

## Lung

### Case Scenario 1

A 54 year white male presents with a recent abnormal CT of the chest. The patient has a history of melanoma, kidney, and prostate cancers.

10/24/13 Chest X-ray: 2.9 cm mass like density in the inferior lingular segment worrisome for neoplasm. Malignancy cannot be excluded.

10/26/13 CT Chest: 2.8 cm speculated soft tissue mass inferior lingular segment consistent with malignancy. This could represent either a primary such as bronchogenic carcinoma or a metastasis. Indeterminate non-calcified sub centimeter soft tissue nodules of unknown malignant potential (one within left upper lobe and one within the right upper lobe).

11/12/13 PET/CT: A 2.9 cm diameter spiculated mass in the lingula demonstrates abnormally increased FDG accumulation (max SUV = 11.9). This is consistent with malignancy. No additional sites of abnormally increased FDG accumulation are visualized elsewhere. Specifically, no abnormal FDG accumulation to correspond to the sub centimeter nodules visualized on the outside CT study in the upper lobes bilaterally. Although the absence of visible FDG accumulation favors a benign etiology, the small size of the nodules reduces the sensitivity of FDG-PET imaging for detecting malignancy.

12/5/13 Operative Report: Left thoracoscopic wedge resection and left upper lobectomy: With the patient under adequate general tracheal anesthesia, bronchoscopy was performed. No endobronchial lesions identified. With the double-lumen endotracheal tube positioned, in the full lateral position with the left side up, patient prepped and draped. Three access ports were utilized, through which a 10 mm rigid thoracoscope was introduced. There were no significant adhesions. The lesion was identified in the lingular area in the upper lobe. A generous wedge resection was performed using the endoscopic stapler. The specimen was removed in a sterile bag and sent for frozen section evaluation, which proved to be an adenocarcinoma. It did not appear to be metastatic. Therefore, the upper lobe was resected in standard fashion. The heavy black load was used to cross the bronchus, purple loads across the other vascular structures. The specimen was removed. The bronchial stump was checked and was air tight. The area was irrigated out. Mediastinal nodes were sampled.

Path: Final Diagnosis:

#### A) LUNG, LEFT UPPER LOBE, WEDGE BIOPSY:

- HISTOLOGIC TUMOR TYPE: INVASIVE MODERATE DIFFERENTIATED ADENOCARCINOMA.
- HISTOLOGIC TUMOR GRADE: GRADE 2 (OF 4).
- TUMOR FOCALITY: UNIFOCAI.
- TUMOR SIZE: 2.9 X 2.5 X 2.3 CM.
- VISCERAL PLEURA INVOLVEMENT: PRESENT (PL1 HIGHLIGHTED WITH VVG STAIN).
- VASCULAR INVASION: NOT IDENTIFIED.
- MARGINS: SURGICAL MARGIN IS NEGATIVE FOR TUMOR.
- ADDITIONAL PATHOLOGIC FINDINGS: EMPHYSEMATOUS CHANGES AND BRONCHIECTASIS.

B) LYMPH NODE (1), MEDIASTINAL, EXCISION:

- NEGATIVE FOR MALIGNANCY.

C) LUNG, LEFT UPPER LOBE, LOBECTOMY:

- NO RESIDUAL TUMOR IDENTIFIED.
- THE SURGICAL MARGINS ARE NEGATIVE.
- A SINGLE BENIGN LYMPH NODE IS IDENTIFIED.

D) LYMPH NODE (1), AP WINDOW, EXCISION:

- NEGATIVE FOR MALIGNANCY.

E) LYMPH NODE (1), INFERIOR PULMONARY LIGAMENT, EXCISION:

- HYALINIZED GRANULOMATOUS INFLAMMATION.
- NEGATIVE FOR MALIGNANCY.

### Case Scenario 1 Worksheet

Primary Site	Morphology	Grade	
<b>Stage/ Prognostic Factors</b>			
CS Tumor Size		CS SSF 9	
CS Extension		CS SSF 10	
CS Tumor Size/Ext Eval		CS SSF 11	
CS Lymph Nodes		CS SSF 12	
CS Lymph Nodes Eval		CS SSF 13	
Regional Nodes Positive		CS SSF 14	
Regional Nodes Examined		CS SSF 15	
CS Mets at Dx		CS SSF 16	
CS Mets Eval		CS SSF 17	
CS SSF 1		CS SSF 18	
CS SSF 2		CS SSF 19	
CS SSF 3		CS SSF 20	
CS SSF 4		CS SSF 21	
CS SSF 5		CS SSF 22	
CS SSF 6		CS SSF 23	
CS SSF 7		CS SSF 24	
CS SSF 8		CS SSF 25	
Summary Stage		Derived AJCC TNM Stage (indicate c or p in the space before the T, N, or M)	
Clinical AJCC TNM Stage		Pathologic AJCC TNM Stage	
<b>Treatment</b>			
Diagnostic Staging Procedure			
<b>Surgery Codes</b>		<b>Radiation Codes</b>	
Surgical Procedure of Primary Site		Radiation Treatment Volume	
Scope of Regional Lymph Node Surgery		Regional Treatment Modality	
Surgical Procedure/ Other Site		Regional Dose	
<b>Systemic Therapy Codes</b>		Boost Treatment Modality	
Chemotherapy		Boost Dose	
Hormone Therapy		Number of Treatments to Volume	
Immunotherapy		Reason No Radiation	
Hematologic Transplant/Endocrine Procedure		Radiation/Surgery Sequence	
Systemic/Surgery Sequence			

## Case Scenario 2

A 71 year old white male presents with persistent pneumonia. He has a history of adenocarcinoma of the colon.

