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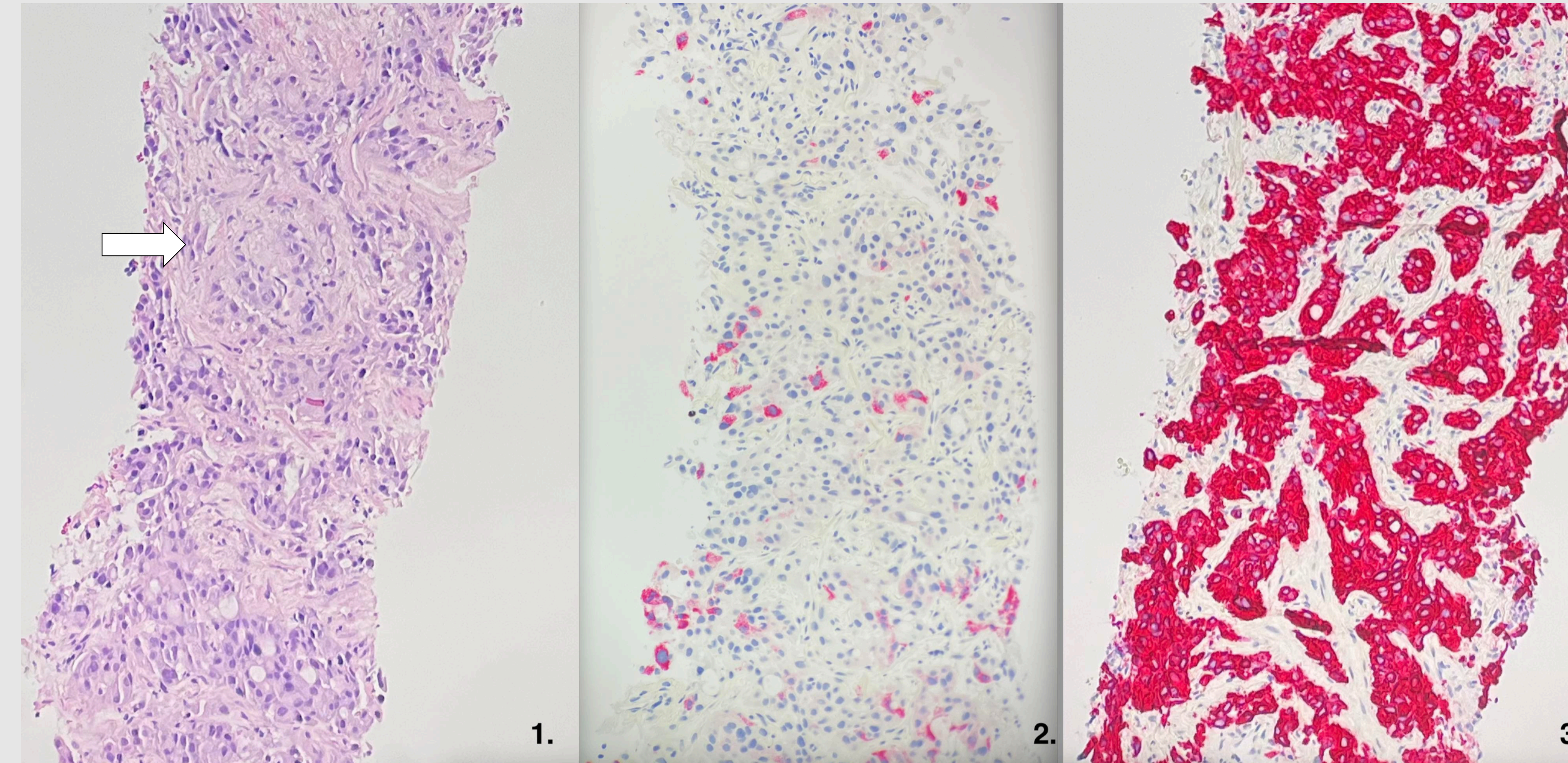
## Introduction

- Hepatoid adenocarcinoma of the lung (HAL) is a rare lung carcinoma that resembles hepatocellular carcinoma of the liver (HCC) on histology.
- Immunohistochemical staining distinguishes the two.
- This is a case of HAL in which treatment targeting HCC achieved significant response.

## Patient Description

- A 69-year-old male with a history of tobacco use presented with pathologic weight loss.
- Past medical history included a 25-pack year history of smoking, distant history of sarcoidosis, and GERD with Barrett's esophagus.

## Pathology of Pulmonary Nodule Core Biopsy



- The hematoxylin and eosin stain showed poorly differentiated polygonal cells containing eccentrically located nuclei and abundant eosinophilic cytoplasm with cells arranged in solid nests (arrow) suggestive of hepatocellular carcinoma. (1)
- However, given the patient's lack of risk factors for HCC and incongruent findings on CT and PET, further analysis was performed with immunohistochemical staining
- The positive hep-par stain supported the diagnosis of HCC. (2)
- Cytokeratin-7 stain diffusely positive confirmed lung as the primary tumor site. (3)
- The diagnosis was then changed from HCC to HAL.

