Pharynx

2015-2016 NAACCR Webinar Series
November, 2015

Q&A

Please submit all questions concerning webinar content through the Q&A panel.

Reminder:

• If you have participants watching this webinar at your site, please collect their names and emails.
• We will be distributing a Q&A document in about one week. This document will fully answer questions asked during the webinar and will contain any corrections that we may discover after the webinar.
Fabulous Prizes

Agenda

- Anatomy
- EPI Moment
- SEER Summary Stage/AJCC Stage
- Treatment
Anatomy of the Pharynx

- Nasopharynx
- Oropharynx
- Hypopharynx
Anatomy of the Pharynx

Primary Sites of the Nasopharynx

C11.0 Superior Wall of Nasopharynx

C11.1 Posterior Wall
Pharyngeal Tonsils

C11.2 Lateral Wall
Fossae of Rosenmuller

C11.3 Anterior Wall
Pharyngeal fornix
Choana
Posterior wall of nasal septum

C11.8 Overlapping

C11.9 Nasopharynx, NOS
**Anatomy of the Pharynx**

- Nasopharynx
- Oropharynx
- Hypopharynx

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**Primary Sites of Oropharynx**

C10.0 Vallecula

C10.1 Anterior Surface of epiglottis
  Lingual Surface of epiglottis

C10.2 Lateral Wall of oropharynx
Anatomy of the Pharynx

Primary Sites of Oropharynx
C10.3 Posterior wall of oropharynx
C10.4 Branchial cleft
C10.8 Overlapping lesions of oropharynx
C10.9 Oropharynx, NOS

Anatomy of the Pharynx

- Nasopharynx
- Oropharynx
- Hypopharynx
Anatomy of the Pharynx

Primary Sites of Hypopharynx
C13.0 Postcricoid Region
   Cricopharynx
   Cricoid
C13.1 Hypopharyngeal aspect of aryepiglottic fold
   Arytenoid fold
   Arytenoid
C13.2 Posterior wall of hypopharynx

Primary Sites of Hypopharynx
C13.8 Overlapping lesion of hypopharynx
C13.9 Hypopharynx, NOS
   Hypopharyngeal Wall
   Laryngopharynx
**Anatomy of Pharynx**

- C14.0 Pharynx, NOS
  - Pharyngeal wall, NOS
  - Wall of pharynx, NOS
  - Lateral wall of pharynx, NOS
  - Posterior wall of pharynx, NOS
  - Retropharynx
  - Throat
- C14.2 Waldeyer’s Ring
- C14.8 Overlapping lesion of lip, oral cavity and pharynx

**Pop Quiz**

True or False?

The Branchial Cleft is considered an anatomical structure within the Oropharynx.

False
Pop Quiz

Which are part of the Posterior wall of the Nasopharynx?

a) Tonsillar pillars
b) Tonsillar fossae
c) Tonsils of the oropharynx
d) Pharyngeal Tonsils

Head and Neck Lymph Nodes
Important Landmarks

- Mandible
- Hyoid Bone
- Cricoid Cartilage
- Clavicle
- Internal Jugular Vein

Lymph Node Levels in Head and Neck
Lymph Node Levels in Head and Neck

Level I
- Ia: Submental Nodes
  - Anterior
  - Middle
  - Posterior
- Ib: Submandibular Nodes
  - Preglandular
  - Postglandular
  - Prevascular
  - Postvascular

Level II – Upper Jugular

Level III – Middle Jugular Group

Level IV – Lower Jugular Group

Level V – Posterior Triangle Group
- Va: Spinal Accessory nodes
- Vb: Supraclavicular nodes
Lymph Node Levels in Head and Neck

Level VI – Anterior Compartment Group
- Pretracheal
- Paratracheal
- Precricoid (Delphian)
- Perithyroidal

Level VII – Superior Mediastinal Group
- Pretracheal
- Paratracheal
- Esophageal groove

Other Lymph Node Groups

- Facial
- Parotid
- Mastoid
- Occipital
- Preauricular
- Retropharyngeal
Lymph Node Chains of Pharynx

