Collecting Cancer Data: Lung

2013-2014 NAACCR Webinar Series

August 7, 2014

NAACCR

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.

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Fabulous Prizes





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Agenda

- Overview
  - Quiz 1
- Staging
  - Quiz 2
- Treatment
  - Quiz 3
- Case Scenarios

Key Statistics

Leading New Cancer Cases and Deaths – 2014 Estimates

Estimated New Cases				Estimated Deaths			
Male		Female		Male		Female	
Prostate	233,000 (27%)	Breast	232,670 (29%)	Lung & bronchus	86,930 (28%)	Lung & bronchus	72,330 (26%)
Lung & bronchus	116,000 (14%)	Lung & bronchus	108,210 (13%)	Prostate	29,480 (10%)	Breast	40,000 (15%)
Colon & rectum	71,830 (8%)	Colon & rectum	65,000 (8%)	Colon & rectum	26,270 (8%)	Colon & rectum	24,040 (9%)
Kidney & renal pelvis	39,140 (5%)	Non-Hodgkin lymphoma	32,530 (4%)	Leukemia	14,040 (5%)	Leukemia	10,050 (4%)
Non-Hodgkin lymphoma	38,270 (4%)	Melanoma of the skin	32,210 (4%)	Esophagus	12,450 (4%)	Uterine corpus	8,590 (3%)
Oral cavity & pharynx	30,220 (4%)	Kidney & renal pelvis	24,780 (3%)	Urinary bladder	11,170 (4%)	Non-Hodgkin lymphoma	8,520 (3%)
Leukemia	30,100 (4%)	Pancreas	22,890 (3%)	Non-Hodgkin lymphoma	10,470 (3%)	Liver & intrahepatic bile duct	7,130 (3%)
Liver & intrahepatic bile duct	24,600 (3%)	Leukemia	22,280 (3%)	Kidney & renal pelvis	8,900 (3%)	Brain & other nervous system	6,230 (2%)
All sites	855,220 (100%)	All sites	810,320 (100%)	All sites	310,010 (100%)	All sites	275,710 (100%)

*Excludes basal and squamous cell skin cancers and in situ carcinoma except urinary bladder.

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Survival

Trends in Five-year Relative Cancer Survival Rates (%), 1975-2009

Site	1975-1977	1987-1989	2003-2009
All sites	49	55	68
Breast (female)	75	84	90
Colon	51	60	65
Leukemia	34	43	59
Lung & bronchus	12	13	18
Melanoma of the skin	82	88	93
Non-Hodgkin lymphoma	47	51	71
Ovary	36	38	44
Pancreas	2	4	6

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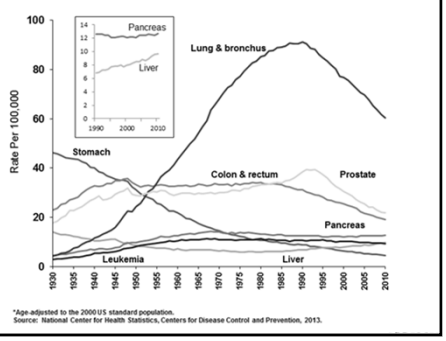
Risk Factors

- Smoking
  - Approximately 85 to 90% of lung cancer cases are caused by smoking
- Radon
- Asbestos



Histology

- Non Small Cell Lung Cancer (NSLC) (8046/3)
  - Adenocarcinoma (8140/3)
    - 40% of lung cancers
    - Usually found in the peripheral parts of the lung
  - Large Cell Carcinoma (8012/3)
  - Squamous Cell Carcinoma (8070/3)
    - 25-30% of all lung cancers
    - Usually originate in cells lining the inside of the lung airways. Tend to be more centrally located.

Histology

- Small Cell Lung Cancer (8041/3)
  - 10-15% of all lung cases
  - Starts in the bronchi near the center of the chest
  - Tends to spread widely to other parts of the body prior
  - Patients often present with regional or distant disease
- Lung carcinoid tumors (8240/3)
  - 5% of all lung cases
  - Tend to be slow growing

Thyroid transcription factor-1 (**TTF-1**)

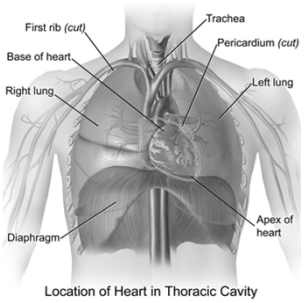
- Adenocarcinoma TTF-1 positive
- Squamous cell carcinoma TTF-1 negative and p63 positive
- TTF-1 helps distinguish primary lung adenocarcinoma from metastatic adenocarcinoma

Biomarkers

- Predictive biomarkers
  - Epidermal growth factor receptor (EGFR)
  - Anaplastic lymphoma kinase (ALK)
- Prognostic biomarker
  - KRAS
    - KRAS mutational status is prognostic of survival
    - Currently not targeted therapy for KRAS positive patients

