

## A Case of Metastatic Clear Cell Carcinoma of the Lung

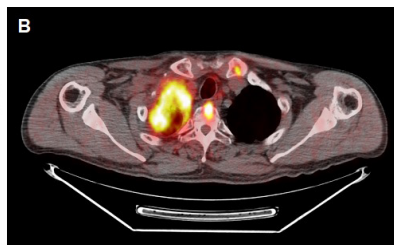
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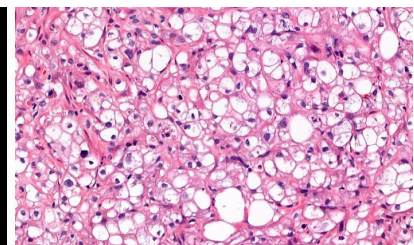
**Introduction:** Clear cell carcinoma is common in renal, ovarian and uterine tumors, but extremely rare in lungs. We report a case of metastatic clear cell lung cancer with its radiologic and histological characteristics.

**Case:** A 60-year old male was referred to our institute after a biopsy of bronchus suggesting poorly differentiated carcinoma of clear cell type with wild-type EGFR. He had backache in upper thoracic T4 level and tingling sense in both arms for 2 months. He had no other comorbidity, but was current smoker of 40 packs-of-year, consumed alcohol daily since he was 20-year old. Chest enhanced CT and PET-CT scans showed a soft tissue mass in right upper lung with chest wall invasion and destruction of adjacent ribs, which suggested primary lung cancer (Figure 1). Multiple nodules in both lung parenchyma, right pleural effusion, osteolytic bone lesions in sternum, vertebrae and pelvis, and lymph node enlargement in supraclavicular, paratracheal, prevascular, subcarinal regions were noted as metastases. And there was a subtle low attenuation, focal hypermetabolic lesion in pancreatic body, considered as a metastatic lesion in pancreas. Abdominal CT scans showed no evidence of renal or adrenal disease. Additional supraclavicular lymph node biopsy was done in order to confirm pathologic and immunopathological diagnosis. The tumor was characterized by large polygonal tumor cells with abundant clear and eosinophilic cytoplasm, which is unusual in primary lung adenocarcinoma (Figure 2). Immunopathology showed positive cytokeratin 7 and focal positive CA9 and p63, but negative results on others (Table 1). After exclusion of differential diagnoses, he was diagnosed with stage IV non-small cell lung cancer and started to receive palliative chemotherapy with paclitaxel and carboplatin since 1st July 2021.

**Conclusion:** Clear cell carcinoma of the lung is an extremely rare diagnosis with poorly understood etiology. Diagnostic features are not widely known, the diagnosis should be done carefully considering differential diagnosis. Further studies are needed to establish guidelines for diagnosis and optimal treatment.



**Figure 1.** Chest computed tomography (A) and positron emission tomography (B) scan with right upper lobe mass.



**Figure 2.** Histopathological examination shows diffuse rounded or oval cells with abundant clear cytoplasm and distinctive cell borders. (Hematoxylin and eosin, ×400 magnification)

Item	Result	Item	Result
c-met	Negative	CDX2 (other)	Negative
TTF-1	Negative	PDX1	Negative
CD10	Negative	S-100 PROTEIN	Negative
Vimentin	Negative	INSM1	Negative
CA9	Focal positive	Cytokeratin 7	Positive
Cytokeratin-Pan	Positive	Cytokeratin 20	Negative
AMACR	Negative	p63	Focal positive
RCC	Negative	CA19-9	Negative
PAX8	Negative		

**Table 1.** Immunohistopathology shows positive Cytokeratin-Pan and 7, focal positive CA9 and p63, but negative results on others.