Interesting Case Conference

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7/15/13
History

• 44M no PMH, 6 pack year smoking Hx
• Recent post nasal drip/ sinus symptoms → coughing up blood
• Worsening cough, “turns purple”
• CXR - opacification of the left side of the chest
Chest CT

• CT - left upper lobe mass/mass-like consolidation occupying a large portion of the left lung apex

• Most suspicious for a primary bronchogenic neoplasm,
  – encases the left pulmonary artery, inseparable from the pericardium, pericardial and left pleural effusion.
Chest CT

- Enlarged left hilar, subcarinal, right upper and lower paratracheal, prevascular/anterior, mediastinal, and supraclavicular lymph nodes, compatible with metastatic disease.
Clinical DDx

• Bronchogenic carcinoma vs. granulamitous disease.

• Supraclavicular lymph node fine-needle aspiration and biopsy were performed.
Cell block was paucicellular but did contain a few cells for immunohistochemistry.
Synopsis of Diagnosis

• Positive for malignant cells. Poorly differentiated malignant neoplasm.
  – Cell block sparsely cellular
  – Rare EMA positive tumor cells that are ALK negative
  – DDx includes poorly-differentiated carcinoma or large cell lymphoma
  – Please correlate with concurrent biopsy and flow cytometry.
Core Biopsy

• A. Right supraclavicular lymph node, core biopsy: Malignant lymphoma best classified as peripheral T-cell lymphoma, not otherwise specified (PTCL, NOS). See COMMENT.
  – discohesive nests of pleomorphic, variably-sized cells with irregular nuclear contours and variably prominent nucleoli embedded in a collagenous stroma. Foci of necrosis are present. Immunohistochemical stains were performed. The neoplastic cells are positive for CD3 (weak) and CD5 (strong). CD20 marks rare B-cells. CD30 marks a small subset of cells. The cells are negative for CD1a, ALK-1 and TdT. In summary, this is a very small biopsy. However, the morphologic and immunophenotypic findings are best classified as PTCL, NOS.
Flow Cytometry

• Aberrant CD5+, CD7+ T-cells consistent with involvement by previously diagnosed peripheral T-Cell lymphoma, not otherwise specified.
• Comment: The major aberrant feature is the loss of surface expression of CD2, CD3, CD4, and CD8.
• Of note, the CD3 immunostain was positive in the biopsy but this may not necessarily represent surface expression which is being assayed via flow cytometry.
Anaplastic large T cell lymphoma (ALCL)

• Was not the diagnosis applied to our patient but deserves mention.
• Intermediate to large cell, pleomorphic, abundant cytoplasm
• CD30+, ALK + (nuclear and cyto in t(2;5) NPM;ALK), ALK stains more strongly in the larger cells.
• CD45+ 90%
• EMA +
• CD3 lost 75% time
• CD2,4,5,7 retained 70% of time.
ALCL growth patterns

- Classic
- Lymphohistiocytic (10%)
- Small cell (5-10%)
- Hodgkin-like (3%)
- Hypocellular
- Neutrophil rich
- Sarcomatoid
PTCL

• Diagnosis of exclusion
  – ALCL – ALK+, CD30, CD3 lost often
  – AITL
  – ATLL
  – TCRLBCL

• Often smaller cells than ALCL or DLBCL