- Internal Jugular
  - Jugulodigastic (II)
  - Jugulo-omohyoid (III)
  - Upper deep cervical
  - Lower deep cervical
- Submandibular (Ib)
- Submental (Ia)
- Retropharyngeal
- Cervical, NOS

Pop Quiz

- The Posterior Triangle Group consists of which nodes?
  a) Pretracheal
  b) Submandibular
  c) Spinal Accessory
  d) Delphain
MPH Head and Neck Cancers

Coding Primary Site – Priority Order

1. Tumor Board
   a. Specialty
   b. General

2. Staging Physician’s site assignment
   a. AJCC staging form
   b. TNM statement in Med Record
Cancer Data: Pharynx 11/5/2015

3. Total (complete) resection of primary tumor
   a. Surgeon’s statement from op report
   b. Final diagnosis from path report

4. No resection (biopsy only)
   a. Endoscopy (physical exam with scope)
   b. Radiation oncologist
   c. Diagnosing physician
   d. Primary care physician
   e. Other physician
   f. Radiologist impression from diagnostic imaging
   g. Physician statement based on physical exam (clinical impression)
Coding Primary Site – Priority Order

When point of origin cannot be determined
- C02.8 Overlapping lesion of tongue
- C08.8 Overlapping lesion of major salivary glands
- C14.8 Overlapping lesion of lip, oral cavity, and pharynx

Pop Quiz

CT scan shows tumor covering the soft palate and pharyngeal tonsils. Patient refuses all other workup and treatment. What is the primary site code?
- a) C05.1 – Soft palate, NOS
- b) C14.8 - Overlapping lesion of lip, oral cavity, and pharynx
- c) C11.1 – Posterior wall of nasopharynx
- d) C80.9 – Unknown Primary Site
MP/H Exercise 1

- A patient presents with a history of stage I squamous cell carcinoma of the lingual surface of the epiglottis diagnosed and treated three years ago.
- The patient now presents with a non-keratinizing squamous cell carcinoma on the posterior wall of the oropharynx.

- Is this a new primary?
  1. C10.1 and 8070/3
  2. C10.3 and 8072/3

Per rule M10 this is one primary

MP/H Exercise 2

- A patient presents with a history of stage I squamous cell carcinoma of the lingual surface of the epiglottis diagnosed and treated three years ago.
- The patient now presents with an enlarged jugulodigastric lymph node. A biopsy indicates the lymph node is positive for malignancy. The physician indicates this is most likely metastatic from the oropharyngeal primary diagnosed three year ago.

- Is this a new primary?
And now a brief pause for...
An Epi Moment
(insert favorite theme song here)

Epidemiology of Pharynx Cancer

- Rare cancer
- Analyzed with Oral or Head & Neck grouping
  - Tobacco-associated, HPV-associated
  - Rarely alone
- Incidence: 2.0 per 100,000 2008-2012
  - 3.2 (males) 0.9 (females)
  - Males: 4.7 black; 4.6 Asian/PI; 2.9 white; 2.6 AI/AN
- Mortality: 1.0 per 100,000 2008-2012
  - 1.6 (males) 0.5 (females)
  - 2.8 black males; 1.4 white males
Pharynx Cancer Trends

Incidence decreasing (1.4% APC); Mortality decreasing (1.2% APC)

Epidemiology of Pharynx Cancer

- Predominately squamous
  - % adenocarcinoma is increasing
- Three anatomic subsites
  - Nasopharynx: 1.0 black males
  - Oropharynx: 1.2 black males
  - Hypopharynx: 1.9 black males
  - "Other": 0.5 black males
- Asia & Africa have high rates
Risk Factors for Pharynx Cancer

- Alcohol & Tobacco (Squamous)
- HPV (Squamous)
- GERD incidence (Adenocarcinoma)
- Occupational exposures (suspected)
- Protective: Diet high in vegetables & fruits
- Geographic
  - Betel quid—stimulant chew in Asia
  - Herbs & salt (nasopharynx) in Asia
  - Maté—stimulant beverage S. America

