CT Anatomy Correlation with Oncology PET Imaging

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CT Correlation with Oncology PET Imaging

Part I: 8:00-9:30 am

- Introduction and Tumor Staging - Gregory Wiseman, M.D.
- Head and Neck Cancer - Val Lowe, M.D.
- Head and Neck CT Anatomy - Eric Rohren, M.D.
- Lymphoma and Hodgkin’s Disease - Malik Juweid, M.D.
- Lymphoma and Hodgkin’s Disease - Eric Rohren, M.D.
CT Correlation with Oncology PET Imaging

Part II: 12:30-2:00 pm

- Gastric, Esophageal, and Pancreatic Cancer - Val Lowe, M.D.
- Gastric, Esophageal, and Pancreatic Cancer CT Anatomy - Eric Rohren, M.D.

- Lung Cancer - Michael Graham, M.D.
- Lung Cancer CT Anatomy - Eric Rohren, M.D.

- Colorectal Cancer - Andrew Scott, M.D.
- Colorectal Cancer CT Anatomy - Eric Rohren, M.D.
Tumor Staging

**TNM Staging**

- **T** = primary tumor extent
- **N** = absence or presence and extent of regional lymph node metastasis
- **M** = absence or presence of distant metastasis

- **c**=clinical classified
- **p**=pathologic classified
- **r**=retreatment classified
- **a**=autopsy classified

- **T0, T1, T2, T3, T4** or for example **cT1, pT1, rT1, or aT1**
- **N0, N1, N2, N3**
- **M0, M1**
TNM Definitions

**Primary tumor**
- TX = Primary tumor cannot be assessed
- T0 = No evidence of primary tumor
- Tis = Carcinoma in situ
- T1, T2, T3, T4 = Increasing size and or local extent of the primary tumor depending on tumor type

**Regional lymph nodes**
- NX = Cannot be assessed
- N0 = No evidence of regional node metastasis
- N1, N2, N3 = Increasing involvement of regional nodes

**Distant metastasis**
- MX = Distant metastasis cannot be assessed
- M0 = No distant metastasis
- M1 = Distant metastasis present
Tumor Staging - Head and Neck Cancer - Lip or Oral Cavity

- **T1** = 2 cm or less
- **T2** = >2 cm but < or = 4 cm
- **T3** = >4 cm
- **T4** = (Lip) Invades cortical bone, alveolar nerve, floor of mouth, or skin of face
- **T4a** = (Oral) Invades cortical bone, deep tongue muscle, maxillary sinus or skin of face
- **T4b** = (Oral) Invades massiculator space, pterygoid plates, skull base and/or encases internal carotid artery
Tumor Staging - Head and Neck Cancer: Nasopharynx

- T1 = Confined to nasopharynx
- T2 = Extends into soft tissues
- T3 = Bone structures or paranasal sinuses
- T4 = Intracranial extension or cranial nerves, infratemporal fossa, hypopharynx, orbit or masticator space
Tumor Staging - Head and Neck Cancer: Oropharynx

- **T1** = 2 cm or less
- **T2** = > 2 cm but ≤ 4 cm
- **T3** = >4 cm
- **T4a** = Invades larynx, deep/extrinsic tongue muscle, medial pterygoid, hard palate or mandible
- **T4b** = Invades lateral pterygoid muscle, pterygoid plates, lateral nasopharynx, skull base or encases carotid
Tumor Staging - Head and Neck Cancer: Hypopharynx

- **T1** = One subsite and ≤ 2 cm
- **T2** = More than 1 subsite or adjacent site and >2 but ≤ 4 cm
- **T3** = >4 cm or fixation of hemilarynx
- **T4a** = Invades thyroid/cricoid cartilage, hyoid bone, thyroid gland or central compartment soft tissue
- **T4b** = Invades prevertebral fascia, encases carotid artery, or involves mediastinum
Tumor Staging - Head and Neck Cancer: Larynx- Glottis

- **T1=** Limited to vocal cords (normal cord mobility)
  - **T1a=** One vocal cord
  - **T1b=** Both cords

- **T2=** Supraglottis or subglottis or impaired cord

- **T3=** Limited to larynx with fixed cord and/or invades paraglottic space and/or minor thyroid cartilage erosion

- **T4a=** Invades thyroid cartilage and/or invades tissues beyond the larynx (e.g. trachea, thyroid, esophagus)

- **T4b=** Invades prevertebral space, encases carotid or invades mediastinum
Tumor Staging - Head and Neck Cancer (except Nasopharynx)

- **N0** = No nodal metastasis
- **N1** = Single ipsilateral node, 3 cm or less
- **N2** = Ipsilateral 3-6 cm or contralateral/bilateral 3cm or less
- **N3** = Nodes greater than 6 cm

- **M0** = No distant metastasis
- **M1** = Distant metastasis
Tumor Staging - Head and Neck Cancer - Nasopharynx

- **N0** = No nodal metastasis
- **N1** = Unilateral node, 6 cm or less, above supraclavicular fossa
- **N2** = Bilateral nodes, 6 cm or less, above supraclavicular fossa
- **N3** = Nodes greater than 6 cm or to supraclavicular fossa
- **M0** = No distant metastasis
- **M1** = Distant metastasis
Tumor Staging – Lymphoma and Hodgkin’s Disease

♦ **Stage I**
  Single lymph node region or single extralymphatic organ or site.

♦ **Stage II**
  Two or more lymph node regions on the same side of the diaphragm or a single extralymphatic site and regional lymph nodes

♦ **Stage III**
  Lymph node regions on both sides of the diaphragm or localized involvement of an extralymphatic organ or site or spleen

♦ **Stage IV**
  Disseminated (multifocal) involvement of 1 or more extralymphatic sites with or without lymph node involvement.

**B symptoms**

Loss of > 10% of body weight in 6 months.

Unexplained fever > 38 degrees C.

Drenching night sweats.