A Rare Case of Obstructive Hydrocephalus: Metastatic Carcinosarcoma of the Lung

Michael W. Robinson MD PhD¹; Christopher P. Carroll MD¹; Mohammad N. Nazek MD²; Mark E. Magner MD¹,³

¹Department of Neurosurgery, University of Cincinnati; ²Department of Pathology, The Christ Hospital (Cincinnati, OH); ³Department of Neurosurgery, The Christ Hospital (Cincinnati, OH)
Disclosures

• The authors have no pertinent disclosures
Introduction

• Carcinosarcoma is a rare pathologic finding
  – Most commonly arises from mixed tumors of female reproductive tract

• Primary carcinosarcoma, or sarcomatoid carcinoma, of the lung is rarer still
  – 0.1-0.3% of all lung cancers; five-year survival approximately 20%; 7.25:1 male-to-female ratio; strong association with smoking
  – Most frequently solitary upper lobe mass

• Lung carcinosarcoma rarely metastasizes to the brain
  – 5 published case reports, typically hemispheric or dural-based
Methods

- **Retrospective Case Review**
  - Pathologic specimens submitted to outside academic pathology department for confirmation of diagnosis

- **PubMed Literature Review**
  - Search Terms: “Sarcomatoid Carcinoma”, “Carcinosarcoma”, “brain metastasis”
  - 3 citations in indexed English-language literature
  - 2 citations in indexed Japanese literature
    - One with English translation
Clinical Presentation

• 60yo male p/w 4 days of progressive confusion
  – Wife further reports slowing of speech and generalized lethargy, otherwise no complaints noted
  – No active medical issues prior to admission via ED
  – Former rare cigar smoker, last 1999
  – Pre-presentation KPS 90-100

• Neurologic exam unremarkable with exception of disorientation
Diagnostic Imaging

- **CT chest**: demonstrates 1.6cm lesion of left lower lobe and sub-centimeter LUL nodule

- **MRI brain**
  - T1-isointense, T2-hyperintense, homogeneously and avidly enhancing right tectal mass
  - Small focus of linear enhancement of posterior temporooccipital dura
  - Triventricular obstructive hydrocephalus
Management

- **Patient taken for CT-guided lung biopsy**
  - Institutional Pathology Evaluation
    - Gross: Malignant tumor consisting of neoplastic spindle-shaped cells with marked atypia and focal areas of malignant chondroid
    - Markers
      - Positive: Pankeratin/ CAM5.2 (focal), PTEN
      - Negative: P40, TTF1, ALK, PD-L1, RRM1, TOPO1, TUBB3
    - Consistent with primary lung carcinosarcoma
  - Ohio State University Pathology Evaluation
    - Cytologically malignant spindled cell neoplasm with focal chondromyxoid matrix production
    - Sarcomatoid carcinoma of the lung is favored
    - Chemotherapy with AIM (Adriamycin, Ifosfamide, Mesna) regimen
    - Adjuvant stereotactic radiosurgery

- **Ventriculoperitoneal shunt placement for obstructive hydrocephalus**
  - Complicated by distal catheter occlusion, doing well post-revision
Diagnosis & Conclusions

• Primary lung carcinosarcoma is rare; metastasates to the brain are exceedingly rare in the literature

• Case represents unique presentation of lung carcinosarcoma
  – First reported case of lung carcinosarcoma presenting due to neurologic symptoms
  – First reported case of tectal metastasis
  – First reported case with symptomatic obstructive hydrocephalus

• Prognosis of metastatic lung carcinosarcoma is poor
  – Chemotherapy regimen for management of primary lung lesions
  – In this case, CSF diversion for management of obstructive hydrocephalus.
  – Adjuvant stereotactic radiosurgery
References


