Updates in Oral Cavity Cancer

Luke Buchmann, MD FACS
University of Utah
Huntsman Cancer Institute
Salt Lake City, UT

Disclosures

- Nothing to disclose

Goal

To improve communication between the pathologist and providers of care for head and neck cancer patients

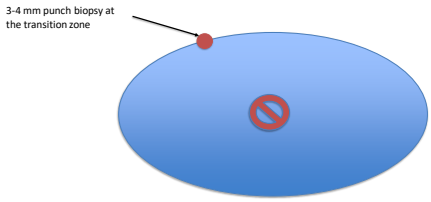
Learning Objectives

- To outlaw excisional biopsies in oral cavity cancer
- Discuss role of SNLBX in oral cavity cancer
- Understand the importance of depth of invasion (DOI) in new staging system
- Understand the importance of extranodal extension (ENE) in the new staging system
- Consider surgeon orientation of oral cavity specimens
- Develop a comprehensive pathologic report including staging

Excisional Biopsies

- Unnecessary to arrive at a diagnosis
- Frequently have positive margins
- Frozen section analysis frequently not done
- Definitive surgery generally larger than necessary
- Larger surgery translates to need for reconstruction
- Subjects patient to unnecessary general anesthesia

Proper Biopsy for DX

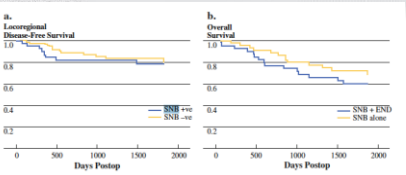


Management of the NO Neck

- Sentinel lymph node biopsy
- Elective neck dissection

SNLB

- Two prospective studies
- Civantos found a negative predictive value of 96%
- Alkureishi concluded that SNLBX was at least equivalent to ELND

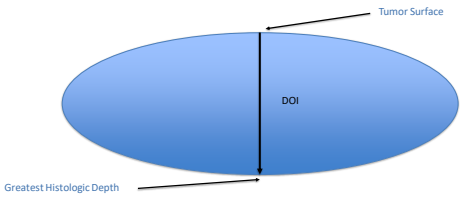


Alkureishi et al. Sentinel Node Biopsy in Head and Neck Squamous Cell Cancer: 5-Year Follow-Up of a European Multicenter Trial. Ann Surg Oncol (2010) 17:2459–2464

2018 Updates to Oral Cavity Staging

- Depth of invasion (DOI) now is a significant part of T stage
- ENE is a significant factor in oral cavity tumor N stage

Measurement of DOI



New 2018 T Stage

- T1: Tumor ≤2 cm, ≤5 mm depth of invasion (DOI)
- T2: Tumor ≤2 cm, DOI >5 mm and ≤10 mm ***or*** tumor >2 cm but ≤4 cm, and ≤10 mm DOI
- T3: Tumor >4 cm ***or*** any tumor with **DOI >10 mm** but ≤20 mm
- T4a: Moderately advanced or very advanced local disease

  A: Moderately advanced local disease
  Tumor invades adjacent structures only (e.g., through cortical bone of the mandible or maxilla, or involves the maxillary sinus or skin of the face)* **or** extensive tumor with bilateral tongue involvement and/or **DOI > 20 mm**.

New 2018 cN Stage

- N1: Metastasis in a single ipsilateral lymph node, 3 cm or smaller in greatest dimension **ENE(–)**
- N2: Metastasis in a single ipsilateral node larger than 3 cm but not larger than 6 cm in greatest dimension and **ENE(–)** ; or metastases in multiple ipsilateral lymph nodes, none larger than 6 cm in greatest dimension and **ENE(–)** ; or in bilateral or contralateral lymph nodes, none larger than 6 cm in greatest dimension, and **ENE(–)**
- N3: Metastasis in a lymph node larger than 6 cm in greatest dimension and ENE(–); or metastasis in any node(s) and clinically overt **ENE(+)**
  - N3a Metastasis in a lymph node larger than 6 cm in greatest dimension and **ENE(–)**
  - N3b Metastasis in any node(s) and clinically overt **ENE(+)**