Pharynx Cancer Prognosis

- 5-year relative survival (reported with oral cancers) 63%
- Prognosis based on stage
  - Lymph node involvement common due to lymph drainage at base of tongue
  - Often progressed to late by the time symptomatic
  - 5 year survival
    - 83% for localized dx (13% of cases)
    - 38% for distant (48% of cases)
- HPV-status associated with improved prognosis
- 2nd primaries are common
- Smoking cessation is associated with improved survival and lower risk of 2nd primary
Nasopharynx

- Subsite with lowest rate
- Risk Factors
  - Epstein-Barr Virus (EBV)--Combined with Asian ancestry(diet)
  - Occupational exposure to formaldehyde (suspected)
- Symptoms
  - Nodes in neck, epistaxis &/or obstruction, hearing loss & issues, sore throat, headache, face pain/numbness, repeated ear infections, hoarseness
- Treatment—radiation, chemo, targeted therapy
- Prognosis
  - Tumor size, stage, lymph node involvement (neck)
  - Small tumors 80-90% 5 year survival
  - 50-70% 5 year survival without lymph involvement

Oropharynx

- Often reported with oral
- Risk Factors
  - Tobacco & Alcohol (heavy)
    - Betel quid, East Asians genetically metabolize alcohol differently
  - HPV—63%
- Symptoms
  - Pain, dysphagia, weight loss, neck mass
- Treatment—surgery, radiation, chemo, targeted therapy
- Prognosis—poorest of all subtypes (54% metastatic)
  - HPV status: + is good regardless of other factors i.e. nodal involvement
  - Smoking hx, stage, and nodal involvement
Hypopharynx

- Subsite with highest rate, often reported with larynx
- **Risk Factors**
  - Tobacco & alcohol
  - HPV
  - Plummer-Vinson or Paterson-Kelly syndrome—iron deficiency
  - GERD suspected risk factor (adenocarcinoma—both rising)
  - Asbestos
- **Symptoms**
  - Sore throat or ear pain; change in voice; dysphagia
- **Treatment**—surgery, radiation, chemo
- **Prognosis**
  - Stage, age, location, lymph node involvement

**CURRENT CINA Research**

**Ongoing**: State-level changes in the incidence of HPV-associated anal and oropharyngeal cancers in the US

**Publications**:

[http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3308956/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3308956/)

*Annual Report to the Nation on the Status of Cancer, 1975-2009, featuring the burden and trends in human papillomavirus(HPV)-associated cancers and HPV vaccination coverage levels.*  
[http://jnci.oxfordjournals.org/content/105/3/175.long](http://jnci.oxfordjournals.org/content/105/3/175.long)
Questions?

Quiz 1

SEER Summary Stage
Nasopharynx

- Localized
  - Confined to one subsite
    - Inferior wall (superior surface of the soft palate)
    - One lateral wall
    - Posterior superior wall
  - Involvement of two or more subsites
    - Lateral wall extending into the eustachian tubes
    - Posterior, inferior, or lateral walls

- Regional by direct extension
  - Bone including skull
  - Hard palate
  - Nasal Cavity
  - Oropharynx
  - …

- Regional lymph nodes
  - Cervical, NOS
  - Internal jugular
    - Deep cervical
    - Jugulodigastric.
  - Retropharyngeal
  - …
**Nasopharynx**

- Distant lymph nodes
  - Mediastinal
  - Supraclavicular
  - Supraclavicular fossa
  - ...

- Direct extension to
  - Brain
  - Cranial nerves
  - Soft tissues of the neck
  - ...

**Oropharynx-pg 54**

- **In situ**
- **Localized**
  - Confined to one subsite
    - Anterior wall
    - One lateral wall
    - Posterior wall
  - Involvement of two subsites
    - Anterior, lateral, or posterior
**Oropharynx**

- Regional by direct extension
  - Base of tongue
  - Buccal mucosa
  - Nasopharynx
  - Soft palate
  - Soft tissue of the neck
  - ...
- Regional lymph nodes
  - Cervical
  - Internal jugular
  - Mandibular
  - Retropharyngeal
  - ...