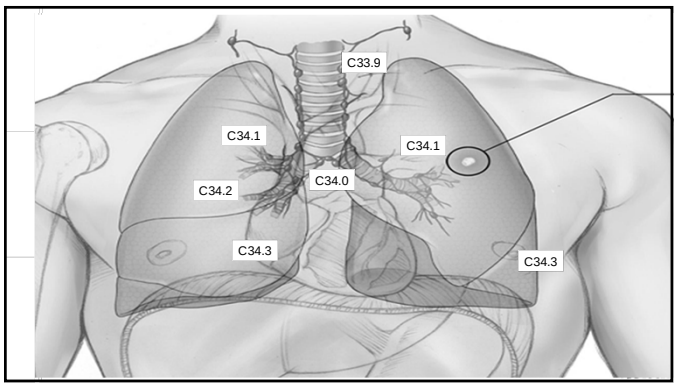
Anatomy

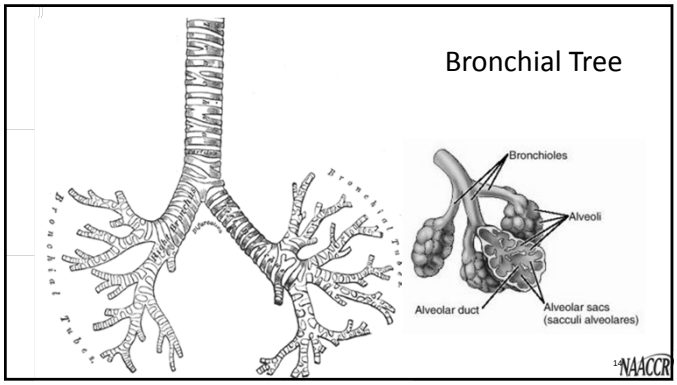
- Thoracic Cavity
  - Mediastinum
    - Superior vena cava
    - Trachea
    - Thymus
    - Heart
    - etc
  - Two Pleural Cavities (where the lungs are housed)
  - Diaphragm



Location of Heart in Thoracic Cavity

http://en.wikipedia.org/wiki/Thoracic_cavity#mediaviewer/File:Blausen_0458_Heart_ThoracicCavity.png


C33.9
C34.1
C34.1
C34.2
C34.0
C34.3
C34.3


Bronchial Tree
Bronchioles
Alveoli
Alveolar duct
Alveolar sacs
(sacculi alveolares)
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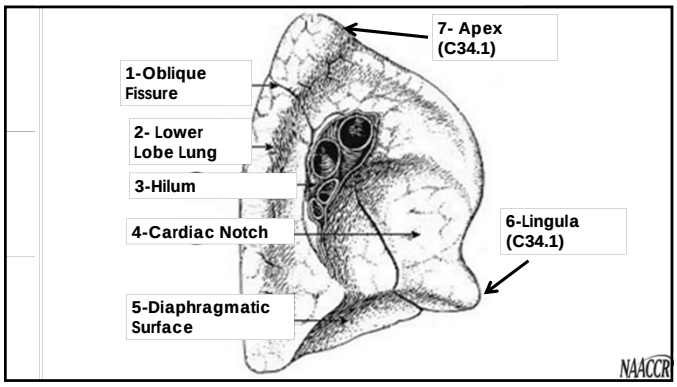
7- Apex
(C34.1)
1-Oblique
Fissure
2- Lower
Lobe Lung
3-Hilum
4-Cardiac Notch
6-Lingula
(C34.1)
5-Diaphragmatic
Surface
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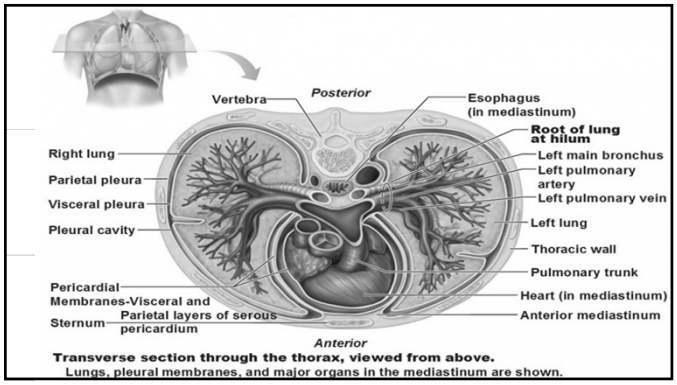
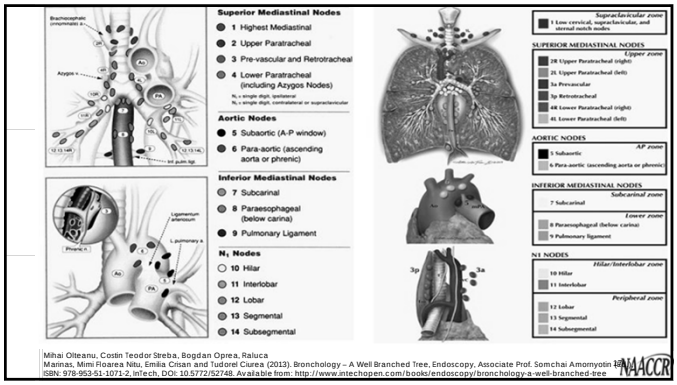


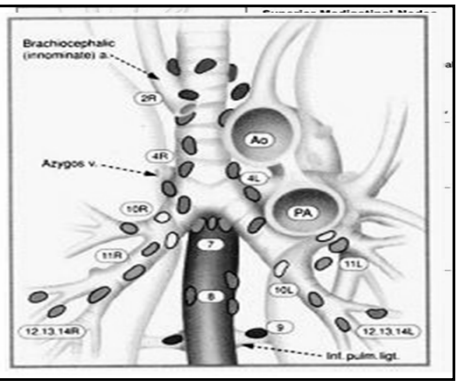
Transverse section through the thorax, viewed from above.
Lungs, pleural membranes, and major organs in the mediastinum are shown.



