NYU Langone Health

DEPARTMENT OF PATHOLOGY

Case of the Week

Thoracic Pathology: Amyloidoma

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History

This patient is an elderly male without significant medical history who was injured in an accident and was taken to the Emergency Department. During the workup, a CT scan of the chest found incidental mediastinal lymphadenopathy. An endobronchial ultrasound guided biopsy of mediastinal lymph nodes was performed during a follow-up visit. See biopsy below labelled as "lymph node biopsy":

Pathology Findings

Biopsy show hyalinized dense eosinophilic material with scant cellularity (occasional histiocytes and plasma cells)

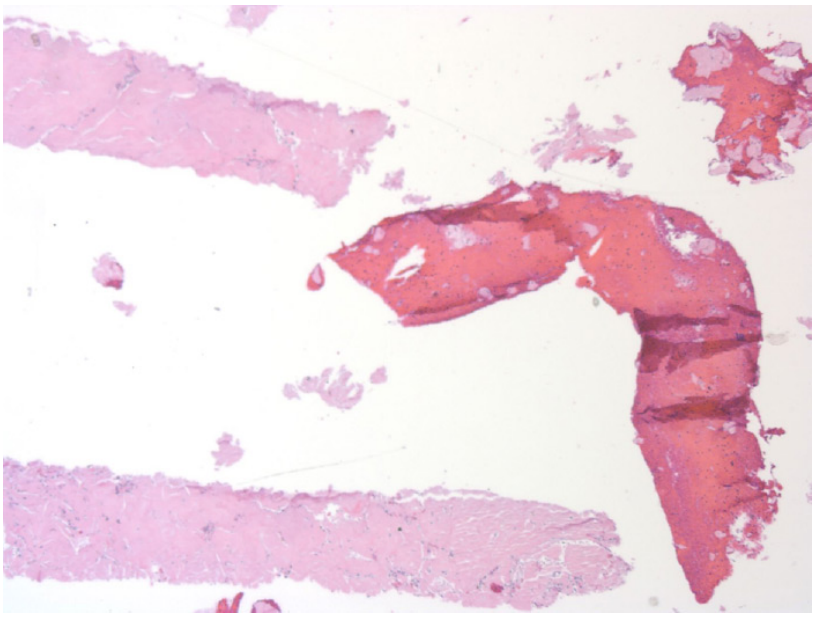

Fig 1: Mediastinal lymph node EBUS biopsy, low magnification (40 X; H&E)

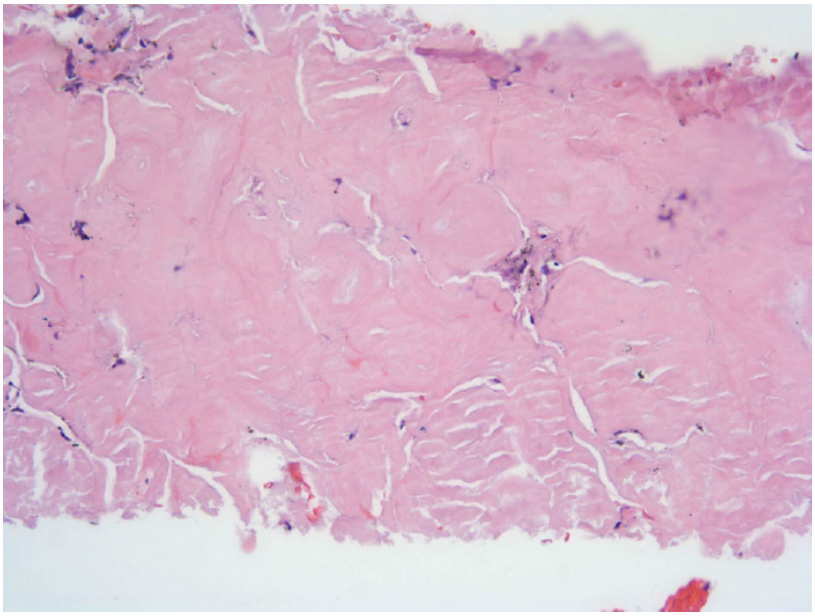

Fig 2: Mediastinal lymph node EBUS biopsy (400 X; H&E)

