Endobronchial Granular Cell Tumor: A Rare Entity

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Case Presentation
- 54 year old female with a past medical history of COPD on 4 liters of oxygen, diabetes, coronary artery disease and hypothyroidism presented with worsening shortness of breath.
- Review of systems was positive for shortness of breath and cough productive of scant whitish-colored sputum.
- 40 pack year smoking history.

Physical Examination
- Vitals: BP: 127/75    Pulse: 99/min     Temp: 98.4    RR: 18
- Pulse ox: 90% on 4 liters O2
- HEENT: mild oro-pharyngeal erythema
- PULM: diffuse expiratory wheezing bilaterally both anteriorly and posteriorly
- The rest of the physical exam was unremarkable.

Laboratory Data
- Na: 139
- K: 3.7
- Cl: 100
- HCO3: 32
- Glucose: 178
- BUN/Cr: 17/0.74
- WBC: 14.3
- H/H: 15.1/45.6

Imaging
- CXR: Mild apical fibro nodular scarring.
- High Resolution CT scan showed a wedge – shaped opacity in the medial left upper lobe.

Clinical Course
Patient continued to have increasing shortness of breath, cough and wheezing along with increasing oxygen requirements despite appropriate treatment, which included nebulizer treatments, antibiotics and steroids.

Bronchoscopy
Revealed an endobronchial whitish growth at the subcarina. Biopsies were obtained.

Pathology
- Histology:
  - Bland appearing eosinophilic cells within the endobronchial submucosa
- Immunohistochemistry:
  - Cells had intact nuclear to cytoplasmic ratio and immunohistochemical stains were positive for CD56, S-100 and vimentin
- Diagnosis:
  - Endobronchial GCT

Background
- Granular cell tumors are benign neural tumors that arise from Schwann cells, first described in 1926.
- Mostly located in the head and neck region, skin and subcutaneous tissues.
- Granular cell tumors of the lung are extremely rare, comprising 0.2% of all pulmonary neoplasms.
- Less than 100 cases of granular cell tumors in the endobronchial location have been reported.

Discussion
- Endobronchial granular cell tumors are extremely rare, 2-6% occur in the lung, and of these, 90% are endobronchial.
- Patients with benign endobronchial tumors may present with cough, dyspnea, wheezing, hemoptysis, and post obstructive pneumonia.
- Chest radiographs may be completely normal.
- Malignant granular cell tumors have also been reported.
- Endobronchial ablation using argon plasma coagulation is the current treatment of choice with special emphasis on bronchoscopy for follow up due to the risk of recurrence.

References