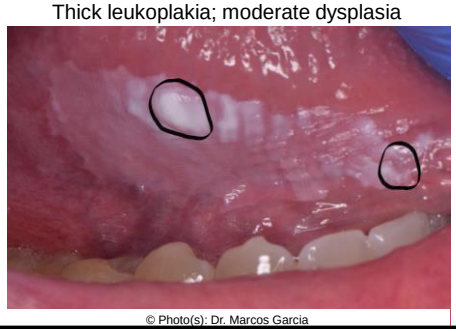
21



© Photo(s): Dr. Marcos Garcia

22

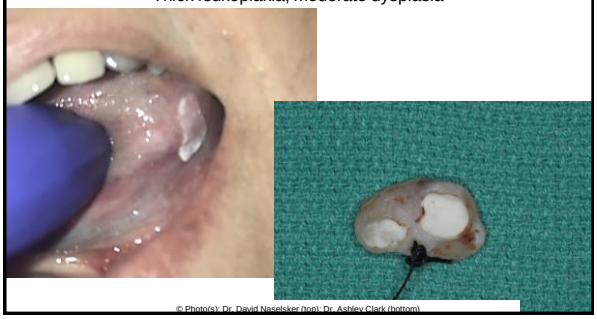
Thick leukoplakia; moderate dysplasia



© Photo(s): Dr. Marcos Garcia

23

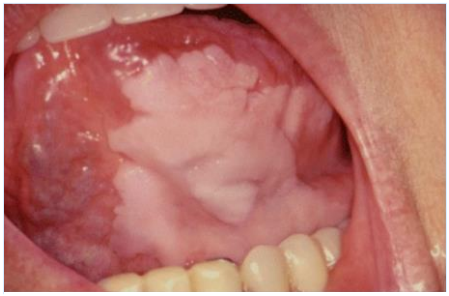
Thick leukoplakia; moderate dysplasia



© Photo(s): Dr. David Naselsker (top); Dr. Ashley Clark (bottom)

24

Thick leukoplakia; mild dysplasia



© Photo(s): Dr. Jerry Bouquot, Morgantown, WV

25

Leukoplakia

- Some lesions of thick leukoplakia can progress to develop increased surface irregularities
- Termed granular, nodular, or verruciform leukoplakia

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

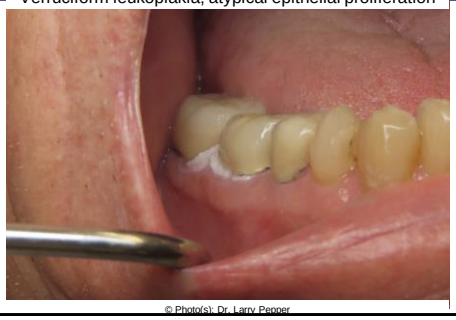
26

Verruciform leukoplakia; severe dysplasia

© Photo(s): Dr. Jerry Bouquot, University of Texas School of Dentistry Houston, Texas

27

Verruciform leukoplakia; atypical epithelial proliferation



© Photo(s): Dr. Larry Pepper

28

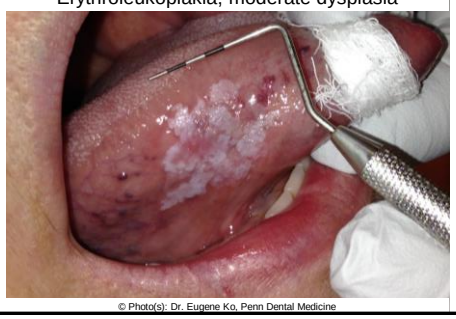
Leukoplakia

- If it progresses, the lesion begins to demonstrate scattered red patches; red and white intermixed lesions are termed erythroleukoplakia
- Red patches are termed erythroplakia
- Erythroplakia and erythroleukoplakia frequently reveal advanced dysplasia on biopsy

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

29

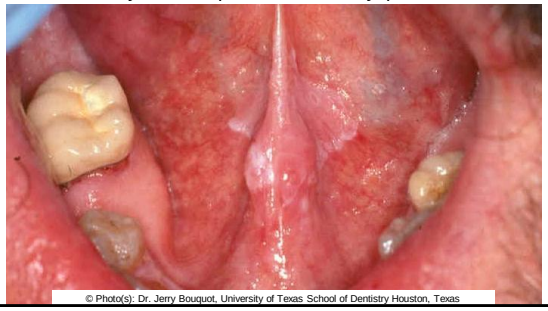
Erythroleukoplakia; moderate dysplasia



© Photo(s): Dr. Eugene Ko, Penn Dental Medicine

30

Erythroleukoplakia – severe dysplasia



31

Leukoplakia - PVL

- Proliferative verrucous leukoplakia (PVL) is a special high-risk form of leukoplakia
- Characterized by multiple keratotic plaques
- Lesions slowly spread throughout the mouth; the gingiva is typically involved
- ~100% malignant transformation rate if untreated
  - Average time of transformation is 8 years after initial diagnosis

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

32

Leukoplakia - PVL

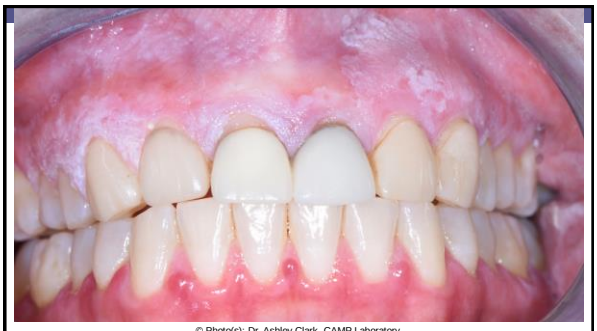
- ~100% recurrence rate
- 4:1 F:M predilection
- There is no known etiology
- The only treatment is to repeatedly destroy tissue

