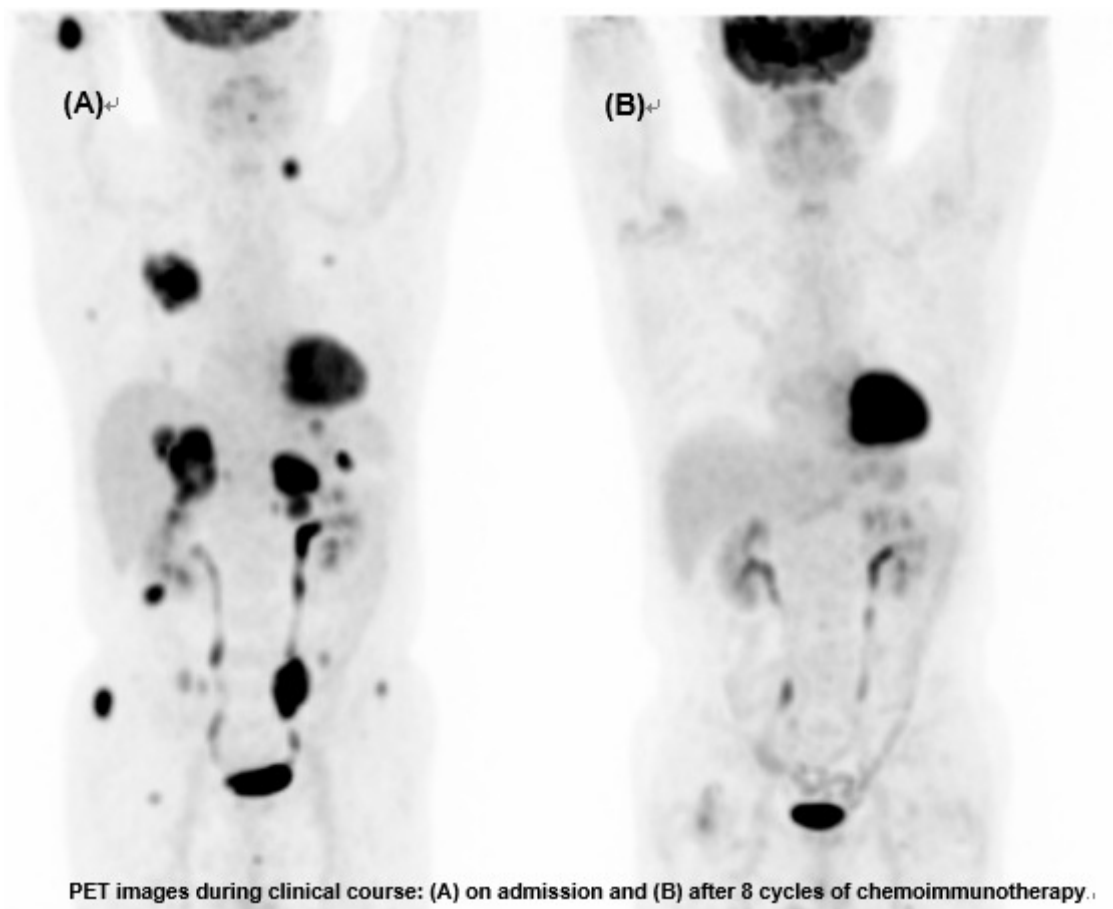


## Dramatic Response to Chemoimmunotherapy in Metastatic Pulmonary Spindle Cell Carcinoma: A Case Report

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Pulmonary spindle cell carcinoma, a rare subtype of non-small cell lung cancer (NSCLC), has exhibited resistance to conventional cytotoxic chemotherapy. Despite the widespread use of immune checkpoint inhibitors in the treatment of lung cancer, the efficacy of immunotherapy, with or without chemotherapy, remains uncertain for this specific subtype. Here, we present a case of a 63-year-old male patient with metastatic pulmonary spindle cell carcinoma who exhibited a dramatic response to chemoimmunotherapy. The patient initially presented with lower back pain, and imaging studies revealed a 6.6cm-sized spiculated mass in the right upper lobe, accompanied by multiple metastatic lesions in the lung, liver, adrenal glands, iliac bone, and soft tissues. Driver mutation analysis was negative, but programmed death-ligand 1 (PD-L1) expression was high (100%). The treatment plan consisted of pembrolizumab and pemetrexed plus carboplatin as an initial therapy. Subsequent response evaluations demonstrated significant shrinkage of both the primary mass and most metastatic lesions. Notably, positron emission tomography revealed the complete disappearance of all metastatic lesions except the primary tumor. Following multidisciplinary discussion, the patient underwent lobectomy, which confirmed pathologic complete remission. Pembrolizumab and pemetrexed were continued post-surgery, and the patient has been maintained without disease progression during outpatient follow-up. This case highlights the potential efficacy of chemoimmunotherapy as an optimal treatment option for pulmonary spindle cell carcinoma, encouraging further investigations into this rare lung cancer subtype.



PET images during clinical course: (A) on admission and (B) after 8 cycles of chemoimmunotherapy.