5/14/13 CT Chest:

1. No acute pulmonary thromboembolism.
2. Right upper lobe peribronchovascular nodular opacity. Multiple bilateral parenchymal, pleural and subpleural pulmonary nodules. The largest nodule is in the right upper lobe parenchyma and measures 4.3cm. Bilateral hilar, mediastinal and right axillary lymphadenopathy. This most likely represents metastasis.
3. The right hilar lymphadenopathy causes narrowing of the right upper lobe bronchus and its segmental branches, right upper lobe pulmonary artery and right interlobar artery.
4. Right-sided mild to moderate pleural effusion.

5/14/13 Thoracentesis: involvement by small cell carcinoma

5/25/13 MRI Brain: Negative for malignancy

5/28/13 PET/CT: Multiple parenchymal nodules within the middle lobe, right lower lobe and branching peribronchiolar nodular opacity within the right upper lobe with multiple subpleural nodules in the lingula, left lung apex and portions of the left lower lobe. Extensive intrathoracic metastatic bronchogenic disease predominantly within the right hemithorax and involving the right pleural space. No osseous metastatic disease.

5/22/13 Medical Oncology: Cisplatin, VP-16

10/28/13-11/8/13 Radiation Oncology: Prophylactic cranial irradiation, 6MV, 2500 cGy in 10 fractions to whole brain

11/12/13-12/17/13 Radiation Oncology: Right upper lung, 18MV, 5000 cGy in 25 fractions

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CS Extension		CS SSF 10	
CS Tumor Size/Ext Eval		CS SSF 11	
CS Lymph Nodes		CS SSF 12	
CS Lymph Nodes Eval		CS SSF 13	
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CS SSF 2		CS SSF 19	
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Chemotherapy		Boost Dose	
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Immunotherapy		Reason No Radiation	
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### Case Scenario 3

57 year-old white male presents w/SOB, chest pain. Patient is a smoker.

#### CT Chest

##### IMPRESSION:

1. Spiculated right upper lobe mass highly suspicious for primary lung neoplasm. Right hilar and right and left mediastinal lymphadenopathy suspicious for metastatic disease.
2. Lytic lesion in the T12 vertebra highly suspicious for metastatic disease. Involvement of the spinal canal cannot be evaluated by this modality; correlation with clinical symptoms is recommended.
3. Large right sided pleural effusion and small left sided effusion. Ground glass opacities in the right lower lobe related to atelectasis. No pulmonary embolism as clinically questioned.
4. Large pericardial effusion.
5. Upper abdominal lymphadenopathy suspicious for metastatic disease.
6. Nonspecific thickening of the adrenal glands which may be due to hyperplasia; however, metastatic disease cannot be excluded given above findings.

#### CT Head

IMPRESSION: No definite CT evidence of acute intracranial abnormality. Mild volume loss

#### CT Abd/Pelvis:

##### IMPRESSION:

1. Complex severe pericardial effusion. May contain blood, pus or proteinaceous fluid. Unable to exclude metastatic involvement.
2. Osteolytic suspicious metastatic lesions, sacrum and right femoral neck.
3. Fluid density structure, T12. Questionable necrotic lytic metastasis. Neuroenteric cyst may also be a possibility.
4. Nonspecific right adrenal thickening.
5. Coronary artery calcifications.

#### MRI Spine

IMPRESSION: Limited examination. Suspicious marrow replacing lesions in the T12 and S1 vertebral levels, raising concern for osseous metastasis in this patient with metastatic lung cancer. No gross evidence of extraosseous/epidural extension. No evidence of cord compression. Degenerative changes.

#### Bone Scan

##### IMPRESSION:

1. Foci of abnormally increased tracer accumulation highly suspicious for metastases in the right scapula, and both proximal femurs as described.
2. Increased tracer accumulation in the body of T12 surrounding a central region of decreased activity could represent reactive uptake associated with a benign process. However, an additional site of metastatic disease is also a differential consideration.
3. Uptake in a pattern consistent with degenerative disease in a distribution described in the body report.

Pericardiocentesis:

Positive for malignancy. Metastatic poorly differentiated adenocarcinoma consistent with primary lung origin. EGFR wild type.

Treatment:

Patient opted for hospice.

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