Interesting images

Detection of vascular malformation mimicking lung mass in $^{18}$F-FDG PET/CT

Detección de una malformación vascular que simula una masa pulmonar en $^{18}$F-FDG PET/TAC

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A 55-year-old female patient presented with dyspnea, cough and chest pain. An abnormal mass-like lesion in the left upper pulmonary lobe was detected on chest X-ray (Fig. 1). There was no significant abnormal change in patient’s physical examination and laboratory tests. Patient was referred to our center for investigation of lung nodule with Positron Emission Tomography/Computed Tomography (PET/CT). $^{18}$F-FDG PET/CT scan showed a FDG uptake lesion (SUVmax 1.8) in the left lung upper lobe similar to the blood pool activity (SUVmax 2.0); this lesion was located close to normal vascular structures (aorta and pulmonary artery) (Fig. 2B and D). Contrast-enhanced CT reported a vascular malformation (VM) and discovered the relationship between the lung lesion and the vascular structures (Fig. 2A and C).

The vascular abnormalities were classified into two categories as hemangiomas and vascular malformations (VM). VM is characterized with various dysplastic vessels without endothelial proliferation and mostly solitary. Although VM are usually present at birth, they may manifest at any age and may localize in any part of body. Some of VM such as present superficially, can be determined easily, others especially deeper lesions are detected hardly.1 Besides VM discrimination from other lesion (mass-like others) is very important for therapy design. Ultrasound, computed tomography, nuclear medicine imaging methods, angiography, and magnetic resonance imaging are essential to confirm the diagnosis, evaluate detailed morphology and planning treatment of VM.2 Contrast-enhanced CT scan is an available diagnostic modality in patients with abnormal chest X-ray suspicious of VM.3 In conclusion, a diagnosis of vascular malformation should be considered in the presence of a low $^{18}$F-FDG uptake lesion on PET/CT scan.

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Fig. 2. In the $^{18}$F-FDG PET/CT scan, the uptake of the lesion in the left lung upper lobe was similar to the blood pool activity and not suggested of malignancy (A and C); the lesion was located close to vascular structures (B and D).

References