Mihai Oiteanu, Costin Teodor Streba, Bogdan Oprea, Raluca Mariniaș, Mimi Floarea Nitu, Emilia Cinian and Tudorel Ciurea (2013). Bronchology – A Well Branched Tree, Endoscopy, Associate Prof. Somchai Amornyotin (Ed.), ISBN: 978-953-51-1071-2, InTech, DOI: 10.5772/52748. Available from: http://www.intechopen.com/books/endoscopy/bronchology-a-well-branched-tree

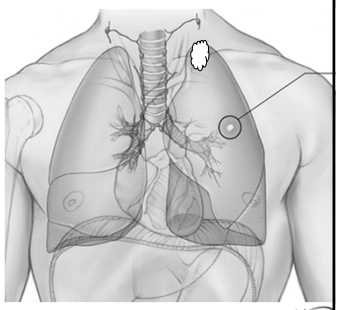
Lymph Node Stations

- Single digit stations are N2
- Double digit stations are N1



Pancoast Tumor

- Form in the extreme apex of the lung in the superior sulcus
- Tend to involve the chest wall structures rather than the underlying lung tissue
- Pancoast syndrome is characterized by pain in the shoulder and along the inner side of the arm or hand



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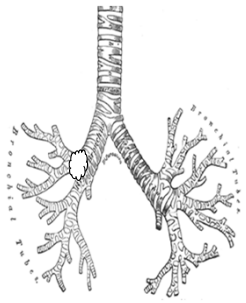
Atelectasis

- The collapse of part or (much less commonly) all of a lung
- Caused by a blockage of the air passages (bronchus or bronchioles) or by pressure on the outside of the lung.



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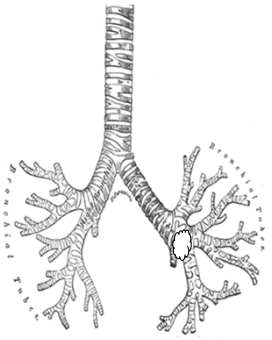
Obstructive Pneumoni

- Combination of atelectasis, bronchiectasis with mucous plugging, and parenchymal inflammation that develops distal to an obstructing endobronchial lesion.



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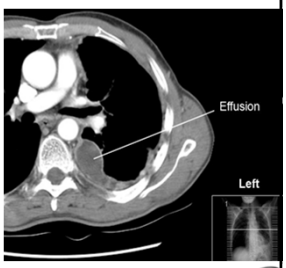
Pleural Effusion

- Caused by excess fluid accumulation between the two layers of the pleura
- Consider malignant unless multiple cytopathologic examinations of pleural and/or pericardial fluid are negative for tumor, and the fluid is non-bloody and is not an exudates



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Quiz

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Staging Systems

Lung

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Collaborative Stage Data Collection System V02.05

Lung

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CS Tumor Size: Lung

- Do not code size of hilar mass unless stated to be hilum primary
- Tumor size is a determinant in AJCC T1, T2, and T3

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CS Extension: Lung

- Do NOT code bronchopneumonia as obstructive pneumonitis
- Code invasion of pleura
  - Code 410: Extension to but not into pleura, including invasion of elastic layer BUT not through the elastic layer
  - Code 420: Invasion of pleura, including invasion through the elastic layer
  - Code 430: Invasion of pleura NOS
  - Code 600: Direct extension to parietal pleura
- Do NOT code pleural or pericardial effusion in CS Extension
- Assign code 700 for vocal cord paralysis from involvement of recurrent branch of vagus nerve

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CS Extension: Lung

- CS Extension = 000-440, 455-520, 540-600, 730, and 950-999
  - T category is based on value of CS Tumor Size, CS Extension, and SSF1
- CS Extension = 000-700, 740, and 950-999
  - Summary Stage 2000 is based on CS Extension and SSF1

Pop Quiz

- CT of Chest: There is a 3.8 x 4.7 cm mass with spiculated margins in the central portion of the left lower lung lobe that abuts the pericardium overlying the left ventricle. The linear opacity extending inferolateral to the mass represents atelectasis. There is no pleural effusion and no definite adenopathy.
- FNA biopsy left lower lung lobe: Malignant tissue consistent with non-small cell carcinoma.