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

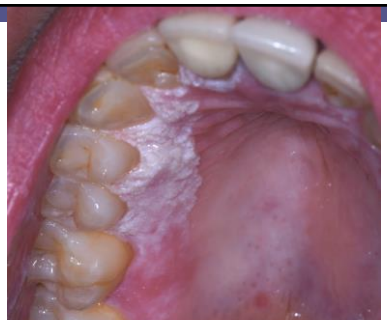
33

34

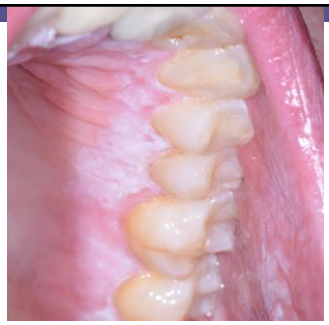
35



36

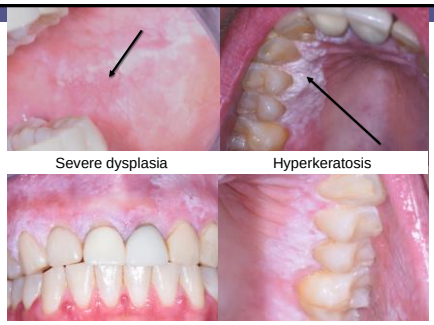


37



38

39



40

Leukoplakia

- The first step in the treatment of leukoplakia is arriving at a definitive diagnosis
- Therefore, biopsy is <u>mandatory</u> and should be taken from most severe looking areas of involvement

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

41

NICOTINE STOMATITIS

42

Nicotine stomatitis

- White keratotic change on the palate
- Due to heat and not premalignant unless the patient reverse smokes
  - Hand-rolled cigarettes and cigars are smoked with the lit end in the mouth

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

43

Nicotine stomatitis

- Found in white males, older than age 45
- Diffusely gray or white palate
- Slightly elevated papules +/- punctate red centers
  - Represent inflamed minor salivary glands
- May appear like “dried mud”

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

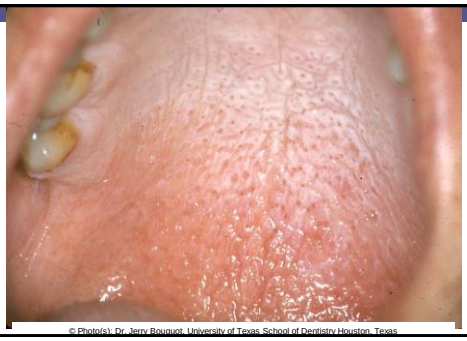
44

Nicotine stomatitis

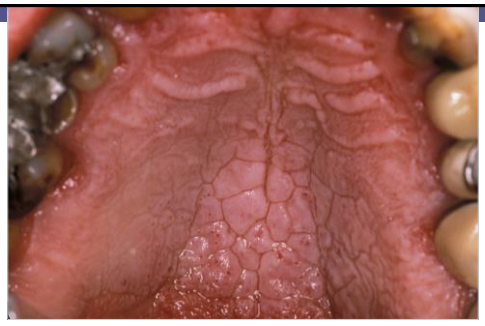
- Nicotine stomatitis:
  - Completely reversible
  - NOT premalignant unless due to reverse smoking
  - Palate returns to normal within 2 weeks of habit cessation
- Reverse smokers’ palate is premalignant and demands biopsy

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

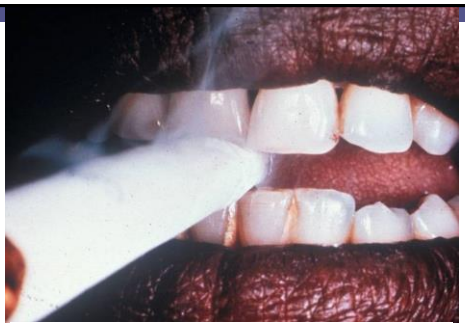
45



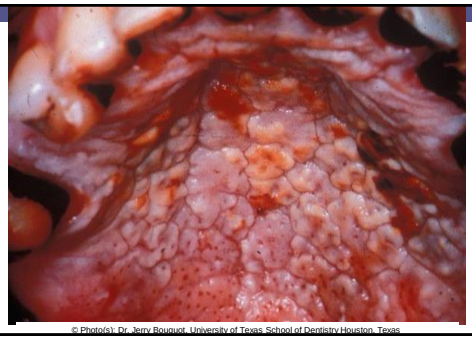
46



47



48



© Photo(s): Dr. Jerry Bouquot, University of Texas School of Dentistry Houston, Texas

49

LICHEN PLANUS

50

Lichen planus

- Discussion limited to the malignant transformation potential
- Challenging and controversial
  - Features overlap with lichenoid lesions and dysplasia
  - Literature is difficult to interpret
- The WHO claims a ~1% risk for malignant transformation

Fitzpatrick SG, Hirsch SA, and Gordon SC. The malignant transformation of oral lichen planus and oral lichenoid lesions. *JADA*. 2014;145(1):45-56.

Speight PM, Khurram SA, Kujan O. Oral potentially malignant disorders: risk of progression to malignancy. *Oral Surg Oral Med Oral Pathol Oral Radiol*. 2018;125:612–627.

51

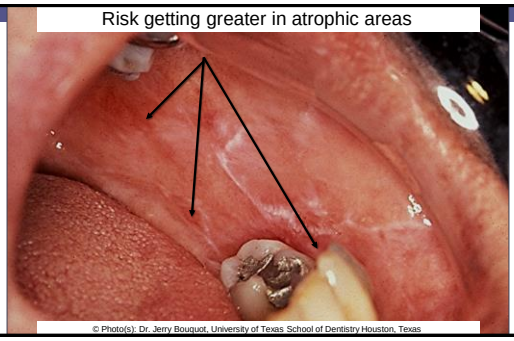
Lichen planus

- Risk factors associated with a greater risk for malignant transformation:
  - Erosive lesions
  - Smoking & alcoholism
  - Hepatitis C virus infection
  - Female sex
  - Located on the tongue

Speight PM, Khurram SA, Kujan O. Oral potentially malignant disorders: risk of progression to malignancy. *Oral Surg Oral Med Oral Pathol Oral Radiol*. 2018;125:612–627.

