



Uncommon Skeletal Muscle Presentation of Lung Adenocarcinoma

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Introduction

Lung cancer is the most common type of cancer with the highest incidence and mortality and leading cause of cancer death in United States. Common symptoms at presentation are pulmonary in nature or from regional mass effect to nearby nerves and structures of the chest. This is a patient who presented with muscle metastases.

Case Presentation

71-year-old man with a history of hepato-cellular carcinoma status-post ablation, chronic kidney disease stage 4, schizophrenia, presented with worsening dyspnea for 3 weeks. He was recently admitted to an outside hospital for left leg pain, which was diagnosed as DVT and was started on apixaban, which the patient did not continue. Patient's history was significant for 35 pack years of smoking, former alcohol and cocaine use disorder, and family history of siblings who passed away from unknown cancer.

On exam he had decreased breath sounds over the left chest, tenderness in the left calf and in the left thenar muscle. Chest X ray demonstrated a large left pleural effusion (figure 1).

Pleural fluid cytology (figure 2) showed metastatic poorly differentiated adenocarcinoma of the lung. Bronchoscopy showed normal respiratory epithelium. Subsequent CT chest showed underlying centrilobular emphysema without a mass.

Doppler study of the left leg showed a mass. Further CT imaging demonstrated a 8 cm x 4.5 cm by 5 cm of a calf muscle mass (figure 3). Biopsy of calf muscle showed metastatic adenocarcinoma of lung (figure 4). Staging FDG PET scan showed uptake in left ventricle (figure 5), and a heterogenous mass in left thenar muscle measuring 2.9 x 2.6 x 2.9cm. Tissue was sent for further analysis (Foundation), which showed 10% PD-1 and no actionable mutations.

The patient received treatment but his disease progressed and he died 6 months later.

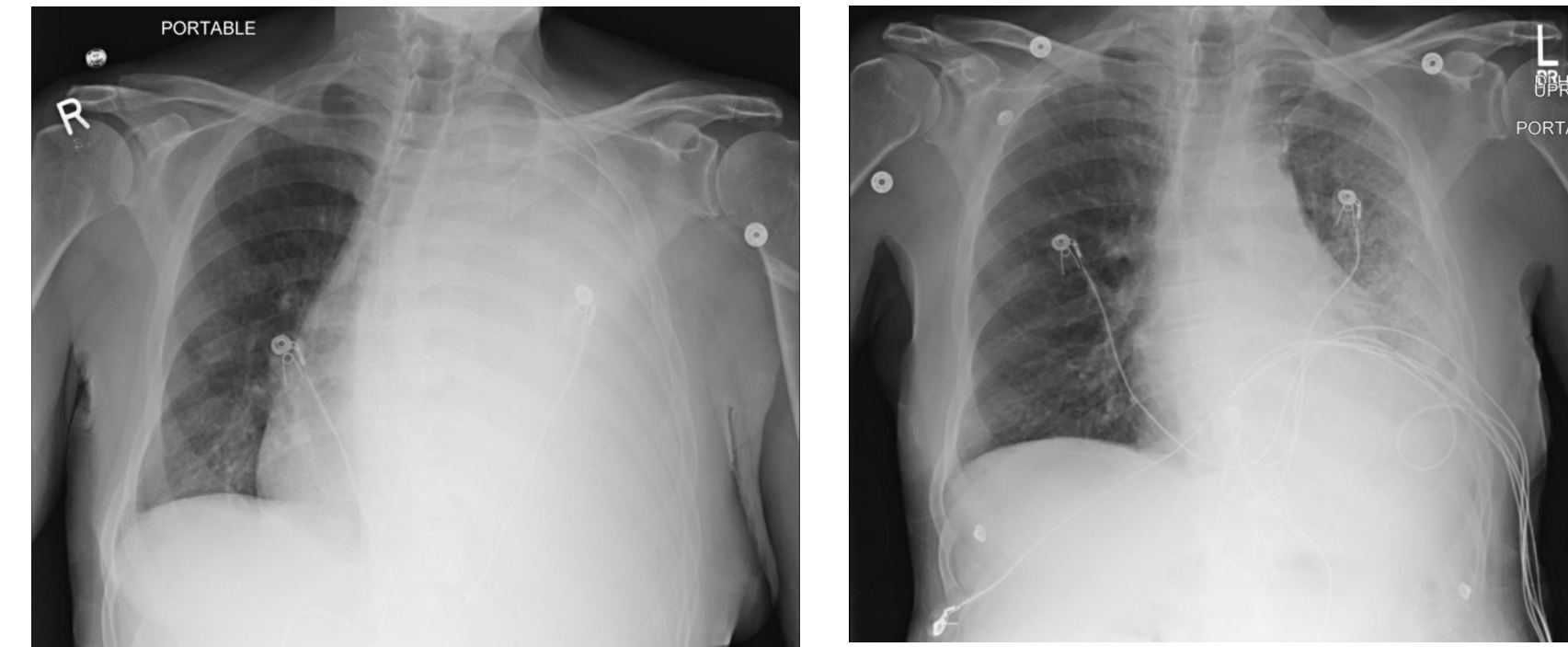


Figure 1. (Left) Opacification of left hemi-thorax on presentation. (Right) Subsequent chest x-ray after chest tube drainage.

