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IMAGE OF THE MONTH

Active inflammation in ^{18}F-methylcholine PET/CT

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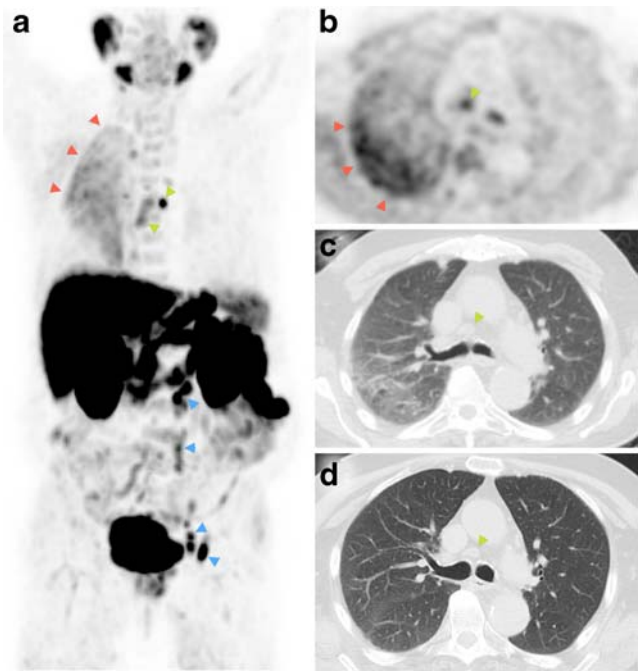
^{18}F-Methylcholine (FCH) is a marker of proliferation that can be used for the detection and (re)staging of prostate cancer [1, 2]. A 78-year-old male with T3G3 prostate cancer (PSA 47 μg/l, nadir PSA 2.2 μg/l with LHRH treatment) and rising PSA (4.8 μg/l) was referred for restaging with FCH PET/CT. Images obtained 30 minutes after injection (**a**, **b**) demonstrated choline-avid nodal metastases in the left parailiac and paraaortal regions (*blue arrowheads*). In addition, the upper lobe of the right lung showed diffuse FCH uptake with SUV_{mean} 3.0 (*red arrowheads*) and diffuse infiltration on low-dose CT (**c**). Several enlarged mediastinal lymph nodes showed uptake as well (*green arrowheads*). Pulmonary infection with reactive nodes was suspected, but we were unable to discriminate them from mediastinal prostate cancer metastases.

In retrospect, the patient had been coughing for several weeks but had no other symptoms. Bronchial lavage revealed legionellosis. After 3 weeks treatment with ciprofloxacin the pulmonary infiltration had disappeared completely on the CT scan (**d**), confirming the inflammatory origin of the choline uptake. However, the enlarged mediastinal lymph nodes persisted. No further investigations of the mediastinum were performed because of the age and prognosis of the patient, and the origin of the enlarged nodes remained uncertain.



As previously suggested by animal experiments [3], active infection can be choline-avid. Our case demonstrates that this can even occur in a diffuse and clinically indolent infection. We conclude that, as in FDG PET imaging, when active infection is suspected, adequate antimicrobial treatment should precede FCH PET/CT to avoid compromised imaging of oncological disease.

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