52

Risk getting greater in atrophic areas



© Photo(s): Dr. Jerry Bouquot, University of Texas School of Dentistry Houston, Texas

53

SCCa until proven otherwise

© Photo(s): Dr. Ashley Clark, University of Kentucky College of Dentistry

54

SMOKELESS TOBACCO KERATOSIS

55

Smokeless tobacco keratosis

- Three main types of smokeless tobacco used in the US:
  - Chewing tobacco – men during outdoor activities
  - Moist snuff – most popular
  - Dry snuff – southern women
- Moist snuff sales have increased
  - Now come in small, pre-packaged pouches
- Users start between 8-14; rarely after age 20

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

56

Smokeless tobacco keratosis

- White/gray plaque on the mucosa in direct contact; borders blend with surrounding mucosa
- Affects 60% of moist snuff users
- Lesion development is influenced by habit duration
- Develops shortly after heavy tobacco use begins; new lesions seldom arise in persons with long history of use

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

57

Smokeless tobacco keratosis

- Stretching of the mucosa will reveal a pouch
- Mucosa also appears fissured or rippled
- Similar alterations can occur with anything chronically held in the vestibule (like sunflower seeds)

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

58

Smokeless tobacco keratosis

- No induration, ulceration, or pain
- Most lesions do not advance without change in use
- Chronic use of smokeless tobacco is considered carcinogenic
- Biopsy is needed only for more severe lesions
  - ("Severe lesions" = those that are thick, granular, verruciform, indurated, ulcerated, etc.)

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

59

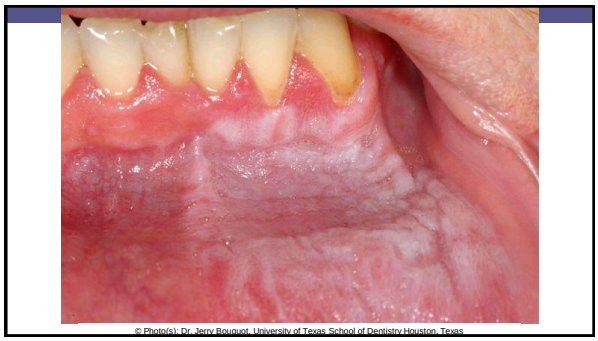
Smokeless tobacco keratosis

- Dysplasia is uncommon and if present, is almost always mild
- Malignant transformation takes several decades
  - Exception: dry snuff has a relative risk of 26
- Studies show no increased risk in Swedish snus users
- Habit cessation leads to lesion resolution
- Lesions remaining after 6 weeks should be biopsied

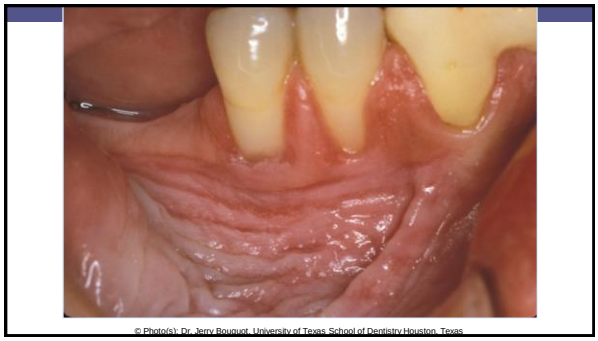
Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

60

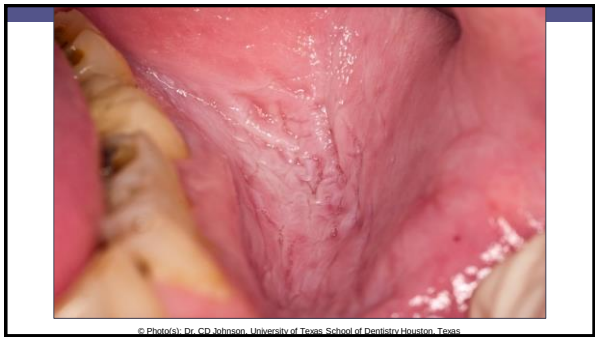
61



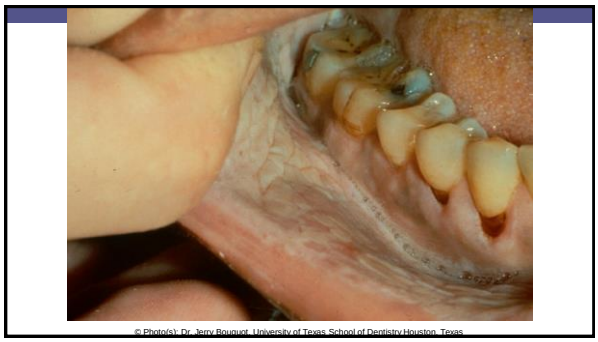
62



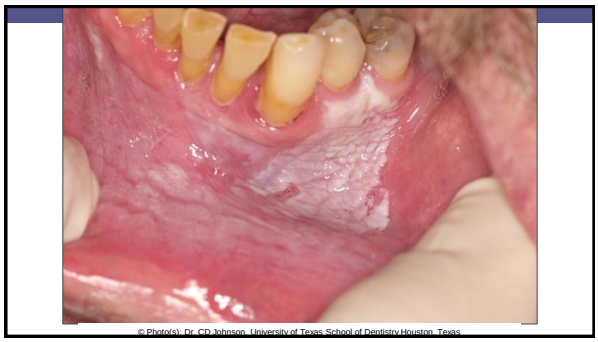
63



64



65



66

ACTINIC CHEILITIS

67

Actinic cheilitis

- Common premalignant alteration of the lower lip vermilion from long-term UV light exposure
  - Sometimes called farmer's lip or sailor's lip
- Rare in persons younger than 45
- Strong male predilection (M:F is 10:1)

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

68

Actinic cheilitis

- The lesion is slowly developing and the patient is usually not aware
- Earliest clinical changes:
  - Atrophy of the lower lip vermilion border, characterized by a smooth surface and blotchy pale areas
  - Blurring of the margin between the vermilion zone and cutaneous portion of the lip