**Oropharynx**

- Distant Mets
  - Lymph Nodes
    - Mediastinal lymph
    - Supraclavicular
    - Other
  - Extension to:
    - Anterior 2/3 of tongue
    - Bone
    - Extrinsic muscles of the tongue
    - Hard palate
    - Mandible
    - Parotid gland
Hypopharynx

- In situ
- Localized
  - Confined to one of the following subsites
    - Confined to laryngopharynx (hypopharynx, nos)
    - Post cricoid area
    - Posterior pharyngeal wall
    - Pyriform sinus
  - Involves adjacent sites without fixation

Hypopharynx

- Regional by direct extension
  - Carotid artery
  - Cricoid cartilage
  - Esophagus
  - ...
- Regional lymph nodes
  - Cervical
  - Internal jugular
  - Mandibular
  - Paratracheal
  - ...
**Hypopharynx**

- Distant Lymph Nodes
  - Mediastinal
  - Supraclavicular
  - Other distant lymph nodes
- Extension to:
  - Base of tongue
  - Floor of mouth
  - Nasopharynx

**TNM Stage**

Pharynx
C01.9; C02.4; C05.1-2; C09.0-1,8-9; C10.0,2-4,8-9; C12.9; C13.0-2; C13.8-9

Pg 41 of your AJCC Staging Manual
Rules for Classification

- Clinical
  - Endoscopy
  - Palpation
  - Neurologic evaluation of cranial nerves
  - Imaging
    - Cross sectional
      - MRI
      - CT

Rules for Classification

- Path
  - Clinical information +
  - Surgically resected specimen including surgeons description of any gross unresected residual tumor.
  - Surgically removed lymph nodes.
    - Should include size, number, level of involvement, and presence of any extracapsular extension
Pharynx

• Primary Tumor
  • Nasopharynx
  • Oropharynx
  • Hypopharynx
• Regional Lymph Nodes
  • Nasopharynx
  • Oropharynx and Hypopharynx
• Distant Metastasis
  • Pharynx
• Stage/Prognostic Groups
  • Nasopharynx
  • Oropharynx and Hypopharynx

Primary Tumor (T)
Nasopharynx

- Things to look for...
  - Confined to the nasopharynx or nasal cavity
  - Parapharyngeal extension
  - Invasion of bony structures and/or paranasal sinuses
  - Intracranial extension
  - Involvement of cranial nerves
  - Orbit
  - Infratemporal fossa

Oropharynx

- Things to look for...
  - Tumor Size
    - Less than or equal to 2cm
    - 2-4cm
    - Greater than 4cm
  - Extension to the lingual space of the epiglottis
  - Moderately advanced disease
  - Very advanced disease
**Hypopharynx**

- Things to look for…
  - How many subsites are involved?
    - Pyriform sinus
    - Postcricoid area
    - Lateral and posterior pharyngeal wall
- Are any adjacent sites involved?
- Tumor Size
- Moderately advanced
- Very advanced

[Image: https://commons.wikimedia.org/wiki/File:Gray955.png#/media/File:Gray955.png]

**Pop Quiz**

- Cross sectional imaging shows a 3cm tumor located in the post-cricoid region of the hypopharynx. The tumor extends into the esophagus and thyroid cartilage.
- What T value would we assign?

  cT4a
Regional Lymph Nodes (N)

Nasopharynx

- What to look for...
  - Retropharyngeal Nodes
    - Rouviere’s node
  - Laterality
  - Size of the metastatic lymph node
    - More or less than 6cm
  - Extension beyond the supraclavicular fossa
**Oropharynx and Hypopharynx**

- Things to look for…
  - Jugulodigastric
  - Superior/mid deep cervical
  - Number of nodes involved
  - Size of the metastatic lymph node
  - Ipsilateral vs bilateral