Pop Quiz

- What is the code for CS Tumor Size?
  a. 038
  b. 047
  c. 997: Diffuse (entire lobe)
  d. 999: Unknown
- What is the code for CS Extension?
  a. 400: Atelectasis/obstructive pneumonitis that extends to the hilar region but does not involve the entire lung OR atelectasis/obstructive pneumonitis NOS
  b. 550: Atelectasis/obstructive pneumonitis involving entire lung
  c. 560: Parietal pericardium or pericardium NOS
  d. 999: Unknown

CS Lymph Nodes: Lung

- Code adenopathy, enlargement, or mass of lymph nodes named in codes 100 and 200 as lymph node involvement
  - Assign code 600 for bilateral adenopathy, enlargement, or mass
- Assign code 200 (mediastinal node involvement) for vocal cord paralysis from involvement of recurrent branch of vagus nerve if primary tumor is peripheral and unrelated to vocal cord paralysis

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Pop Quiz

- PET scan: 3.8 X 2.1 mass of middle lobe of right lung, consistent with malignancy; enlarged mediastinal nodes.
- Bronchoscopic biopsy: Brushing of right middle lobe negative for malignancy. Fine needle aspiration of multiple lymph node stations negative for malignancy.
- Wedge resection of right middle lobe of lung and lymph node dissection: 3.4 cm squamous cell carcinoma surrounded by intact visceral pleura; 0/12 malignant nodes (3 right and 3 left peribronchial LN, 3 right and 3 left mediastinal LN).

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Pop Quiz

- What is the code for CS Lymph Nodes?
  a. 000: No regional lymph node involvement
  b. 200: Ipsilateral mediastinal lymph node(s)
  c. 600: Contralateral/bilateral mediastinal lymph node(s)
  d. 999: Unknown

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CS Mets at DX: Lung

- Code pleural and pericardial effusion as distant metastasis
  - UNLESS multiple cytopathologic exams and clinical judgment indicate effusion is not related to tumor
- Code separate tumor nodules in contralateral lung and pleural tumor foci or nodules on contralateral lung as distant metastasis (code 23)
- Code direct extension of structures considered M1 as distant metastasis
  - Extension to contralateral lung or mainstem bronchus (code 23)
  - Extension to sternum, skeletal muscle, skin of chest (code 37)

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Pop Quiz

- CT Chest: RLL lung mass, 4.5cm, with contiguous extension superiorly to right hilar and perihilar region and hilar lymphadenopathy. No contralateral nodal activity. Suspect metastatic disease to lower thoracic and lumbar spine.
- Chest x-ray: Accentuated interstitial markings with hazy opacity in RUL lung. Bilateral pulmonary nodules in LUL lung.
- FNA biopsy RLL lung mass: Non-small cell carcinoma.
- MRI & Bone scan: Negative for metastasis.

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Pop Quiz

- What is the code for CS Mets at DX?
  a. 00: No distant metastasis
  b. 23: Separate tumor nodule(s) in contralateral lung
  c. 40: Distant metastasis
  d. 41: 40 + 23

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SSF1: Separate Tumor Nodules – Ipsilateral Lung

Code	Description
000	No separate tumor nodules noted
010	Separate tumor nodules in ipsilateral lung, same lobe
020	Separate tumor nodules in ipsilateral lung, different lobe
030	020 + 010
040	Separate tumor nodules, ipsilateral lung, unknown if same or different lobe
988	Not applicable: Information not collected for this case
999	Unknown if separate tumor nodules Separate tumor nodules cannot be assessed Not documented in patient record

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Pop Quiz

- Left upper lung lobe biopsy: Adenocarcinoma.
- Chest CT scan: Multiple lung nodules are present; LUL 2.1cm, RML 2.0cm, RML less than 4 mm, LLL less than 4mm; bilateral mediastinal lymphadenopathy; metastatic nodules in right ribs.
- Discharge summary final diagnosis: Left lung carcinoma with metastasis.

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Pop Quiz

- What is the code for SSF1?
  a. 000: No separate tumor nodules noted
  b. 010: Separate tumor nodules in ipsilateral lung, same lobe
  c. 020: Separate tumor nodules in ipsilateral lung, different lobe
  d. 030: 020 + 010
  e. 040: Separate tumor nodules, ipsilateral lung, unknown if same or different lobe

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SSF2: Pleural/Elastic Layer Invasion (PL) by H and E or Elastic Stain

- Code level of pleural layer (PL) invasion as documented on path report
- Assign code 998 if no histologic exam of pleura
  - FNA is not adequate to assess PL invasion

SSF2: Pleural/Elastic Layer Invasion (PL) by H and E or Elastic Stain

- PL0: Tumor does not completely traverse elastic layer
- PL1: Tumor extends through elastic layer
- PL2: Tumor extends to surface of visceral pleura
- PL3: Tumor extends to parietal pleura

Definition of PL invasion from AJCC Cancer Staging Manual, 7th Ed.; page 264

Pop Quiz

- Wedge resection of right middle lobe of lung and lymph node dissection:
  - Histologic tumor type: Squamous cell carcinoma
  - Histologic tumor grade: 2 of 4
  - Tumor focality: Single tumor
  - Tumor size: 3.4 cm
  - Visceral pleura involvement: Tumor extends to but not through the elastic layer
  - Margins: Negative
  - Lymph node status: 0/12

Pop Quiz

- What is the code for SSF2?
  a. 000: PL0
  b. 010: PL1
  c. 020: PL2
  d. 030: PL3
  e. 040: Invasion of pleura NOS