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

69

Actinic cheilitis

- As the lesion progresses, rough and scaly areas develop
- Lesions can then thicken to form leukoplakic lesions
- Further progression leads to ulceration and suggests transformation into SCCa

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

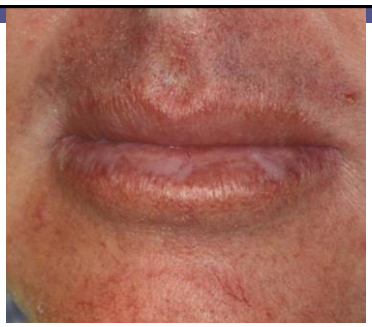
70

Actinic cheilitis

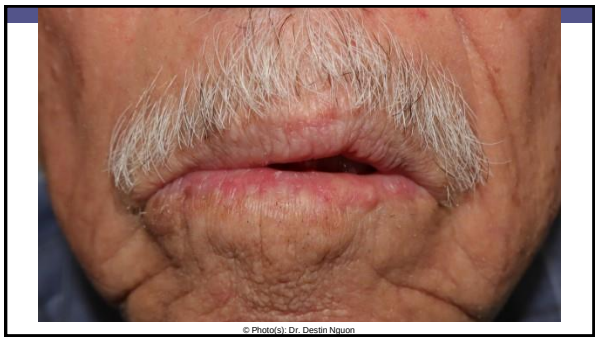
- Changes are irreversible and patients need long-term follow-up
- Sunscreen will prevent further damage
- Any area with induration, thickening, ulceration, or true leukoplakia should be biopsied
- Actinic cheilitis more than doubles the risk for SCCa, though it takes several decades and rarely metastasizes