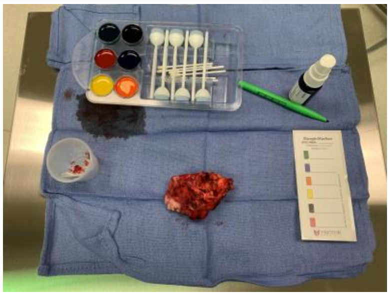
pN Stage

- N1- Single ipsilateral lymph node 3 cm or < ENE (-)
- N2
  - a- 3 cm or < and ENE (+) or > 3 cm and < 6 cm ENE (-)
  - b- Multiple ipsilateral lymph nodes none > 6 cm ENE (-)
  - c- Bilateral or contralateral lymph nodes none > 6 cm ENE (-)
- N3
  - a- > 6cm ENE (-)
  - b- > 3 cm and ENE (+) ; multiple ipsilateral, bilateral any with ENE (+) or a single contralateral node any size ENE (+)

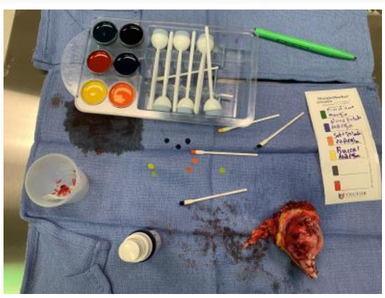
Tips and Tricks

- Encourage surgeons to ink their own specimens
- Report pathologic results in a comprehensive synopsis that includes all relevant pathologic information

UNIVERSITY OF UTAH HEALTH CARE



UNIVERSITY OF UTAH HEALTH CARE



UNIVERSITY OF UTAH HEALTH CARE

Includes pTNM requirements from the 8th Edition, AJCC Staging Manual
Protocol Posting Date: June 2017

Procedure: Right hemiglossectomy
Tumor Site: Lateral border of tongue
Tumor Laterality: Right
Tumor Focality: Unifocal
Tumor Size
Greatest dimension (centimeters): 4.7 x 3.7 x 2.0 cm
Tumor Depth of Invasion (DOI)(millimeters): 20 mm
Histologic Type: Squamous cell carcinoma, conventional
Histologic Grade (required for squamous cell carcinoma only): Moderately differentiated
Specimen Margins:
Uninvolved by invasive carcinoma and dysplasia. Invasive carcinoma measures 2 mm from the deep margin (in the posterior aspect of the resection) and more than 5 mm from all remaining margins on the main resection (part 3).
Tumor Bed (Separately Submitted) Margin Orientation (required for squamous cell carcinoma only): Oriented to true margin surface
Tumor Bed (Separately Submitted) Margins (required for squamous cell carcinoma only): All extended margins are negative for carcinoma.
Lymphovascular Invasion: Present (focal)
Perineural Invasion: Present (focal in a 0.5 mm nerve)
+Worst Pattern of Invasion (WPOI): Not identified
Regional Lymph Nodes
Lymph Node Examination (required only if lymph nodes present in specimen)
Number of Lymph Nodes Involved: 5
Number of Lymph Nodes Examined: 27
Laterality of Lymph Nodes Involved: Right (ipsilateral)
Size of Largest Metastatic Deposit (centimeters): 1.6 cm
Extranodal Extension (ENE): Identified, less than 2 mm
Pathologic Stage Classification (pTNM, AJCC 8th Edition)
TNM Descriptors (required only if applicable):
Primary Tumor (pT): pT4a
Regional Lymph Nodes (pN): pN3b
Distant Metastasis (pM)(required only if confirmed pathologically in this case): Not applicable

Conclusions

- Excisional biopsies for oral cavity cancer are not warranted
- DOI is the most important prognostic factor in T stage
- ENE is the most important prognostic factor in N stage
- Surgeon inking of the specimen results in more accurate margin analysis
- A comprehensive synopsis of pathologic results facilitates the use of pathologic staging for treatment decisions

Updates in Oropharyngeal Cancer

Luke Buchmann, MD FACS
Associate Professor of Surgery
University of Utah
Huntsman Cancer Institute
Salt Lake City, UT

Disclosures

- Nothing to disclose

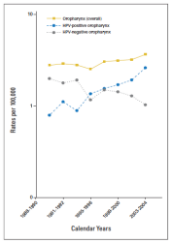
Goal

To improve communication between the pathologist and providers of care for head and neck cancer patients