AJCC Cancer Stage

Lung: Chapter 25

AJCC Cancer Stage: Lung

- Classification
  - Clinical staging
    - Evidence acquired prior to treatment
      - Physical exam, imaging studies, lab tests, and staging procedures
  - Pathologic staging
    - Evidence acquired prior to treatment + evidence acquired during and after surgery, particularly from pathologic exam
      - Resection of primary tumor sufficient to evaluate highest pT
      - Removal of sufficient number of lymph nodes to evaluate highest pN

AJCC Cancer Stage: Lung

- ICD-O-3 Topography Codes
  - C34.0, C34.1, C34.2, C34.3, C34.8, C34.9
- ICD-O-3 Histology Code Ranges
  - 8000-8576
  - 8940-8950
  - 8980-8981

AJCC Cancer Stage: Lung
T Category

- TX: Primary tumor cannot be assessed

  OR tumor proven by presence of malignant cells in sputum or bronchial washings but not visualized by imaging or bronchoscopy
- T0: No evidence of primary tumor
- Tis: Carcinoma in situ

AJCC Cancer Stage: Lung
T Category

- T1: Tumor 3 cm or less surrounded by lung or visceral pleura without bronchoscopic evidence of invasion more proximal than the lobar bronchus
- T1a: Tumor 2 cm or less
- T1b: Tumor more than 2 cm but 3 cm or less

AJCC Cancer Stage: Lung
T Category

- T2
  - Tumor more than 3 cm but 7 cm or less OR
  - Any of the following features
    - Involves main bronchus 2 cm or more distal to carina
    - Invades visceral pleura (PL1 or PL2)
    - Associated with atelectasis or obstructive pneumonitis that extends to hilar region but does not involve entire lung
  - T2 tumors with above features are T2a if 5 cm or less
- T2a: Tumor more than 3 cm but 5 cm or less
- T2b: Tumor more than 5 cm but 7 cm or less

AJCC Cancer Stage: Lung
T Category

- T3
  - Tumor more than 7cm OR
  - Directly invades any of the following: parietal pleura (PL3) chest wall (including superior sulcus tumors), diaphragm, phrenic nerve, mediastinal pleura, parietal pericardium OR
  - Tumor in main bronchus less than 2 cm distal to carina but without involvement of carina OR
  - Associated atelectasis or obstructive pneumonitis of entire lung OR
  - Separate tumor nodule(s) in same lobe

AJCC Cancer Stage: Lung
T Category

- T4: Tumor of any size invades
  - Mediastinum, heart, great vessels, trachea, recurrent laryngeal nerve, esophagus, vertebral body, and/or carina
  - Separate tumor nodule(s) in different ipsilateral lobe

AJCC Cancer Stage: Lung
N Category

- NX: Regional lymph nodes cannot be assessed
- N0: No regional lymph node metastasis
- N1: Metastasis in ipsilateral peribronchial and/or ipsilateral hilar lymph nodes and intrapulmonary nodes including involvement by direct extension
- N2: Metastasis in ipsilateral mediastinal and/or subcarinal lymph nodes
- N3: Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular lymph nodes

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AJCC Cancer Stage: Lung
M Category

- M0: No distant metastasis
- M1: Distant metastasis
- M1a
  - Separate tumor nodule(s) in contralateral lobe tumor with pleural nodules OR
  - Malignant pleural or pericardial effusion
- M1b: Distant metastasis (in extrathoracic organs)

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AJCC Cancer Stage: Lung

Anatomic Stage/Prognostic Groups

Stage	T	N	M
0ccult carcinoma	X	0	0
0	is	0	0

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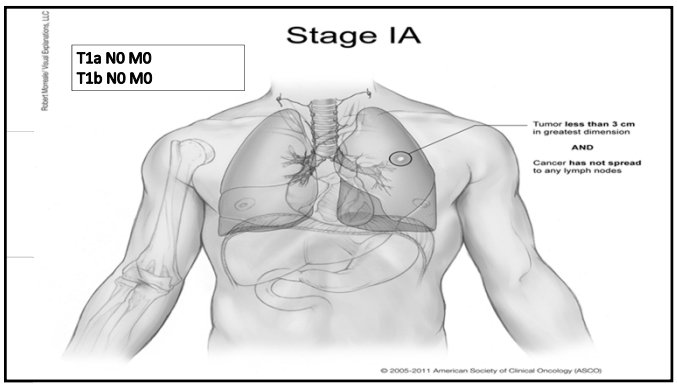
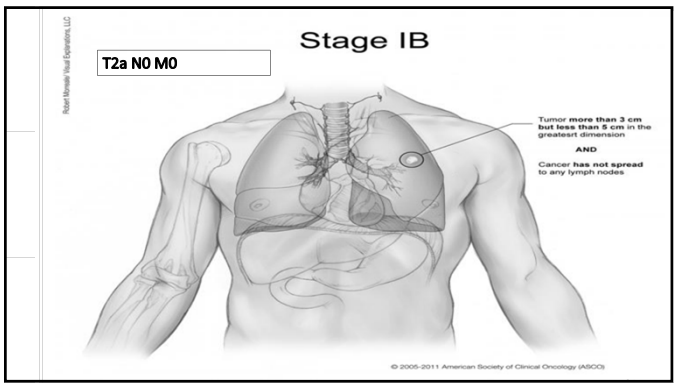