**Distant Metastasis**

- Most common site is lung
- Liver
- Bone
- Distant Lymph Nodes
SSF’s

- SSF 1-Size of Lymph Nodes
- SSF 3-Levels I-III, Lymph Nodes for Head and Neck
- SSF 4-Levels IV-V and Retropharyngeal Lymph Nodes for Head and Neck
- SSF 5-Levels VI-VII and Facial Lymph Nodes for Head and Neck
- SSF 6-Parapharyngeal, Parotid, and Suboccipital/Retroauricular Lymph Nodes for Head and Neck
- SSF 9-Extracapsular Extension Pathologically, Lymph Nodes for Head and Neck
- SSF 10-Human Papilloma Virus (HPV) Status

Staging Example

- Patient presents with pain when swallowing. A fiber optic exam showed a 3.5cm lesion confined to the posterior hypopharyngeal wall. Cross sectional MRI confirmed the tumor was confined to the pharyngeal wall. Imaging also showed a single 3cm upper jugulodigastric lymph node highly suspicious for malignancy. No additional malignancy identified.
Example

- The patient was treated with transoral resection of the tumor and a selective neck dissection (levels 1-3). This was followed by IMRT to the neck and weekly cisplatin.

  Path Report:
  - Primary tumor: 3.0x3.4x3.2cm squamous cell carcinoma with negative margins.
  - Lymph nodes: Total of 21 lymph nodes removed
    - Level I- 1 of 7 lymph nodes positive lymph nodes
      - Size of metastasis within the lymph node: 3.2cm
      - Extracapsular lymph node metastasis present: Yes
    - Level II-0 of 8 of positive lymph nodes
    - Level III- 0 of 6 positive lymph nodes

Staging Example

- Summary Stage 3 Regional to lymph nodes
- Clinical Stage cT2 cN1 cM0 Stage III
- Pathologic Stage pT2 pN2a pM Stage IVA

| SSF 1 | 032 |
| SSF 3 | 100 |
| SSF 4 | 000 |
| SSF 5 | 000 |
| SSF 6 | 000 |
| SSF 9 | 030 |
| SSF 10| 999 |
Questions?

Treatment
Treatment

- Unresectable
  - When a tumor cannot be completely removed by surgery
  - Surgery will not achieve localized control of disease

- Inoperable
  - There are comorbid conditions that limit their ability to withstand surgery

Treatment - Surgery

- Salvage Surgery
  - Done after tumor does not respond to standard treatment or patient cannot tolerate other available therapies
Treatment - Surgery

- 20 Local tumor excision
  - 27 Excisional biopsy
- 30 Pharyngectomy, NOS
  - 31 Limited/partial pharyngectomy; tonsillectomy, bilateral tonsillectomy
  - 32 Total pharyngectomy

Treatment - Surgery

- 40 Pharyngectomy WITH laryngectomy or removal of contiguous bone tissue, NOS (does NOT include total mandibular resection)
  - 41 WITH Laryngectomy (laryngopharyngectomy)
  - 42 WITH bone
  - 43 WITH both 41 and 42
Treatment - Surgery

- 50 Radical pharyngectomy (includes total mandibular resection), NOS
  - 51 WITHOUT laryngectomy
  - 52 WITH laryngectomy

Treatment - Radiation

- Radiation Therapy is used in treating head and neck cancers
  - External Beam Radiation
    - IMRT (31)
    - 3-D Conformal (32)
Treatment - Chemotherapy

• Most Commonly Used
  • Cisplatin
  • 5-FU
  • Hydroxyurea
  • Paclitaxel and docetaxel
  • Epirubicin

• Induction Chemo
  • Docetaxel/Cisplatin/5-FU

**Code Definition**

<table>
<thead>
<tr>
<th>Code</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>Chemo not part of planned first course</td>
</tr>
<tr>
<td>01</td>
<td>Chemo administered, but type and number of agents not documented</td>
</tr>
<tr>
<td>02</td>
<td>Single agent chemo administered</td>
</tr>
<tr>
<td>03</td>
<td>Multiagent chemo administered</td>
</tr>
<tr>
<td>82</td>
<td>Chemo not recommended/administered – contraindicated</td>
</tr>
<tr>
<td>85</td>
<td>Chemo not administered – patient died</td>
</tr>
<tr>
<td>86</td>
<td>Chemo not administered – recommended by physician, but not first course</td>
</tr>
<tr>
<td>87</td>
<td>Chemo not administered – recommended by physician, but refused</td>
</tr>
<tr>
<td>88</td>
<td>Chemo was recommended – unknown if administered</td>
</tr>
<tr>
<td>99</td>
<td>Unknown whether a chemo agent was recommended or administered or DCO</td>
</tr>
</tbody>
</table>
Pop Quiz

- Patient has an oropharynx cancer. Operative report states that the surgeon removed a portion of the oropharynx and the larynx.
- What is the surgery code?