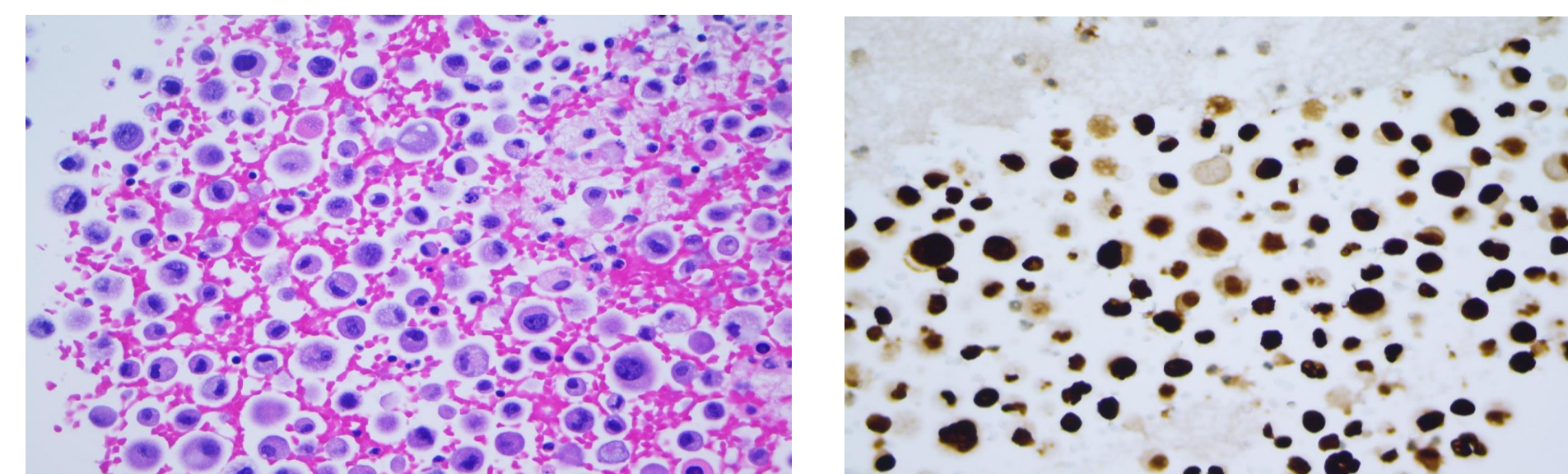


Figure 2. H&E stain (left) of pleural fluid cytology and atypical cells are positive for TTF-1 (right) shows metastatic poorly differentiated adenocarcinoma of the lung.

