Lung
AJCC 8th Edition Staging

Donna M Gress, RHIT, CTR

ACS AJCC American Joint Committee on Cancer
American College of Surgeons

1

ACS AJCC American Joint Committee on Cancer
American College of Surgeons

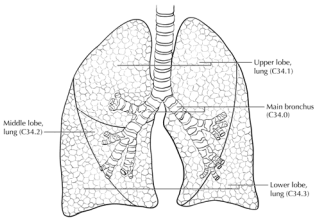
T, N, M Categories

2

ACS AJCC American Joint Committee on Cancer
American College of Surgeons

Lung Anatomy

- Critical to understand lung anatomy for tumor location
  - Carina
  - Main bronchi
  - Lobar bronchi
  - Bronchioles
  - Lobe locations
  - Lobe fissures
  - Hilum
  - Mediastinum
  - Apex, medial, lateral
  - Pleural based: near pleura, in periphery of lung



Compton, C.C., Byrd, D.R., et al., Editors. AJCC Cancer Staging Atlas, 2nd Edition. New York: Springer, 2012. ©American Joint Committee on Cancer

3

Lung Anatomy

- Anatomy courses are critical
  - Improve skills by reviewing material
  - Many available through online courses
  - Invest in anatomy books
- Understanding diagnostic procedures plays role in staging
  - Knowing what can be visualized by
    - Endoscopy procedures: bronchoscopy, mediastinoscopy
    - Thoracotomies and mediastinotomies
  - Online information or books

4

Hilum and Mediastinum

- Anatomic definitions
  - Hilum is location where bronchi, blood vessels enter lung
  - Mediastinum contains heart, trachea, esophagus, great vessels
- Hilar or mediastinal may refer to nodes or anatomic area
- Examples from CAnswer Forum
  - Rt hilar mass FNA, patient had RLL lobectomy
    - Hilar mass must be nodes since RLL lung is not near hilum
  - Large cavitary mass RUL extends into rt hilum
    - Need further info whether extending into hilum or hilar nodes
  - RUL mass, mediastinal adenopathy, FNA subcarinal node is neg
    - Not anatomic area, mediastinal nodes are not involved
  - 6cm mediastinal mass involving pulmonary arteries, chest wall, rib
    - Anatomic area of mediastinum, could include nodes

5

Clinical T Category

- Critical to read main and subcategories
  - Information to assign subcategory may reside in main category
  - Example: T2a instructions in T2
- Need to review all categories
  - May meet size of T2 but have invasion of T3 structures
  - Many different criteria involved including size and invasion
  - Category must reflect worst criteria
- Critical to understand anatomic and disease terms
  - Many different anatomical structures play a role
  - Disease terms such as atelectasis

6

Clinical T Category

TX has two different criteria

- If TX is microscopic findings without visible tumor
  - Sputum cells or bronchial washings
  - TX N0 M0 is occult carcinoma stage
- If TX is tumor cannot be assessed
  - Physician may use TX not assessed with N1-N3 or M1
  - With N0 M0, there is no tumor found and it isn't a cancer case
  - Critical for registrars to use T blank for lack of information, not TX
    - Physicians could misinterpret registry lack of information as occult

7

Clinical T and Pathological T Categories

- Multiple tumors not always separate tumor nodules
- Separate tumor nodules
  - ***Intrapulmonary spread*** from primary lesion
  - Affects assignment of T category or M category
    - T3 separate tumor nodules in same lobe
    - T4 separate tumor nodules in different ipsilateral lobe
    - M1a separate tumor nodules in contralateral lobe
- Some histologies have multiple synchronous tumors
  - Assign T category by largest tumor size, use (m)
  - ***Must*** use (m) to indicate tumor burden
  - Does ***NOT*** affect T category

8

Pathological T Category

- Clinical T category information used
  - Don't forget to include, except when disproven by resection
- Important when assigning T category
  - Read all category criteria to choose appropriate
  - Always assign subcategory if possible, be specific
- Must understand anatomical location of tumor and spread
  - Pleural based is ***not*** involving pleura
  - Location of main bronchus, lobar bronchus, hilum
- Clarifications in chapter
  - Direct invasion into adjacent ipsilateral lobe not separate nodule
  - Vocal cord paralysis
  - Pancoast tumors

9

Clinical N Category

- Mass, adenopathy, enlargement ***NOT*** nodal involvement
  - Was true 30-40yrs ago for chest x-rays
    - Not sensitive, must be large mass to be seen
  - Not true for CT, PET, MRI
    - Imaging is very sensitive and rarely malignant
    - Most often inflammatory or reactive process
- Cannot use old rules and apply to modern medicine
  - Rules must change and keep pace with changes in medicine
  - Physician at NCRA conference in 2013 heard registry rules and provided correction
  - Choose accurate information/staging over historic compatibility

10

Clinical N Category

- Imaging evaluation of nodes is critical
  - Size
  - SUV (standardized uptake value) on PET
- Use critical thinking with imaging reports
  - Radiologist comments and interpretation
  - Managing physician comments in progress notes
    - Taking everything into consideration
    - Not just one imaging report
- Size and SUV
  - Cannot provide absolute criteria and cutpoints
  - Must take into consideration other statements
  - Example: large size may be due to inflammation

11

Pathological N Category

- Include nodal imaging or seen by surgeon
  - As long as 1 node microscopically examined meets pN criteria
  - pN includes clinically involved and microscopically proven
  - Unless specific node involvement disproven on node dissection
- Remember to include nodes biopsied during workup
  - Add biopsied nodes to nodes resected