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

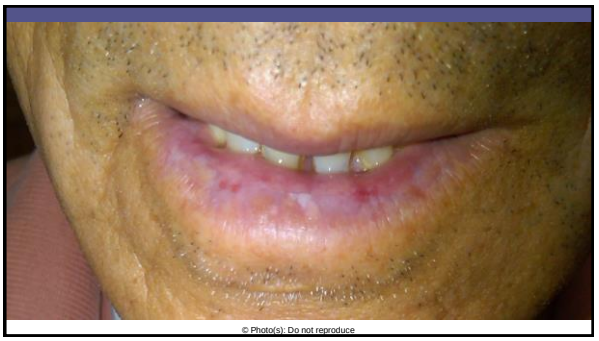
71



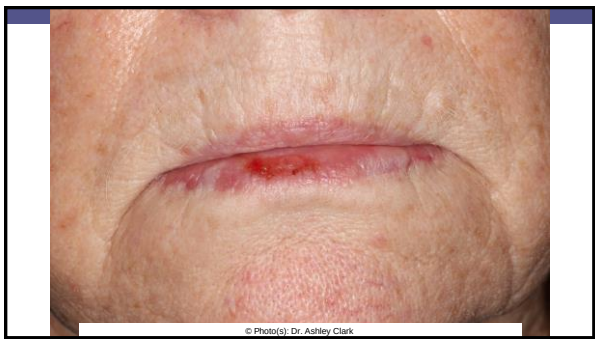
72



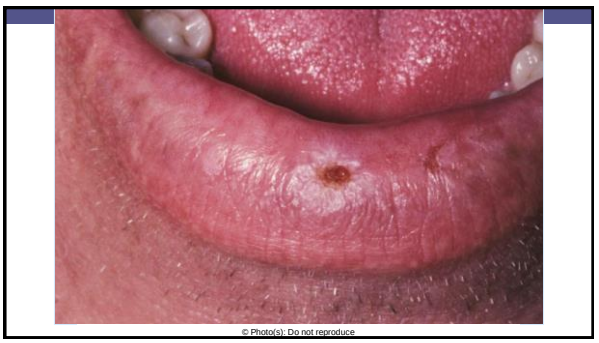
73



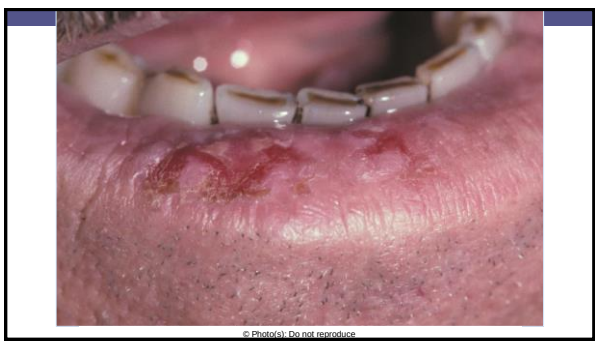
74



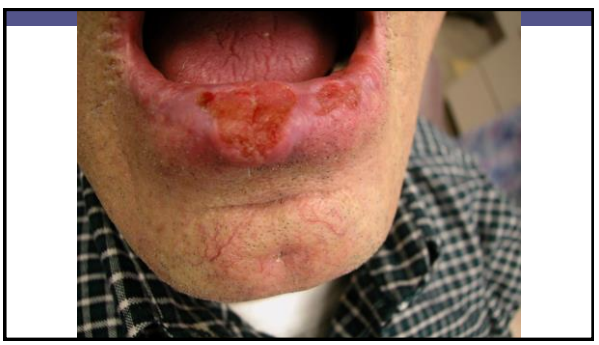
75



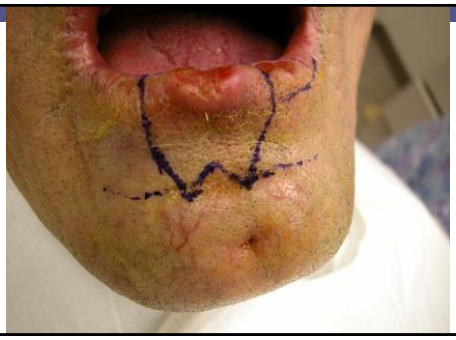
76



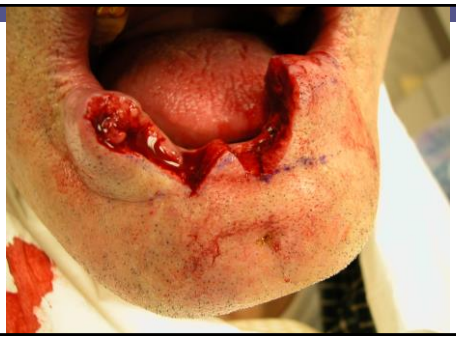
77



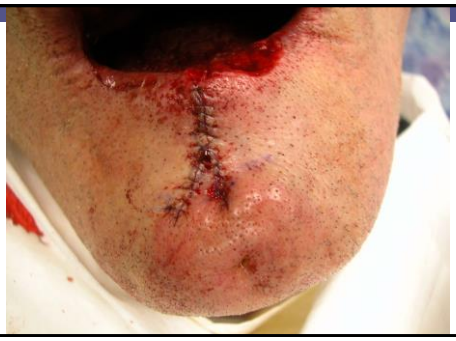
78



79



80



81

ORAL SUBMUCOUS FIBROSIS

82

Oral submucous fibrosis

- The areca nut is the seed of the areca palm, which grows in the Indian subcontinent and Southeast Asia
- The nuts grow within a fibrous husk
  - Side note: areca nut husk is used as a traditional method of cleaning teeth
- May be chewed on its own or combined with other ingredients
- In some cultures, users start the habit in childhood or adolescence; it marks transition to adulthood

Williams S, Malik A, Chowdhury S, et al. Areca Nut Symposium: Sociocultural aspects of areca nut use. Addiction Biology. 2002;7:147-154.

83

Oral submucous fibrosis

- Dr. Indraneel Bhattacharyya, board-certified oral pathologist at University of Florida, regarding the terminology around areca nut:
  - Gutka is most carcinogenic; contains tobacco, spices, areca nut (areca nuts are sometimes called betel nuts)
  - Pan masala is a generic term for gutka, but usually does not have tobacco unless asked (may also be called paan)
    - Some pre-packaged forms will have tobacco; not all pre-packaged forms will have the ingredients listed
  - Betel quid is a packet of betel leaf wrapping the areca nut, spices, slaked lime (aka calcium hydroxide), tobacco, and other ingredients
  - Areca nut by itself is addictive and carcinogenic, but not nearly as carcinogenic compared to when it is mixed with tobacco

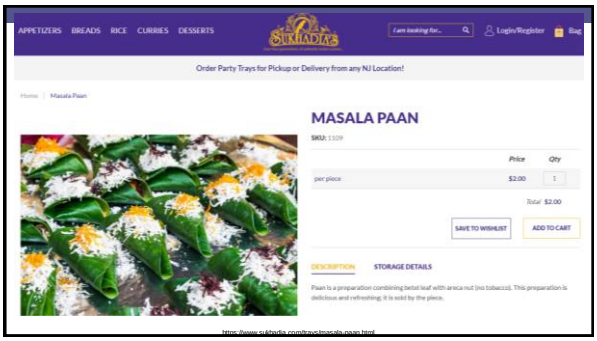
84

Oral submucous fibrosis

- Slaked lime releases alkaloids from the areca nut which results in euphoria
- It may be used for 16-24h/day
- One can purchase the ingredients legally in the US
  - The ingredients have a higher concentration of areca nut and cause lesions more rapidly

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

85



https://www.sukhadia.com/buy/masala-paan.html

86

"Paan is a preparation combining betel leaf widely consumed throughout Southeast Asia, East Asia, and the Indian and Pakistan Subcontinent. It is chewed as mouth freshener. After chewing, it is either spat out or swallowed. Paan has many variations. Slaked lime (chuna) and Katha paste is commonly added to freshen the breath."

https://www.moonlightpaan.com/

87

Oral submucous fibrosis

- Effects of areca nut use are seen primarily in the Indian subcontinent
- 600 million people worldwide chew areca nut regularly
  - It is the world's fourth most-used stimulant after caffeine, alcohol, and tobacco
- Chronic use of areca nut, with or without the other ingredients, can cause alterations in the oral mucosa
  - The formulations with tobacco are the most carcinogenic
  - Oral submucous fibrosis is the potentially malignant condition

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

88

Oral submucous fibrosis

- Oral manifestations:
  - Brown-red discoloration of the teeth and attrition
  - Brown-red discoloration of the mucosa termed betel chewer's mucosa; not precancerous
  - Lichenoid-like reactions
  - Periodontal disease
  - Oral submucous fibrosis – see next slide

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

89

Oral submucous fibrosis

- Manifests in young adult betel quid users
- Chronic, progressive, scarring, high-risk precancerous condition
- The most commonly affected site is the buccal mucosa, followed by the retromolar areas and the soft palate
- Disease can develop after only a few contacts

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

90

Oral submucous fibrosis

- The first symptoms: a burning sensation and xerostomia
- Vesicles, petechiae, and melanosis also can occur
- Lesions develop a blotchy, paleness with stiffness
- The tongue may shrink, become difficult to move, lose papillae
- Banding can be palpated on the buccal mucosa, soft palate, and labial mucosa in advanced cases
- **Leukoplakia** of the surface mucosa often is discovered

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

91

Oral submucous fibrosis

- Patients will have chief complaints of trismus and oral burning with spicy foods
- In severe cases, the interincisal distance is less that 20 mm
- Lesions do not regress with habit cessation

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

92

Oral submucous fibrosis

- Mild cases are treated with intralesional steroids
- Moderate to severe cases may require surgical splitting or excision of the fibrous bands followed by lifelong physiotherapy; relapse is common
- Frequent follow-up is mandatory due to lifetime risk of malignant transformation