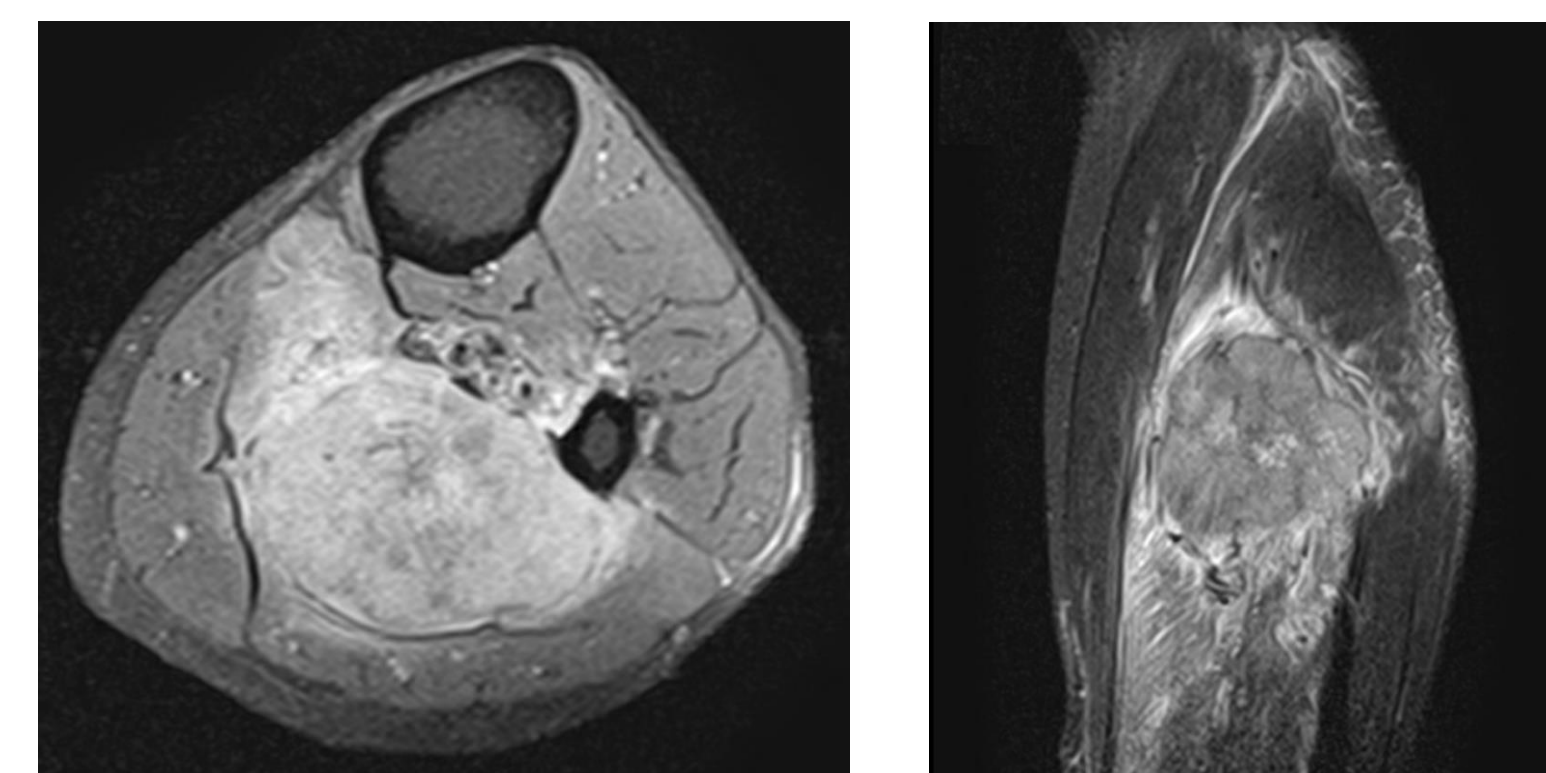


Figure 3. Axial view of calf muscle metastasis of lung adenocarcinoma (left). Posterior sagittal view of calf mass (right).

