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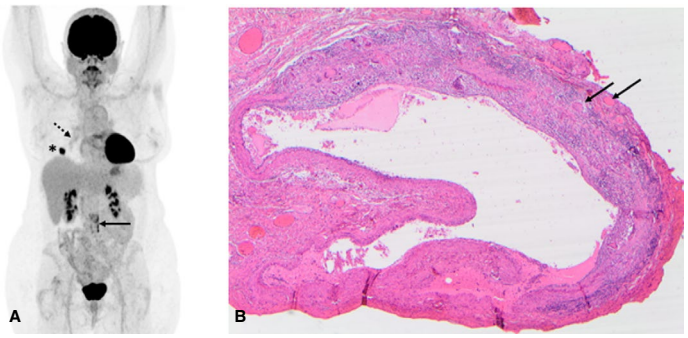
Clinical Images: Pulmonary Arteritis in Clinically Occult Aneurysmal Giant Cell Arteritis



A 56-year-old Caucasian woman was investigated for cough. Computed tomography (CT) of the chest revealed a spiculated 210-mm right lower lobe lung nodule. ^{18}F-fluorodexyglucose (FDG) positron emission tomography (PET) performed for diagnostic and staging purposes incidentally revealed increased FDG avidity in the wall of the aorta (maximum standard unit value [SUVmax] = 7.9; solid black arrow in **A**) as well as the lung nodule, (SUVmax = 16; asterisk in **A**). Further evaluation by CT aortogram and ultrasound demonstrated a 46-mm fusiform aneurysm of the thoracoabdominal aorta with asymmetrical wall thickening. She was asymptomatic from a vasculitis perspective with no active or historical clinical features of giant cell arteritis (GCA), Takayasu arteritis, IgG4, or Behcet disease. Inflammatory markers were normal, with a C-reactive protein concentration of 0.1 mg/dl and erythrocyte sedimentation rate of 23 mm/h. Serology for infectious aortitis, including syphilis, human immunodeficiency virus, viral hepatitis, and latent tuberculosis, was negative. Autoimmune testing, including antineutrophil cytoplasmic antibodies, antinuclear antibodies, rheumatoid factor, and serum IgG4 levels, was within normal range. The patient underwent definitive management with a right lower lobectomy. Histopathology demonstrated a moderately differentiated pulmonary adenocarcinoma without lymph node invasion as well as features of GCA within the pulmonary arteries. The artery wall demonstrated numerous multinucleated giant cells (black arrows in **B**) within the media and transmural lymphocytic infiltrate with disruption of the elastic lamina. In light of this finding, retrospective analysis of her FDG-PET scan showed increased tracer uptake within the right pulmonary arteries (dashed arrow in **A**). Subsequently, she was commenced on prednisone and methotrexate for occult large vessel GCA. Aortitis has been described in conjunction with myelodysplastic disorders, but there does not appear to an association between large vessel vasculitis and solid organ malignancy (1). Furthermore, to our knowledge, pulmonary arteritis has not been previously documented in patients with lung adenocarcinoma. In contrast, noninflammatory abdominal aortic aneurysms may be seen at higher rates in patients with lung cancer because of shared risk factors (2). The case illustrates that clinically occult, isolated aortitis may reflect a more diffuse systemic arteritis. This may explain the propensity for long-term aneurysm formation in patients with clinically isolated aortitis (3). FDG-PET protocols assessing for large vessel vasculitis should include assessment of pulmonary arteries.

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