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

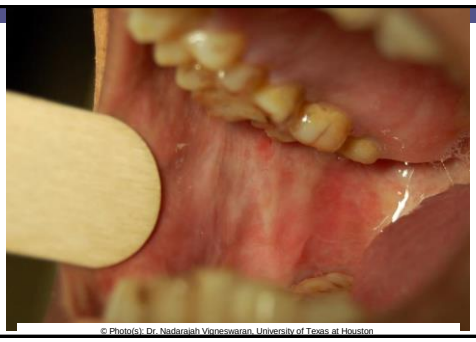
93

Oral submucous fibrosis

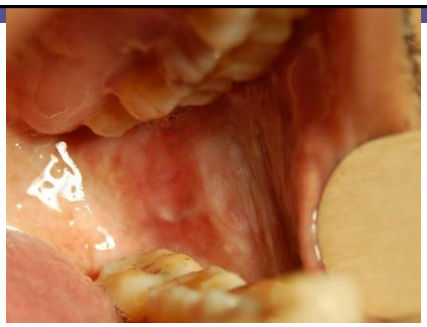
- The malignant transformation rate is up to 10%
- Patients usually are male and present at a younger age and at a lower stage
- Lesions tend to be thinner and less invasive
- Patients have an overall better survival rate

Speight PM, Khurram SA, Kujan O. Oral potentially malignant disorders: risk of progression to malignancy. *Oral Surg Oral Med Oral Pathol Oral Radiol*. 2018;125:612–627.

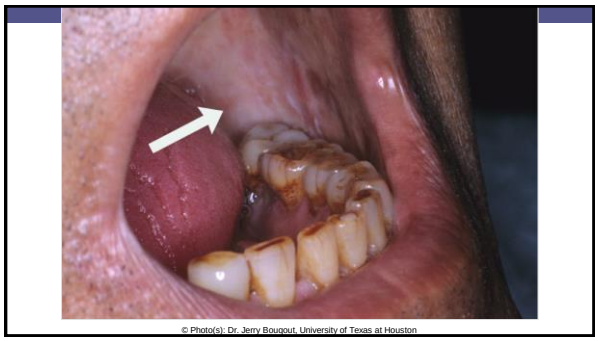
94



95

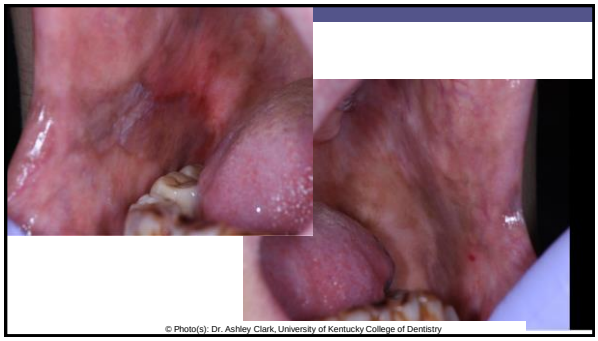


96

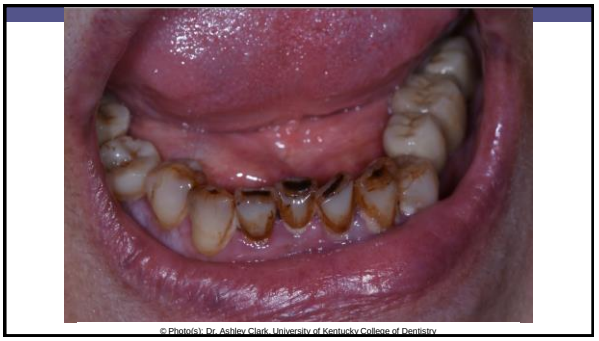


97

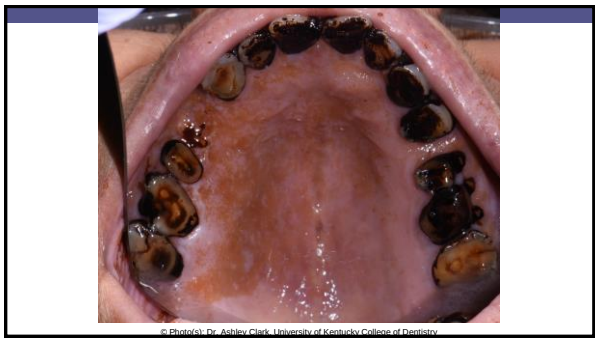
98



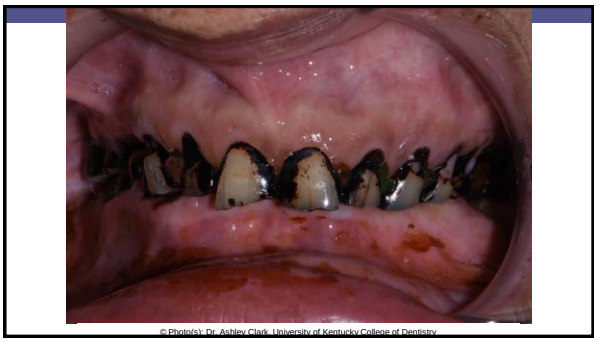
99



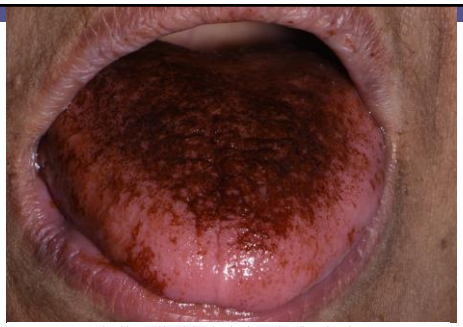
100



101



102



103

Current surgical protocols

- "Surgical intervention is indicated in patients who have established trismus with interincisal mouth opening of less than 25 mm.
- The primary aim of surgery is to improve mouth opening in an attempt to restore articulation, mastication, and oral hygiene."

Arakeri G, Kumar K, Boraks G, et. al. Current protocols in the management of oral submucous fibrosis: An update. *J Oral Pathol Med.* 2017;46:418–423.

104

Current surgical protocols

- Regardless of severity, all surgical interventions follow a standard protocol:
- 1. Preoperative clinical, radiological, and histopathological screening for malignancy
- 2. Incision of fibrous bands followed by adequate muscular release
- 3. Masticatory muscle myotomy and coronoidectomy if mouth opening is less than 35 mm after surgical release
- 4. Resurfacing of the surgical defect
- 5. Postoperative vigorous physiotherapy

Arakeri G, Kumar K, Boraks G, et. al. Current protocols in the management of oral submucous fibrosis: An update. *J Oral Pathol Med.* 2017;46:418–423.