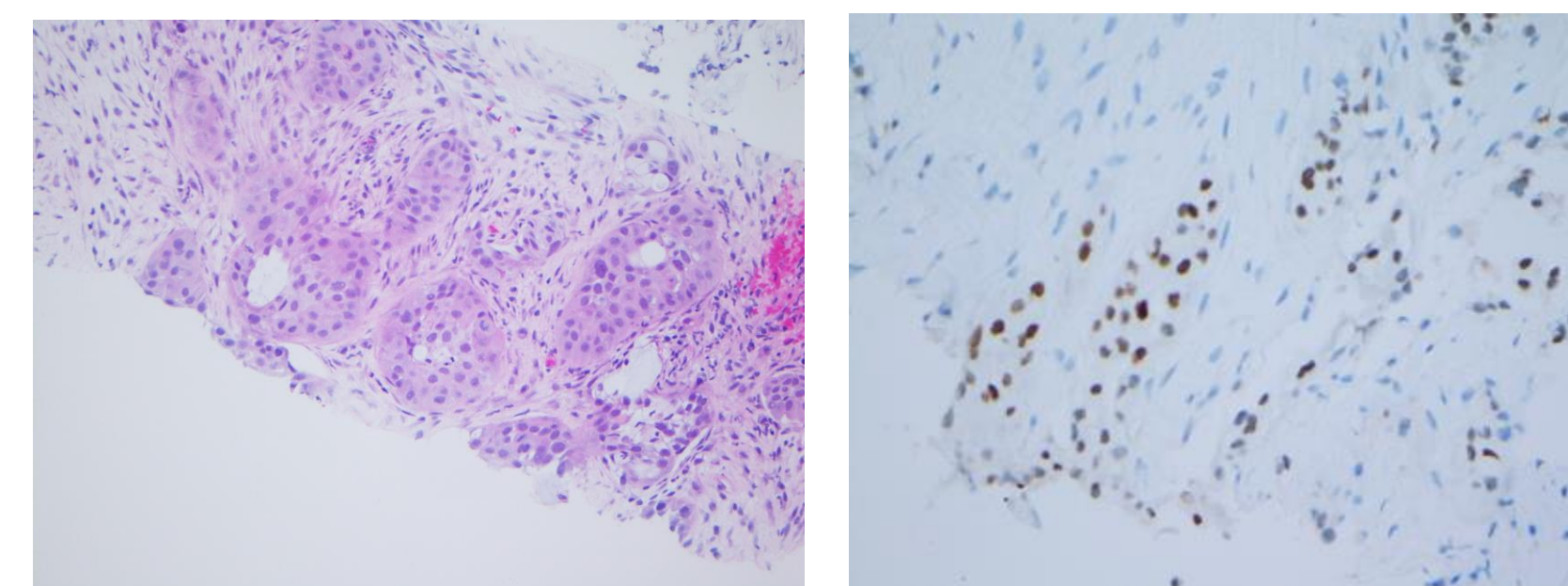


Figure 4. H&E stain of calf muscle biopsy (left). Immunohistochemistry confirms tumor positive for TTF-1 (right), p63 and CK7 confirming metastatic lung adenocarcinoma.

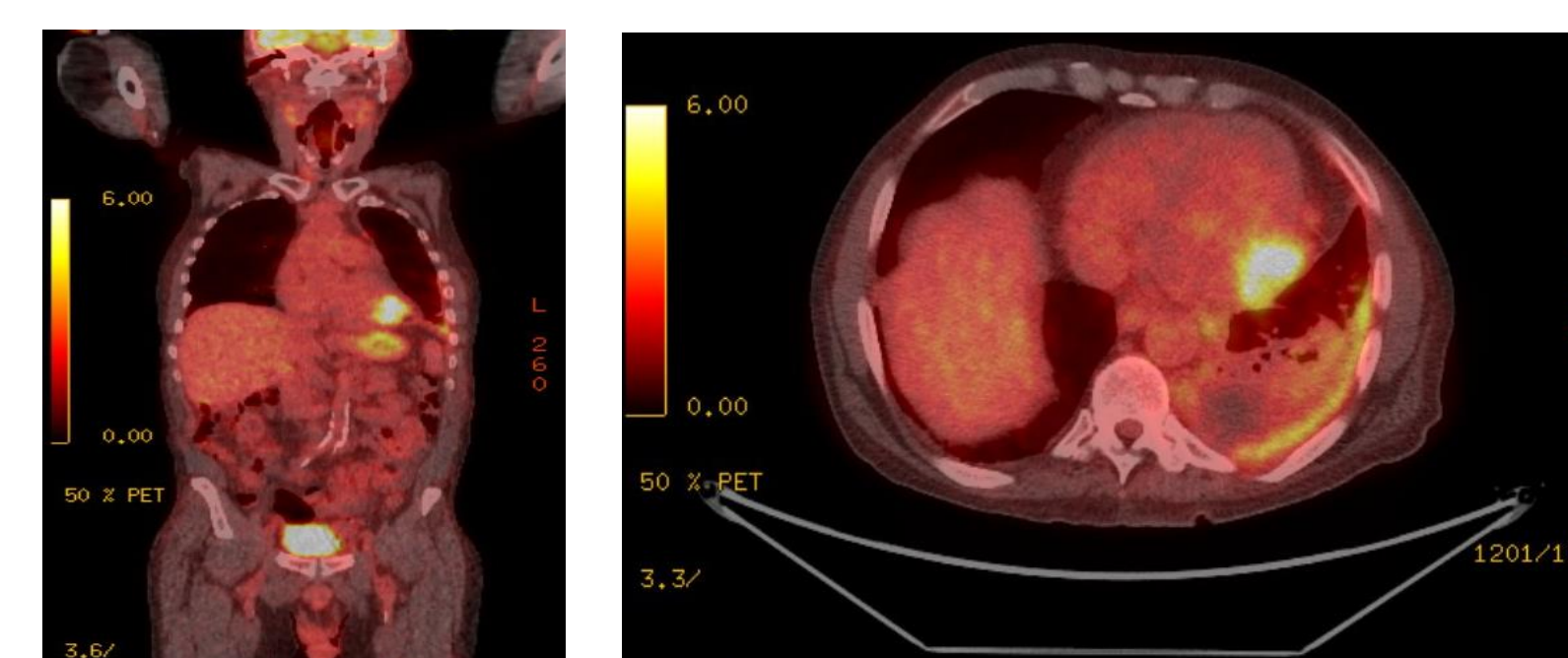


Figure 5. Coronal view (Left) and axial view (Right) of PET-CT scan of FDG uptake of metastatic lung adenocarcinoma in left ventricle of the heart.

Discussion

The most common sites of lung cancer metastases are in the order of liver, adrenal glands, and bones³. Soft tissues including skeletal muscles are rare sites for metastasis with studies showing 0-0.8% of muscular metastases and 0.75-0.9% on autopsy series⁴. 5-year survival rate decreases by more than 14-fold for patients with distant metastasis at diagnosis compared to those with localized disease at diagnosis¹.

Conflicts of interest/Consent

Authors have no conflicts of interest to declare.

Written informed consent was obtained from the patient for publication.

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