Stage IA
T1a N0 M0
T1b N0 M0
Tumor less than 3 cm in greatest dimension
AND
Cancer has not spread to any lymph nodes
© 2005-2011 American Society of Clinical Oncology (ASCO)


Stage IB
T2a N0 M0
Tumor more than 3 cm but less than 5 cm in the greatesrt dimension
AND
Cancer has not spread to any lymph nodes
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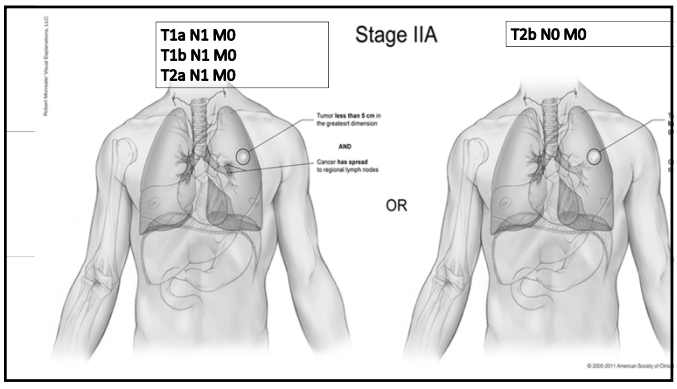
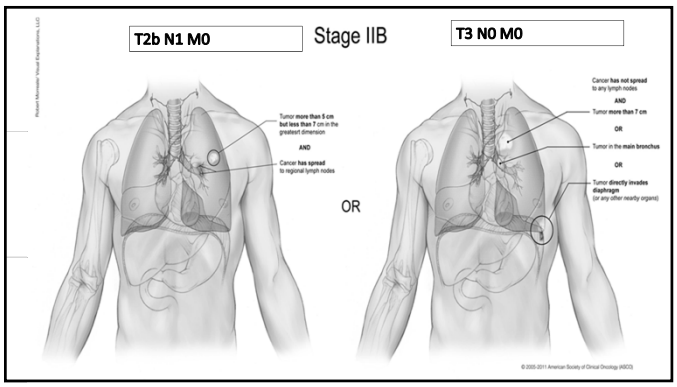
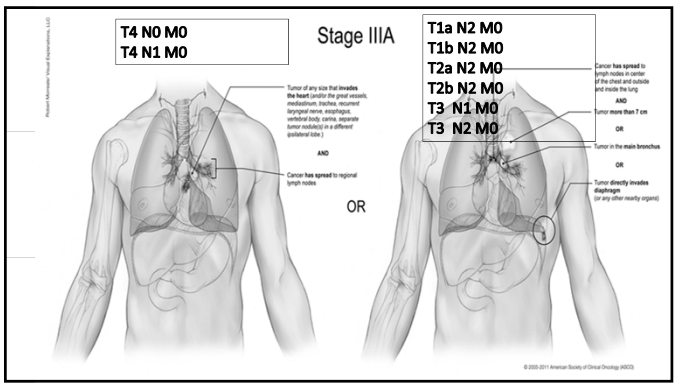
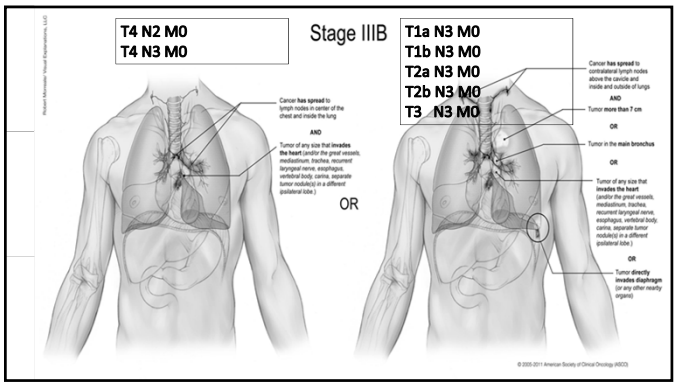
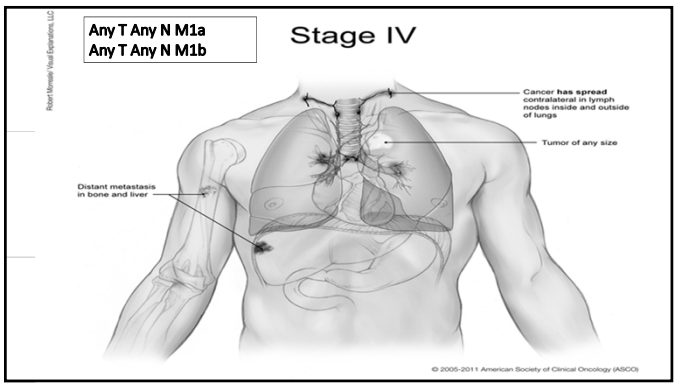

T1a N1 M0
T1b N1 M0
T2a N1 M0
Stage IIA
T2b N0 M0
Tumor less than 5 cm in the greatest dimension
AND
Cancer has spread to regional lymph nodes
OR