105

ERYTHROPLAKIA

106

Erythroplakia

- Defined as a red patch that cannot be diagnosed as any other condition
- Causes are unknown, but they are assumed to be the same as leukoplakia/SCCa
- Rare; affects ~0.1% of Americans
- ~90% show severe dysplasia or worse on biopsy

Reichart PA, Philipsen HP. Oral erythroplakia—A review. *Oral Oncology.* 2005;41:551-561.
Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

107

Erythroplakia

- Occurs as an asymptomatic plaque/macule in older adults with no gender predilection
- Most common locations are floor of mouth, soft palate, and ventral tongue
- Some studies suggest that the most common place in females is the gingiva
  - Dr. Clark Remark: these lesions mimic may other forms of pathology so please do not ignore them!

Reichart PA, Philipsen HP. Oral erythroplakia—A review. *Oral Oncology.* 2005;41:551-561.
Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

108

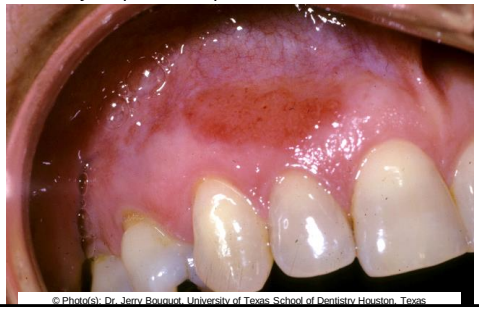
Erythroplakia

- Biopsy is mandatory for erythroplakia
- Treatment is guided by definitive diagnosis
- Recurrence and multifocal oral involvement is common; therefore, long-term follow up at least every 6 months is required

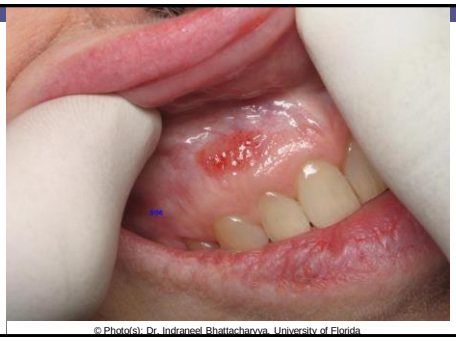
Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology. Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pg 355-390.

109

Erythroplakia – squamous cell carcinoma

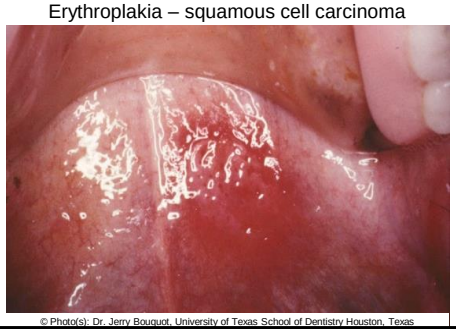


110



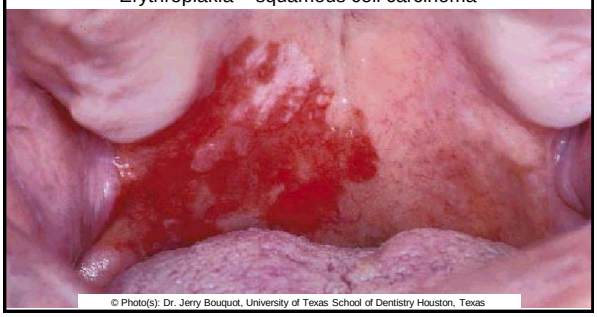
111

Erythroplakia – squamous cell carcinoma



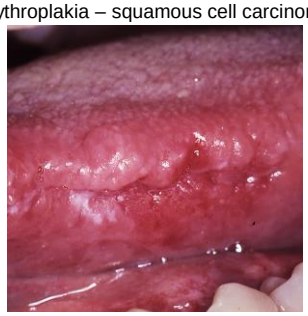
112

Erythroplakia – squamous cell carcinoma

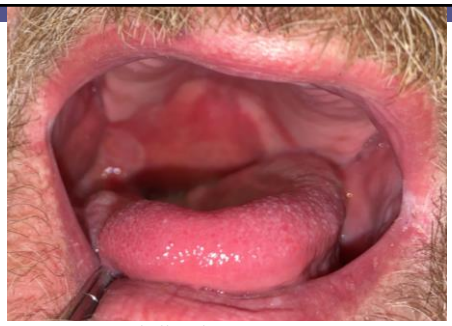


113

Erythroplakia – squamous cell carcinoma



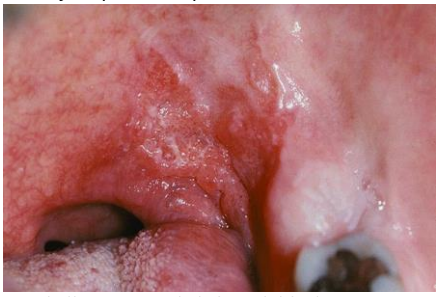
114



© Photo(s): Dr. John Freeman, Houston, Texas

115

Erythroplakia – squamous cell carcinoma



© Photo(s): Dr. Jerry Bouquot, University of Texas School of Dentistry Houston, Texas

116

TREATMENT

117

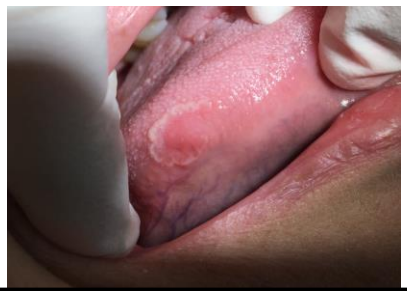
Treatment

- When to refer?
  - Old thought: wait two weeks to see if the lesion clears up
  - New thought: if you think the lesion may be a potentially malignant disorder, biopsy or refer for biopsy immediately
- With few exceptions, oral pathology labs will ship biopsy kits including formalin, paperwork, return mailing, etc. for free almost anywhere in the country
- All of these potentially malignant disorders REQUIRE biopsy

Lingen MW, Abt E, Agrawal N, et al. Evidence-based clinical practice guideline for the evaluation of potentially malignant disorders in the oral cavity. JADA. 2017;148(10):712-727.