12

Clinical M and Pathological M Categories

- Important to assign subcategories
  - Even though stage group not affected by M1a & M1b
  - Critical to have M1a, M1b, and M1c data
  - Data may lead to different stage groups in future
- Assigning correct cM or pM
  - Based on method of assessment, not the stage classification
  - M1a microscopically proven, M1b on imaging = pM1b
  - Not **all** mets must be microscopically proven to assign pM
  - No mets microscopically proven is cM for pathological M category

13

Situations with their Category

- Chest wall invasion is T3, ***not*** M1b
  - Chest wall includes
    - Ribs
    - Sternum
    - Skeletal muscle
    - Diaphragm
- Pancoast tumors may be T3 or T4
- Invasion into mediastinal fat is T4
- Discontinuous tumor nodules
  - In ipsilateral parietal or visceral pleura is M1a
  - Outside parietal pleura in chest wall or diaphragm is M1b or M1c

14

ACS AJCC American Joint Committee on Cancer
American College of Surgeons

Stage Classification –
Diagnostic Workup & Treatment

15

Clinical and Pathological Staging

- Clinical Staging
  - Many procedures may be used for staging such as
    - Bronchoscopy, thoracoscopy, mediastinotomy, exploratory thoracotomy
  - Not all lesions will be biopsied – refer to NCCN guidelines
- Pathological Staging
  - Resection of primary tumor
    - Usually have nodal resection
  - Biopsies of highest T **and** highest N – general rules in Chapter 1

16

Clinical and Pathological Staging

- Histologies staged: non-small cell, small cell, carcinoid
  - Do not use limited and extensive for small cell
  - Need to use AJCC TNM for all these histologies
- Treatment may help registrar understand physician stage
  - Positive mediastinal nodes aren't eligible for surgical resection
  - Review treatment guidelines for help
- Guidelines
  - NCCN guidelines are main resource
  - Additional guidelines available through ASCO

17

Criteria for Clinical Classification - PreTreatment

- Patient undergoing diagnostic workup
  - Physical exam for lung function, potential supraclavicular nodes
  - History for risk factors
  - Imaging of lung and regional nodes
  - Sputum cytology
  - Bronchoscopy with biopsy and transbronchial needle aspiration
  - Imaging-guided needle biopsies or FNA
  - Thoracentesis
  - Mediastinoscopy
  - Video-assisted thoracic surgery (VATS) and open surgical biopsy
  - Endobronchial or endoscopic ultrasound guided biopsy
  - Navigational bronchoscopy
  - Bx adds time and risk, not always needed for treatment decisions
- Rare incidental findings

18

Diagnostic vs. Treatment

- Diagnostic procedures
  - Sampling of lung tumor
  - Not intended to remove entire tumor
  - Not known if entire tumor is removed at this point
  - Don't be confused by surgical procedures, such as VATS
- Surgical treatment of primary site
  - Resection of lung tumor
  - Extent of resection depends on clinical stage
  - Margin status does not change whether this is treatment
  - If nodal dissection not done, still considered treatment

19

Treatment Satisfying Stage Classification

- Pathological staging
  - Resection of lung tumor
  - Nodal dissection
    - Sampling from multiple stations as described in chapter
    - Not required to qualify for staging
  - Contraindication for surgery is usually positive mediastinal nodes
    - If surgical resection, must have formal mediastinal node dissection
- Postneoadjuvant therapy staging
  - Must meet standard guidelines, such as NCCN or ASCO
  - Indications for neoadjuvant
    - ≥ 4 cm or node positive
    - No contraindications
  - Definitive concurrent chemoradiation is most common

20

ACS AJCC American Joint Committee on Cancer
American College of Surgeons

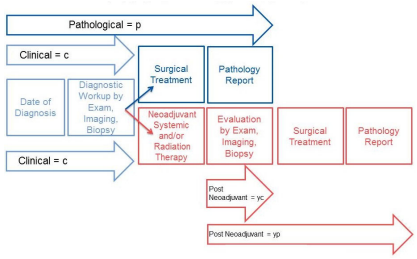
Information and Questions on AJCC Staging

21

Timing is Everything

AJCC Stage Classifications

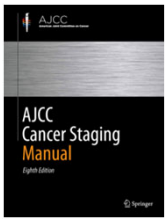
Defining Time Frame and Criteria

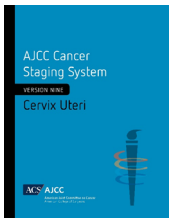


22

AJCC Web Site

- https://cancerstaging.org
- https://www.facs.org/quality-programs/cancer-programs/american-joint-committee-on-cancer/
- General information
  - Overview
  - Version 9
  - Cancer Staging Systems
    - AJCC 8th edition Chapter 1: Principles of Cancer Staging
  - Cancer Staging Education
  - FAQ & Resources





23

CAnswer Forum

- Submit questions to AJCC Forum
  - Version 9 Forum
  - 8th Edition Forum
  - Located within CAnswer Forum
  - Provides information for all
  - Allows tracking for educational purposes
- http://cancerbulletin.facs.org/forums/

ACS CAnswer

CAnswer Forum
American College of Surgeons

24

ACS AJCC American Joint Committee on Cancer American College of Surgeons

Developed through generous support from the American Cancer Society

American Cancer Society®

25

ACS AJCC American Joint Committee on Cancer American College of Surgeons

Thank You

Donna M. Gress, RHIT, CTR

Manager, Cancer Staging and Registry Operations
AJCC and Cancer Programs

cancerstaging.org ACS Cancer Programs @AJCCancer

26