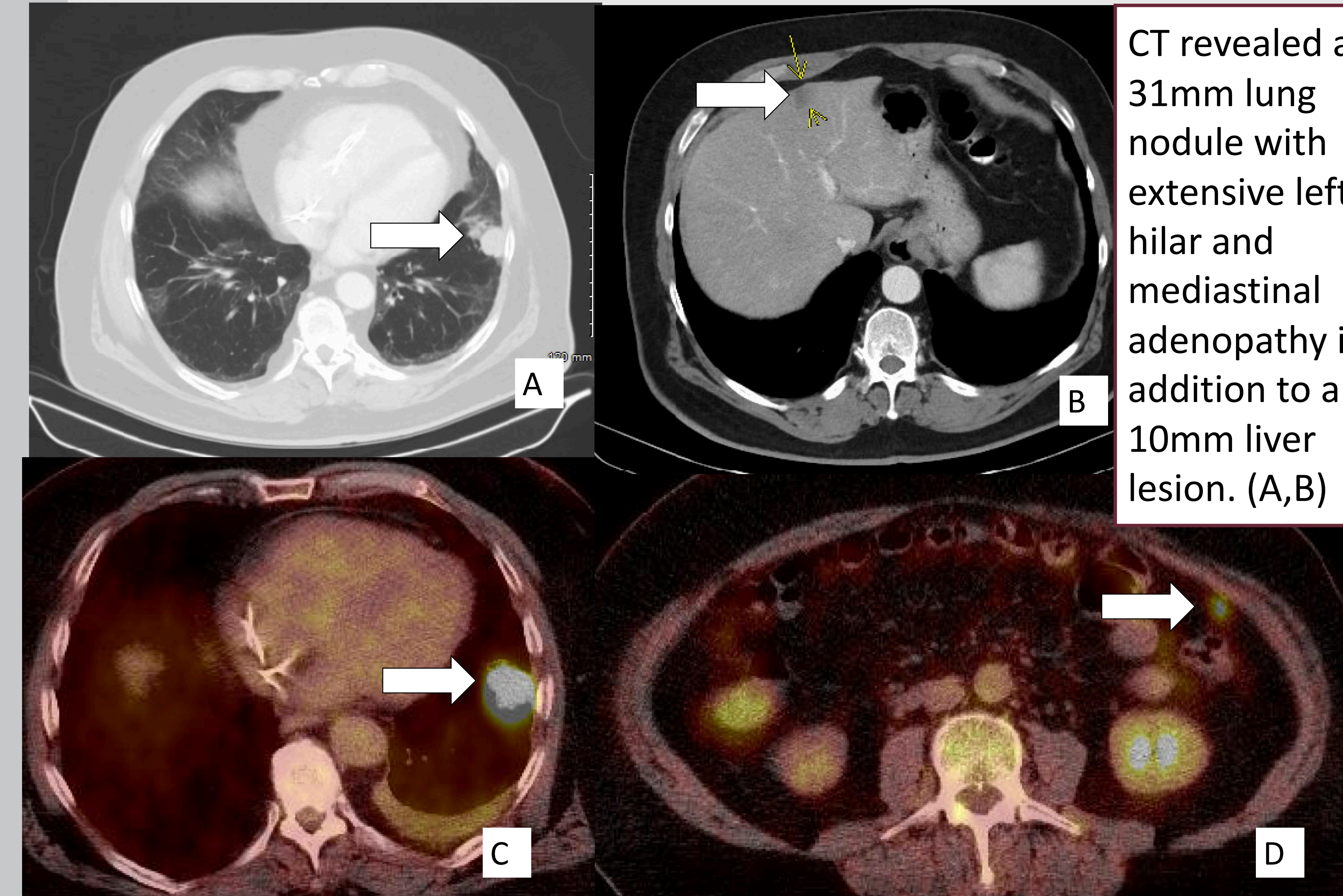
## Patient Course

- The patient received two cycles of immunotherapy with atezolizumab and bevacizumab which led to resolution of metastatic mediastinal lymphadenopathy and reduction in the primary lung tumor.
- Therapy was continued for two additional months until new onset back pain triggered repeat CT scan which showed diffuse mediastinal metastases throughout the spine.
- Treatment was changed to carboplatin and Taxol, but the patient only received one cycle before transitioning to hospice care.

## Discussion

- This case highlights a unique pathology to be considered when histology suggests HCC but the diagnosis does not fit the clinical scenario.
- HAL resembles HCC histologically; in both there are cells with abundant eosinophilic cytoplasm arranged in sheet-like portions.
- Immunohistochemical staining differentiates between the two. While Hep-Par stains are positive in both HCC and HAL, only cytokeratin-7 stains are positive in HAL, as in our case.
- The prognosis for HAL is poor. Partial response of advanced disease has been reported with platinum-based chemotherapy.
- This case is unique in that there was a significant response to atezolizumab and bevacizumab. While this regimen was chosen to target HCC, it was initially effective against this case of HAL. This case gives valuable insight into possible therapeutics for this rare cancer.

CT revealed a 31mm lung nodule with extensive left hilar and mediastinal adenopathy in addition to a 10mm liver lesion. (A,B)



PET-CT confirmed a hyper-metabolic lung nodule. (C)  
On PET-CT, the only evidence of intra-abdominal disease was a small, hyper-metabolic soft tissue nodule in the omentum suggestive of a single metastatic focus. (D)