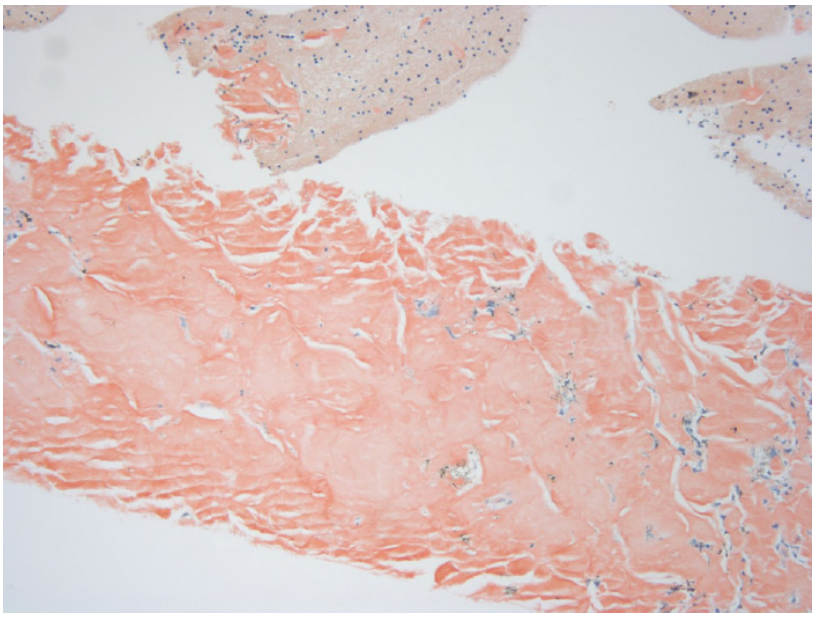

Fig 3: Congo red stain shows bright orange coloration under routine bright filed examination - standard conditions (200 X; Congo red)

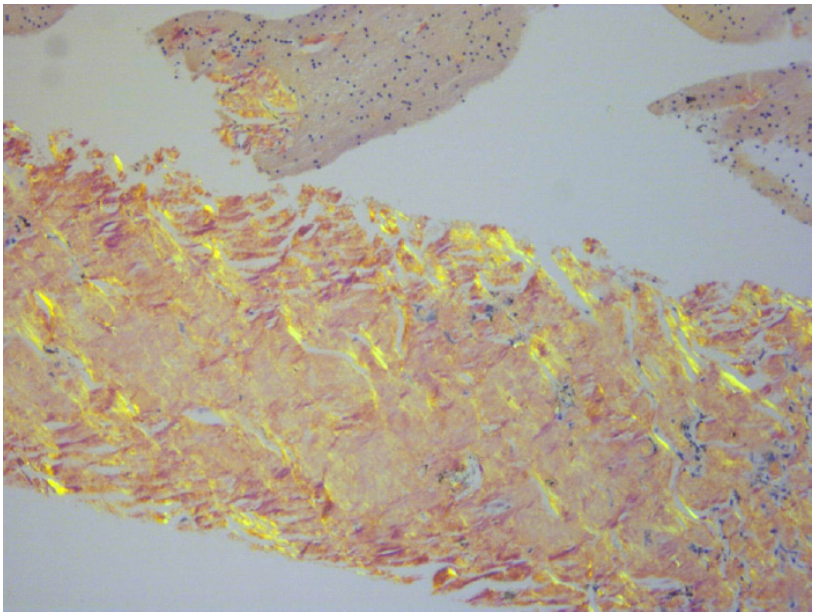

Fig 4: Congo red staining under polarized light shows classic "apple green" birefringence (200 X; Congo red)

Questions: What is differential diagnosis?

What special stain may be used to confirm/ establish diagnosis?

Differential diagnosis

Fibrous tissue (hyaline change) versus amyloid

Special stains:

Congo red and trichrome

Diagnosis

Amyloidoma

Discussion

Amyloid refers to the extracellular deposition of insoluble proteins; this deposition may be localized to one area or systemic. Causes of systemic amyloidosis range from infections, genetic mutations, and clonal B-cell proliferations such as plamacytoma or multiple myeloma[1]. The gold standard for diagnosis remains observing apple green birefringence of the material on a Congo red stain. Further differentiation by identifying the specific protein which is depositing in the tissue may be done to help identify the cause of the amyloid[2]. Common specimens where amyloid may be suspected include along vessel walls in almost any tissue, in the lungs, or in abdominal adipose tissue. Local amyloid deposition in the lung, referred to as an amyloidoma or amyloid tumor, is relatively rare but which may present as single or multiple lung nodules on imaging, raising concern for lung carcinoma[3].

When amyloid is identified, clinical workup should be undertaken to rule our systemic amyloid (and exclude plasma cell neoplasm) and to evaluate for any resulting organ damage.

References

1. Berk JL, et al. “Amyloidosis.” Merck Manuals Professional Edition. 2017.

2. Lachmann HJ, Hawkins PN. “Amyloidosis and the lung.” Chron Respir Dis. 2006;3(4):203-14.

3. Barešić M, Sreter KB, et al. “Solitary pulmonary amyloidoma mimicking lung cancer on 18F-FDG PET-CT scan in systemic lupus erythematosus patient.” Lupus. 2015 Dec;24(14):1546-51.