Surgical Options for the Treatment of Lung Cancer
The Iowa Clinic and UnityPoint Iowa Methodist Medical Center
"If smoking relaxes you, then don’t quit. Being dead is very relaxing."
Treatment of Lung Cancer

- Diagnosis
- Staging
- Resection
- Palliation
Diagnosis

• CT-Guided biopsy
• Bronchoscopic biopsy
  – Standard Bronchoscopy
  – Transbronchial biopsy
  – Endobronchial Ultrasound / biopsy
• Video-assisted thoracoscopy (wedge resections)
• Mediastinoscopy
Endoscopy:

- Endobronchial ultrasound guided biopsy and Standard Flexible Bronchoscopy – Intraoperative Pathologic Analysis
Surgical Procedures:

- Thoracoscopic (VATS) procedures
- Bleb resections
Staging

• Assessing extent of disease
  – T staging
    • Essentially image guided
  – N staging
    • Lymph node involvement
  – Metastatic disease
Surgical Procedures:

• Mediastinoscopy
  – Outpatient procedure, single incision
  – 1-2 hrs
Staging

- Video-assisted thoracoscopy
  - Lymph node involvement
  - Metastatic disease
  - Pleural spread
• Primary Resection
• Resection following neo-adjuvant chemoradiation therapy
• Palliative Resections
Resections

• Thoracotomy
Resection

- Thoracotomy
  - Mini-thoracotomy
- Video-assisted thoracoscopic lobectomy
- Robotic lobectomy
Surgical Resection controversies...

- Acute vs. Chronic pain
- Lymphadenectomy concerns
- Costs
- Learning curve
Palliation

- Diagnosis of metastatic effusions
- Management of malignant effusions
  - VATS talc pleurodesis
  - VATS PleurX catheter placement
  - VATS pericardial window
Surgical Procedures:

- Thoracoscopic (VATS) procedures
- Pleural biopsies
Surgical Procedures:

• Thoracoscopic (VATS) procedures
  Pericardial Window
Case Studies
Patient LI

- 71 year old man referred with Right Upper Lobe mass
  - 9 months history of cough
  - Past Medical History
    - Myocardial Infarction 2001
    - Hypertension
    - Hypothyroidism
    - Hyperlipidemia
Patient LI

- CT Scan
- 8x8 cm RUL mass
- Enlarged ipsilateral mediastinal LAD
Patient LI

- CT Scan
- 8x8 cm RUL mass
- Enlarged ipsilateral mediastinal LAD
Patient LI

- Bronchoscopy with washings demonstrated poorly differentiated SCCA
- EBUS of right lower paratracheal lymph node (N2) positive for malignancy
Patient LI

- Clinically staged as T3N2M0 – Stage IIIA
- Underwent Neoadjuvant Chemoradiation therapy (25/25 cycles platinum based)
- Poorly tolerated
  - Severe hyperglycemia CBGs of 1800
  - Multiple infections
  - Neutropenia

- Underwent CT scan 6 weeks later demonstrating reduction in mass size and mediastinal LAD
Patient LI

- Underwent repeat EBUS with biopsy of Right level 4: negative
- Indicated for surgical resection:
  - PFTs: FEV1: 104% predicted
  - Mediastinoscopy, Right thoracotomy, Right upper lobectomy, intercostal muscle flap bronchial buttress, mediastinal lymph node dissection

- Path:
  - 5.7cm RUL mass
  - 0/15 Lymph nodes positive for malignancy
  - Negative margins
  - No Lymphovascular invasion

- Downstaged to T2N0M0 stage 1
Patient RR

• 72 year old Walmart employee admitted with syncope. Recent ex-smoker.
• CXR demonstrated 8cm LUL mass
• Past Medical History:
  – Coronary artery disease s/p stents
  – Mitral valve prolapse
  – Hypothyroidism
Patient RR

- Underwent PET/CT imaging demonstrating large 7cm mass with max SUV of 13 and no mediastinal LAD
- Adrenal mass
- Bronchoscopy: well-differentiated adenocarcinoma
- EBUS: negative
- EUS: negative
Patient RR

- Indicated for surgical resection
- Mediastinoscopy, Left thoracotomy, left upper lobectomy, extrapleural resection, mediastinal lymph node dissection

- Path:
  - 10.8 x 4 cm Well differentiated adenocarcinoma
  - 0/7 lymph nodes positive for malignancy
  - T3N0M0 stage IIB Lung Cancer

- Postoperative chemotherapy