T2b N1 M0
Stage IIB
T3 N0 M0
Tumor more than 5 cm but less than 7 cm in the greatest dimension
AND
Cancer has spread to regional lymph nodes
OR
Cancer has not spread to any lymph nodes
AND
Tumor more than 7 cm
OR
Tumor in the main bronchus
OR
Tumor directly invades diaphragm (or any other nearby organs)


T4 N0 M0
T4 N1 M0
Stage IIIA
T1a N2 M0
T1b N2 M0
T2a N2 M0
T2b N2 M0
T3 N1 M0
T3 N2 M0
Tumor of any size that invades the heart (and/or the great vessels, mediastinum, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe.)
AND
Cancer has spread to regional lymph nodes
OR
Cancer has spread to lymph nodes in center of the chest and outside and inside the lung
AND
Tumor more than 7 cm
OR
Tumor in the main bronchus
OR
Tumor directly invades diaphragm (or any other nearby organs)


T4 N2 M0
T4 N3 M0
Stage IIIB
T1a N3 M0
T1b N3 M0
T2a N3 M0
T2b N3 M0
T3 N3 M0
Cancer has spread to lymph nodes in center of the chest and inside the lung
AND
Tumor of any size that invades the heart (and/or the great vessels, mediastinum, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe.)
OR
Cancer has spread to contralateral lymph nodes above the cavicle and inside and outside of lungs
AND
Tumor more than 7 cm
OR
Tumor in the main bronchus
OR
Tumor of any size that invades the heart (and/or the great vessels, mediastinum, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe.)
OR
Tumor directly invades diaphragm (or any other nearby organs)



Pop Quiz

- CT/PET: 6 cm mass in right and upper lung lobe, most likely malignant, with tumor associated obstructive pneumonitis in the upper lobe. No lymphadenopathy or metastasis observed.
- Right middle and upper lung lobectomies: Moderately differentiated squamous cell carcinoma, 6 x 5 x 4.5 cm, of upper and middle lobes obliterates the fissure. No evidence of any mass lesions within the bronchial tree. Tumor is confined within the lung parenchyma with no invasion of the visceral pleura. Margins clear. 19 lymph nodes dissected; microscopic focus of metastasis in 1 ipsilateral hilar node.

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Pop Quiz

- What is the AJCC clinical stage?
- What is the AJCC pathologic stage?

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Summary Stage 2000
http://seer.cancer.gov/tools/ssm/
Lung

Summary Stage 2000

- 0 In situ
  - Noninvasive; intraepithelial
- 1 Localized
  - Confined to carina
  - Confined to hilus of lung
  - Confined to main stem bronchus ≥ 2.0 cm from carina
  - Confined to main stem bronchus NOS
  - Extension from other parts of lung to main stem bronchus ≥ 2.0 cm from carina
  - Extension from other parts of lung to main stem bronchus NOS
  - Single tumor confined to 1 lung
  - Localized NOS

Summary Stage 2000

- 2 Regional by direct extension only
  - Extension to major blood vessels, brachial plexus from superior sulcus, carina from lung, chest wall, diaphragm, esophagus, main stem bronchus < 2 cm from carina, mediastinum (extrapulmonary or NOS), nerves (cervical sympathetic, phrenic, recurrent laryngeal, vagus), pancoast tumor, parietal pleura, parietal pericardium, pericardium NOS, pleura NOS, pulmonary ligament, trachea, visceral pleura
  - Separate tumor nodule(s) in same lobe
  - Separate tumor nodule(s) in main stem bronchus
  - Tumor of main stem bronchus < 2 cm from carina

Summary Stage 2000

- 3 Regional IPSILATERAL lymph nodes(s) involved only
  - Aortic NOS, peri/para-aortic, subaortic, bronchial, carinal, hilar, intrapulmonary, mediastinal, pericardial, peri/parabronchial, peri/paraesophageal, peri/paratracheal, pre and retrotracheal, pulmonary ligament, subcarinal
  - Regional lymph nodes NOS
- 4 Regional by BOTH direct extension AND IPSILATERAL regional lymph node(s) involved
  - Summary Stage 2000 codes 2 + 3
- 5 Regional NOS

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Summary Stage 2000

- 7 Distant site(s)/lymph node(s) involved
  - Distant lymph nodes
    - Cervical, contralateral/bilateral hilar, contralateral/bilateral mediastinal, scalene (ipsilateral or contralateral), supraclavicular (ipsilateral or contralateral), other distant lymph nodes
  - Extension to
    - Abdominal organs, adjacent rib, contralateral lung, contralateral main stem bronchus, heart, pericardial effusion, pleural effusion, skeletal muscle, skin of chest, sternum, vertebra(e), visceral pericardium
  - Separate tumor nodule(s) in different lobe
  - Separate tumor nodule(s) in contralateral lung
  - Metastasis

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Pop Quiz

- CT Chest: 8.3 cm left lung upper lobe mass. Left hilar adenopathy, most likely malignant. 1.9 cm left adrenal mass consistent with adrenal adenoma. Small left sided pleural effusion.
- Left upper lobe lung biopsy: Poorly differentiated adenocarcinoma.
- Patient deemed inoperable and referred to oncology for treatment plan.