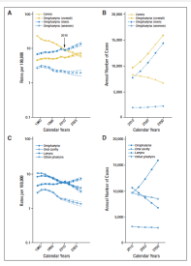
Learning Objectives

- Understand the epidemiology of HPV related oropharyngeal cancer
- Understand that HPV status must be known
- Discuss the importance of HPV status in oropharyngeal cancer staging
- Recognize the drastic difference in overall stage in HPV (+) tumors
- Discuss different treatment options for oropharyngeal cancer
- Understand the concept of de-escalation therapy

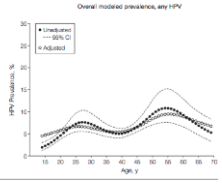
Epidemiology HPV Related OP Cancer



Chaturvedi, A et al. Human papillomavirus and rising oropharyngeal cancer incidence in the United States. J Clin Oncol 29:4294-4301.



Chaturvedi, A et al. Human papillomavirus and rising oropharyngeal cancer incidence in the United States. J Clin Oncol 29:4294-4301.



Gillison, M et al. Prevalence of oral HPV infection in the United States, 2009-2010. JAMA, 2012;307(7):693-703.

Changes to the Staging System

- Not acceptable to not know the HPV status
- Separate staging systems for HPV (+) and HPV (-)
- Separate staging criteria for clinical and pathologic
- ENE factors heavily in HPV (-) N stage
- ENE is not considered in HPV (+)
- No N3 in HPV positive N stage
- T stage essentially unchanged for either HPV (+) and (-)

HPV (–) cN Stage

- N1- Single ipsilateral lymph node 3 cm or smaller ENE (-)
- N2
  - a- Single ipsilateral lymph node > 3 cm and < 6 cm ENE (-)
  - b- Multiple ipsilateral lymph nodes < 6 cm ENE (-)
  - c- Bilateral or contralateral lymph nodes ENE (-)
- N3
  - a- > 6 cm ENE(-)
  - b- Any node with clinically overt ENE (+)

HPV (-) pN Stage

- N1- Single ipsilateral lymph node 3 cm or < ENE (-)
- N2
  - a- 3 cm or < and ENE (+) or > 3 cm and < 6 cm ENE (-)
  - b- Multiple ipsilateral lymph nodes none > 6 cm ENE (-)
  - c- Bilateral or contralateral lymph nodes none > 6 cm ENE (-)
- N3
  - a- > 6cm ENE (-)
  - b- > 3 cm and ENE (+) ; multiple ipsilateral, bilateral any with ENE (+) or a single contralateral node any size ENE (+)

HPV (+) cN Stage

- N1 – one or more ipsilateral lymph nodes < 6 cm
- N2 – contralateral or bilateral lymph nodes < 6 cm
- N3 – Lymph node(s) > 6 cm

HPV (+) pN Stage

- N1 – Metastasis in 4 or fewer lymph nodes
- N2 – Metastasis in > 4 lymph nodes
- No N3

Impact to Overall Stage HPV (+)

Pathological			
Stage I	T0, T1, T2	N0, N1	M0
Stage II	T0, T1, T2	N2	M0
	T3, T4	N0, N1	M0
Stage III	T3, T4	N2	M0
Stage IV	Any T	Any N	M1

Principals of Treatment

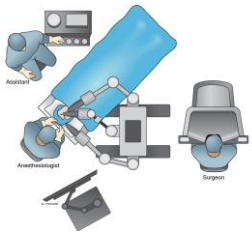
- Chemoradiotherapy
- Transoral Robotic Surgery (TORS)
- Treatments are equivalent
- Concept of de-escalation therapy for HPV (+)

UNIVERSITY OF UTAH HEALTH CARE

TORS

- Smaller primary tumors
- Goal is de-escalation of adjuvant XRT
- Implications for the pathologist
  - Acceptance of narrow margins

UNIVERSITY OF UTAH HEALTH CARE



UNIVERSITY OF UTAH HEALTH CARE

De-escalation Therapy

- Current area of investigation
- The question is whether HPV (+) tumors need standard doses of XRT
- Settings are in the definitive and adjuvant setting
- Ongoing clinical trials attempting to answer these questions

Conclusions

- Patients with HPV (+) tumors tend to be male and have a bimodal age distribution
- HPV status in oropharyngeal tumors must be known
- Due to improved prognosis HPV (+) tumors have their own staging system
- ENE status factors heavily in HPV (-) tumors
- Current treatment modalities include chemoXRT and TORS
- De-escalation of therapy is an ongoing area of investigation in HPV (+) oropharyngeal cancer