118

Dr. Clark Exceptions



119

Treatment

- The biopsy will be evaluated by an oral pathologist
- The differential diagnosis is:
  - Hyperkeratosis and/or acanthosis
  - Mild dysplasia
  - Moderate dysplasia
  - Severe dysplasia
  - Carcinoma-in-situ
  - Verrucous carcinoma
  - SCCa

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

120

Treatment

- The benign entities:
  - Hyperkeratosis: Thickened keratin layer
  - Acanthosis: Thickened spinous layer
- **Though neither hyperkeratosis nor acanthosis has dysplasia, follow-up is important**

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

121

Treatment

- The "precancers":
  - Mild dysplasia – dysplastic alterations are 1/3 of the epithelium
  - Moderate dysplasia –dysplastic alterations are ½ of the epithelium
  - Severe dysplasia – dysplastic alterations are above ½ of the epithelium
  - Carcinoma *in situ* – dysplastic alterations are seen through the entire thickness of the epithelium, but no invasion has occurred

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

122

Treatment

- After the biopsy report comes back, you will have a diagnosis…now what?
- Hyperkeratosis/acanthosis: follow-up every 6 months and re-biopsy if the lesion changes
- Mild dysplasia: it depends on the patient and their habits, lesion size, and clinician preferences
  - **I recommend tissue destruction**
- Leukoplakia with moderate epithelial dysplasia or worse warrants complete destruction of tissue

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

123

Treatment

- Long-term follow-up at least every 6 months is important because recurrences are frequent
- Additional leukoplakias or erythroplakias may develop
- Recurrences should be re-biopsied to establish diagnosis
- It is important to encourage the patient to discontinue risky behaviors such as smoking cigarettes and drinking alcohol

Reichart PA, Philipsen HP. Oral erythroplakia – A review. *Oral Oncology.* 2005;41:551-561.

Meharma HM, Rattay T, Smith J, et al. Treatment and Follow-Up of Oral Dysplasia – A Systematic Review and Meta-Analysis. *Head & Neck.* 2009;31(12):1600-1609.

124

Treatment

- 12% of leukoplakias become SCCa, usually within 2-4 years
- Thin leukoplakia seldom becomes malignant without clinical change
- The more severe the dysplasia at initial biopsy, the greater the risk for malignant transformation

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

Meharma HM, Rattay T, Smith J, et al. Treatment and Follow-Up of Oral Dysplasia – A Systematic Review and Meta-Analysis. *Head & Neck.* 2009;31(12):1600-1609.

Speight PM, Khurram SA, Kujan O. Oral potentially malignant disorders: risk of progression to malignancy. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2018;125:612-627.

125

Treatment

- Malignant transformation potential, in descending order:
  - Proliferative verrucous leukoplakia
  - Nicotine stomatitis in people who reverse smoke
  - Erythroplakia
  - Oral submucous fibrosis
  - Erythroleukoplakia
  - Verruciform (granular) leukoplakia
  - Actinic cheilosis
  - Smooth, thick leukoplakia
  - Smokeless tobacco keratosis
  - Lichen planus
  - Smooth, thin leukoplakia

Neville B, Damm D, Allen C, et al. Oral and Maxillofacial Pathology: Fourth edition. Elsevier, Inc.: St. Louis, Missouri. Pp 355-390.

126

Treatment

- Features associated with an increased risk for malignant transformation:
  - Size > 2 cm
  - Nonhomogenous texture
  - Red or speckled color
  - Tongue or floor of mouth location
  - Severe dysplasia on biopsy
  - Female sex
  - Patient > 50 years old
  - Patient has high-risk HPV
  - Patient does **not** smoke*

Speight PM, Khurram SA, Kujan O. Oral potentially malignant disorders: risk of progression to malignancy. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2018;125:612–627.

127

Treatment

- Factors that <u>decrease</u> the risk for malignant transformation:
  - Surgical excision (decreases risk by half)

Mehanna HM, Rattay T, Smith J, et al. Treatment and Follow-Up of Oral Dysplasia – A Systematic Review and Meta-Analysis. *Head & Neck.* 2009;31(12):1600-1609.

128

Treatment

- In a study of ~5,000 spanning 8 years:
  - Leukoplakia was associated with a 40.8-fold increased risk of oral cancer
  - Only a minority of oral cancers (<5%) were preceded by a documented clinical diagnosis of leukoplakia
  - We aren't doing a good job screening…or patients aren't doing a good job visiting the dentist

Chaturvedi AK, Udaltsova N, Engels EA, et al. Oral Leukoplakia and Risk of Progression to Oral Cancer: A Population-Based Cohort Study. JNCI J Natl Cancer Inst 2020;112(10):djz258.

129

Potentially malignant disorders

- Takeaways:
  - Leukoplakia must be biopsied, no "watching" it
  - Should the patient have mild dysplasia or worse, the tissue must be destroyed
  - Surgical excision decreases the risk of malignant transformation but does not eliminate it
    - Therefore, long-term follow-up is required; the literature suggests a minimum of 20 years
    - Hyperkeratosis should be re-biopsied if the lesion changes
    - Everything else should be re-biopsied if it recurs

Woo S-B, Cashman EC, and Lerman MA. Human papillomavirus-associated oral intraepithelial neoplasia. *Modern Pathology.* 2013;26:1288–1297.

Mehanna HM, Rattay T, Smith J, et al. Treatment and Follow-Up of Oral Dysplasia – A Systematic Review and Meta-Analysis. *Head & Neck.* 2009;31(12):1600-1609.

130

CONCLUSIONS & QUESTIONS

AshleyClarkDDS@gmail.com

131