  **Code 41: Pharyngectomy with Laryngectomy**

Treatment - Nasopharynx

- T1, N0, M0
  - Definitive RT and Elective RT to neck
- T1, N1-N3 ; T2-T4 with any N
  - Concurrent Chemo/RT followed by adjuvant Chemo
  - Concurrent Chemo/RT only
  - Induction Chemo followed by Chemo/RT
- Any T, Any N, M1
  - Platinum based combination Chemo
  - Concurrent Chemo/RT
**Treatment - Oropharynx**

- **T1-2, N0-1**
  - Definitive RT
  - Resection of primary with/without ipsilateral or bilateral neck dissection
  - RT + systemic therapy (T2, N1 only)
  - Multimodality clinical trials

- **T3-4a, N0-1**
  - Concurrent systemic therapy or RT
  - Resection of primary and neck
  - Induction chemo followed by RT or Systemic therapy/RT
  - Multimodality clinical trials
Treatment - Oropharynx

- Any T, N2-3
  - Concurrent systemic therapy or RT
  - Induction chemo followed by RT or Systemic Therapy/RT
  - Resection of primary and neck
    - Resection of primary, ipsilateral/bilateral neck dissection (N2a-b; N3)
    - Resection of primary, bilateral neck dissection (N2c)
  - Multimodality clinical trials

Treatment - Oropharynx

- T4b, any N or Unresectable nodal disease or Unfit for surgery
- Metastatic M1 disease at initial presentation
  - Clinical trial preferred
Treatment - Hypopharynx

- Most T1, N0, selected T2, N0
  - Definitive RT
  - Partial laryngopharyngectomy with ipsilateral/bilateral neck dissection

- T2-3, any N
  - Induction Chemo
  - Laryngopharyngectomy and neck dissection (Level VI)
  - Concurrent systemic therapy/RT
Treatment - Hypopharynx

- T4a, any N
  - Surgery with neck dissection
  - Induction Chemotherapy
  - Concurrent systemic therapy/RT

Pop Quiz

True or False?

- According to the NCCN guidelines, surgery is not recommended treatment for Nasopharynx tumors?

  True
Treatment Example

- Patient presents pain when swallowing. A fiber optic exam showed a 3.5cm lesion confined to the posterior pharyngeal wall. Cross sectional MRI confirmed the tumor was confined to the pharyngeal wall. Imaging also showed a single 3cm upper jugulodigastric lymph node highly suspicious for malignancy. No additional malignancy identified.

Treatment Example

- The patient was treated with transoral resection of the tumor and a selective neck dissection (levels 1-3). Per the operative report no gross residual tumor was left.
- This was followed by IMRT to the neck and concurrent weekly cisplatin.
  - Radiation summary: IMRT delivered to the oropharyngeal complex and regional lymph nodes. The patient received 5 treatments per week in 2.4Gy fractions for 6 weeks.
**Treatment Example: Surgery**

- Surgery of Primary Site: 27
- Scope of Regional Lymph Node Surgery: 3
- Surgical Procedure/Other Site: 0

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**Treatment Example: Radiation/Systemic**

- Volume: 05
- Regional modality: 31
- Regional dose: 07200
- Number of treatments: 30
- Radiation/surgery sequence: 3

- Chemotherapy: 02
- Systemic/surgery sequence: 3
Questions?
Quiz 2 and Case Scenarios

Coming Up…

- Directly Coded Cancer Stage…NOW
  - 12/3/15
- Collecting Cancer Data: Bone and Soft Tissue
  - 1/7/16
And the winners are…

CE Certificate Quiz/Survey

- Phrase

- Link