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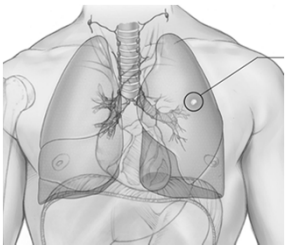
Pop Quiz

- What is the Summary Stage 2000?
  a. 0 In situ
  b. 1 Localized
  c. 2 Regional by direct extension only
  d. 3 Regional ipsilateral regional lymph node(s) involved only
  e. 4 Regional by both extension and ipsilateral regional lymph node(s) involved
  f. 5 Regional NOS
  g. 7 Distant site(s)/node(s) involved

Quiz

Diagnostic and Staging Procedures

- MRI
- CT Scan
- PET Scan
- Bronchoscopy
- Mediastinoscopy
  - Lymph Node Sampling



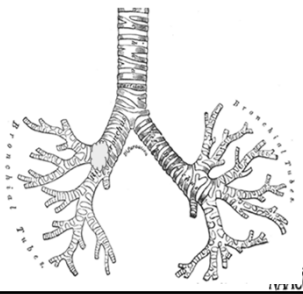
Treatment

NSCLC

- Surgery provides the best chance of cure for patients with Stage I or Stage II

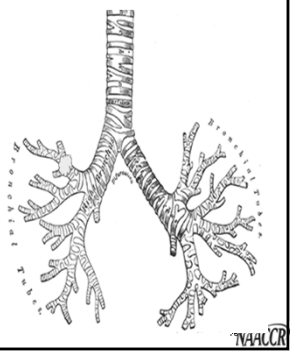
Surgical Procedures

- Lobectomy (30)
  - Removal of an entire lobe
- Sleeve Lobectomy (30)
  - Removes a lobe of the lung plus part of the airway and then re-attaches the airway
- Pneumonectomy (55)
  - Removal of entire lung



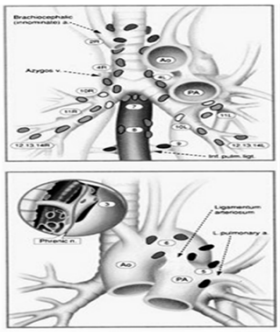
Surgical Procedures

- Sublobar resection
  - Segmentectomy (22)
  - Wedge resection (21)



Lymph Node Dissection

- Lymph node sampling is appropriate for patients with N0 disease having pulmonary resection
  - Right side primary
    - 2R, 4R, 7, 8, and 9
  - Left side primary
    - 4L, 5, 6, 7, 8, and 9



NSCLC

- Stage IIIA N2
  - Patients with a single positive N2 node less than 3cm, may be eligible for surgery after neoadjuvant treatment

Radiation (RT)

- May be given as…
  - Adjuvant treatment for patients with resectable disease
  - Primary local treatment
  - Palliative treatment
- CT Planned 3D conformal RT is now considered minimum standard
  - 4D conformal, intensity modulated RT/ volumetric modulated arc (IMRT/VMAT), image guided RT, motion management strategies, and proton therapy have been shown to reduce toxicity and improve survival

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RT

- Recommended for early stage NSCLC patients that are medically inoperable or refuse surgery.
- Definitive chemoradiation is recommended for patients who are stage II-III

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RT

- Stereotactic Ablative Radiotherapy (SABR)
  - Uses short courses of very high dose RT that are precisely delivered to the target.
  - Improved 3 year survival in patients with stage I disease.
- Whole Brain RT and Stereotactic Radiosurgery

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Chemotherapy

- May be given as…
  - Neoadjuvant
  - Adjuvant therapy
  - Chemoradiation
- Usually platinum based
  - Cisplatin
- May be targeted therapy
  - Erlotinib
  - Crizotinib

Small Cell Lung Cancer

- Limited Stage
  - Any AJCC stage I-III (any T, any N, M0) that can be treated with definitive radiation
    - Unless there are multiple lung nodules
- Extensive stage is a stage 4 (any T, any N, M1a or M1b) of T3-4 with multiple nodules or a tumor too big to be treated by radiation.

Surgery

- Patients with stage I disease are surgical candidates
  - Less than 5% of patients present with stage I disease
  - Patients should have a thorough staging evaluation prior to resection
  - Adjuvant chemotherapy is required

Chemotherapy

- Adjuvant chemotherapy for patients who are surgical candidates
- Chemotherapy is the primary treatment for patients with extensive disease
- Concurrent chemotherapy and radiation is recommended for patients with limited stage disease that are not surgical candidates
  - Etoposide and cisplatin (EP) is a common regimen

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RT

- For limited stage disease concurrent RT with chemotherapy is preferred to sequential RT and chemotherapy.
- For extensive stage thoracic RT may be beneficial for selected patients.
- Prophylactic Cranial Irradiation in patients with good responses to initial therapy decreases brain mets and increases overall survival.

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Quiz

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Questions?

Quiz

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And the winners are……..





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CE Certificate Quiz/Survey

- Phrase
- Link
  - http://www.surveygizmo.com/s3/1752336/Lung-2014

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Thank You!!!!

Please send any questions to:
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