Primary Pulmonary Amyloidosis Mimicking Primary Lung Cancer

Suneet Pahwa, MD, Mark Napier, MD, Marc A. Judson, MD

Albany Medical College; Department of Medicine; Division of Pulmonary/Critical Care Medicine, Albany, New York

Case Presentation

Initial Presentation

- 69 year old woman.
- Abnormal chest CT scan of chest for lung cancer screening: spiculated left lower lobe pulmonary nodule, 1.5 x 1 cm (Fig. 1).

Past Medical History/Review of Systems

- COPD: 75 pack years history of smoking.
- Nasal Polyposis, GERD.
- Patient denied any hemoptysis, weight loss, chest pain, loss of appetite, cough.

Further Course

- PET scan: minimal increased FDG uptake with a max SUV of 1.9 (Fig. 2). There was no evidence of a high-uptake lesion anywhere else in the body.
- Given the low SUV uptake (which can happen in inflammatory disorders) and that patient had recent pneumonia it was decided to follow it radiographically.
- 3 months and 6 months chest CT scans: stable size and shape of nodule.
- At 18 months: increase in size to 2.0 x 1.4 cm (Fig. 3) with lobulated margins.
- Trans-thoracic needle biopsy of nodule: amorphous, homogeneous material with a few lymphocytes on H&E staining (Fig. 4). Congo red staining was positive (Fig. 5), that confirmed amyloid deposition. Congo red polarized light: apple-green birefringence (Fig. 6).
- Diagnosis: primary nodular parenchymal pulmonary amyloidosis.
- The patient is good clinical condition 1 year later.

Discussion (continued)

- Radiologically, primary nodular parenchymal pulmonary amyloidosis may appear as single (60%) or multiple nodules (40%) in any lobe with random distribution, usually mimicking neoplastic growth.
- Nodules range in diameter from 1 to 4 cm, with 15 cm being the largest nodule reported in the literature (about 19 articles are identified from 1970-2011). 80% are smooth, 20% spiculated.
- Usually low maxSUV uptake (<2.5) and slow growth over 24-60 months.
- Nodular parenchymal amyloidosis rarely requires treatment, which may involve surgical resection if a large nodule causes a space occupying effect.
- Majority of patients with a nodular parenchymal pattern have an excellent prognosis on follow-up.

Conclusion

- Primary nodular parenchymal pulmonary amyloidosis is a cause of lung nodule(s) that may be slow growing, weakly PET positive, and may occasionally be spiculated.
- Lung biopsy is required for diagnosis of primary nodular pulmonary amyloidosis.
- Nodular pulmonary amyloidosis is characterized by a benign course. It almost never requires surgical resection of all lesions or chemotherapy. It is not associated with systemic amyloidosis.

References

