Head and Neck: Biopsy Difficulties With Squamous Lesions

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Today’s “Leaps of Faith”

- There is no such thing as “mild dysplasia”
- Reactive squamous lesion/hyperplasia versus “well-differentiated SCC”
- High-grade dysplasia (moderate/severe/CIS) vs. “moderately differentiated SCC” (microinvasion)
- Oropharynx lesions are NEVER in-situ
- Do not call something “hyperplasia” on a biopsy.
Lateral tongue biopsy, 64 yo male
Diagnosis?

a. Reactive/hyperplastic squamous mucosa.

b. Mild squamous dysplasia, at least.

c. Severe squamous dysplasia/carcinoma in-situ.

d. Squamous cell carcinoma.

e. Cannot make a diagnosis.
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“Atypical Squamoproliferative lesion”
Resection of tongue: SCC, moderately differentiated
“When I look at a malignant tumor, probably a carcinoma, and I have trouble perceiving is a SCC vs something else... , then is a poorly differentiated SCC.

If I look at a squamous proliferation that is so well differentiated that I am having trouble deciding whether is malignant or not, but after struggling, I decide is malignant, then is well-differentiated SCC. Everything else is moderately-differentiated SCC”.

Edwin (Ed) N. Beckman, MD
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3.0 cm tumour subsequently resected around maxillary gingiva
Well-differentiated squamous cell carcinoma
Verrucous Carcinoma

• Clinical
  – More common in elderly
  – Most common in oral cavity and larynx
  – Related to tobacco and poor oral hygiene
Verrucous Carcinoma

- Histology
  - Bulbous cauliflower like surface
  - Blunted club-shaped rete
  - Inflammatory infiltrates
  - Lack of cytologic atypia
Verrucous Carcinoma
On biopsy this is not overtly dysplastic
Verrucous Carcinoma & WD Squamous Cell Carcinoma

• Treatment
  – Excision with clear margins
  – Radiation (if difficult to treat location)

• Prognosis
  – Good
  – Extremely low risk of metastasis
    (unlike moderately differentiated SCC)
Papillary Squamous Cell Carcinoma
Tongue base - papillary squamous cell carcinoma
Tonsil bx: 52 y.o. male with neck SCC
Diagnosis?

a. Reactive/hyperplastic squamous mucosa.

b. Mild squamous dysplasia, at least.

c. Severe squamous dysplasia/carcinoma in-situ, at least.

d. Non-keratinizing squamous cell carcinoma.

e. Cannot make a diagnosis.
Diagnosis?

a. Reactive/hyperplastic squamous mucosa.

b. Mild squamous dysplasia, at least.

c. Severe squamous dysplasia/carcinoma in-situ, at least.

d. Non-keratinizing squamous cell carcinoma.

e. Cannot make a diagnosis.
Posterior pharyngeal wall bx: 67 y.o.
Oropharynx Non-Keratinizing Squamous Cell Carcinoma

- The vast majority of HPV driven SCCs present with the lymph node metastasis first.

- There is no dysplasia-carcinoma sequence in the oropharynx where most HPV driven SCCs arise.

- Carcinomas begin in the crypts of the tonsil and base of tongue which have incomplete basement membranes.

- The crypts are in direct apposition to lymphatic channels.
Significance of Invasion

- Tumour that has breached the basement membrane
  - Access to lymphatics
  - Potential to metastasize
  - Oropharynx cancers have immediate access to lymphatics and potential to metastasize ie. no CIS
Tumor thickness or tumor depth?

*Tumor Thickness (pT1 and pT2 tumors) (Note B)
*Tumor thickness: ____ mm
*Intact surface mucosa: _____; or ulcerated surface: ____

Exophytic        Ulcerated        Endophytic

◆ Risk of lymph node metastasis: 8% in tumor with 3 mm thickness.
Identifying Superficial Invasion (in theory)

- Deep aberrant keratinization
  - Misplaced keratin pearls
  - Dyskeratosis

- Breach of basement membrane
  - Ragged borders
  - Single dropping off of cells
  - Desmoplasia/reaction around tumour cells
Superficial Invasion: Definition

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<td>Miller</td>
<td>12-50 cells present just below the basement membrane</td>
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<td>Friedman</td>
<td>Scattered tongues or discrete foci of invasion through the basement membrane</td>
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<td>Padovan</td>
<td>2 mm or less of invasion</td>
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<td>Crissman</td>
<td>1-2 mm of invasion (no angiolympathic invasion)</td>
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<tr>
<td>Barnes</td>
<td>0.5 mm of invasion, measured from basement membrane (no angiolympathic invasion)</td>
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Superficial invasion – “drop off carcinoma”
Carcinoma in-situ, with microinvasion
Benign Mimickers

- Squamous papilloma
- Morsicatio buccarum and linguarum
- Infectious hyperplasia eg. candidiasis
- “Pseudoepitheliomatous hyperplasia” eg. granular cell tumour
  - Reactive hyperplasias
- Necrotizing sialometaplasia
- Verruciform xanthoma
Squamous papilloma
Morsicatio Linguarum
Hyperplastic Candidiasis
Candida
Candida in H&N

- NOT synonymous with reactive or benign.
- NOT necessarily the cause of the lesion so avoid making it sound like a diagnosis.
- Grows well on ulcerated and keratotic surfaces eg. radiated mucosa.
- Ideally you should have the whole lesion to call it “hyperplasia”
5 mm Anterior dorsum of tongue: previous SCC with ORN 7 years ago
Isolated midline dorsal tongue lesions are almost never malignant
Pseudoepitheliomatous hyperplasia
Bx: mandibular gingiva, ? recurrence – history of SCC 7 years ago
“Atypical squamoproliferative lesion”
Osteoradionecrosis with reactive squamous hyperplasia
Retromolar trigone biopsy
Connection to duct system - “necrotizing sialometaplasia”
Verruciform Xanthoma
Today’s “Leaps of Faith” and Take home messages

- Resist “mild dysplasia”
- DDX: Reactive/hyperplasia vs “WD SCC”
- High-grade dysplasia vs MD SCC (microinvasion)
- Oropharynx is NEVER an in-situ lesion
- Do not call something “hyperplasia” on an incomplete biopsy
- Midline dorsal tongue lesions are usually benign
- Candida is NOT a diagnosis!!!