



Beyond Covid-19 vaccination-associated pitfalls on [¹⁸F] Fluorodeoxyglucose (FDG) PET: a case of a concomitant sarcoidosis

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Reports are rising of patients with unilateral axillary lymphadenopathies after Covid-19 vaccination highly uptaking at FDG-PET/CT scans [1–9].

A 44-year-old male underwent cardiac magnetic resonance (CMR, panel A) and computed tomography coronary angiography (CTCA, panel B) for coronary artery disease diagnostic workup. Both scans incidentally revealed enlarged left axillary, mediastinal, and right hilar lymph nodes (stations 4R, 7, and 11R, maximum diameter 3 cm). Panel A represents the turbo STIR axial image of the mediastinum, while Panel B represents the CTCA axial image showing the enlarged left axillary lymph nodes. FDG-PET/CT was performed to identify targets for ultrasound-guided transbronchial needle aspiration.

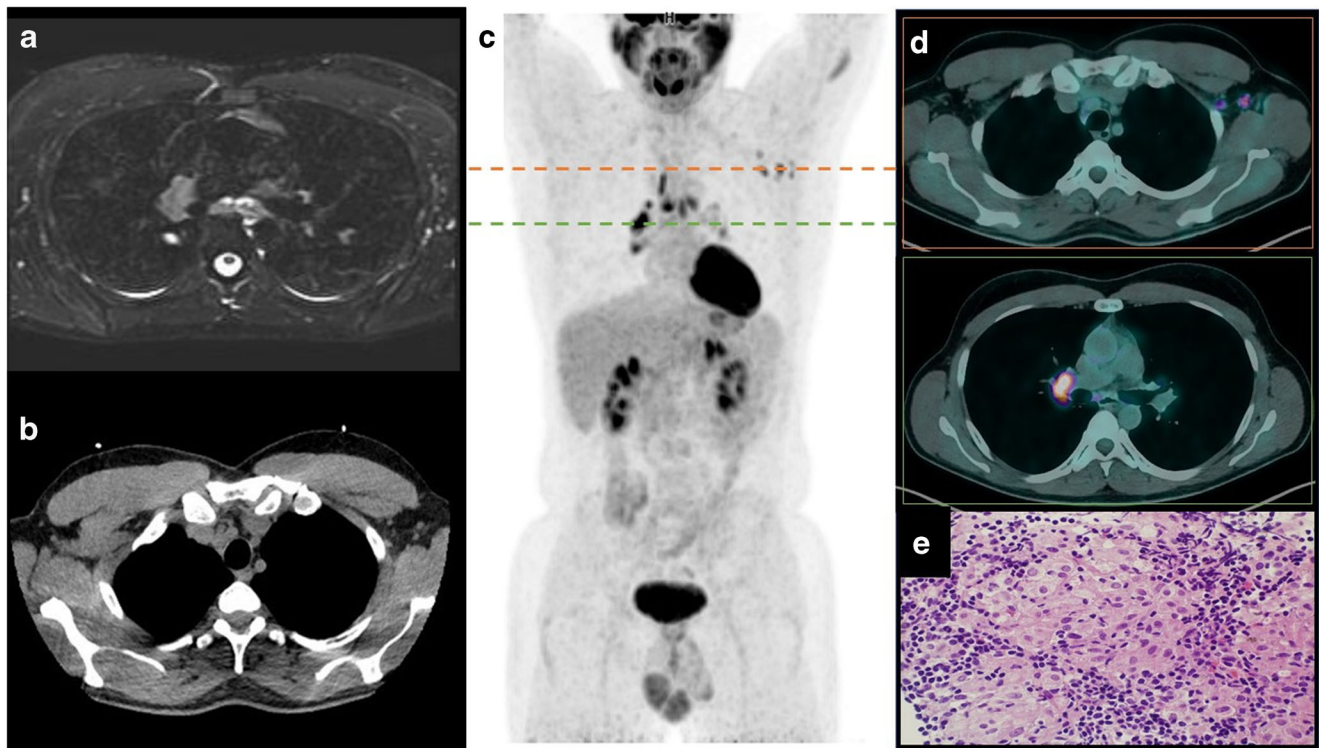
Mediastinal and left axillary lymph nodes were highly FDG-avid (panels C–D). No other lymphadenopathies were observed. Axillary lymph nodes also exhibited a small but measurable enlargement compared to CTCA. The patient reported the administration of the first dose of BNT162b2 mRNA Covid-19 vaccine a few days before CTCA/CMR and the second dose the day before FDG-PET/CT. Indeed, at a further inspection of FDG PET/CT images, a triangular intramuscular FDG uptake in the left arm was also observed, corresponding to the injection site. As the second dose vaccine administration was performed in the time interval between CTCA/CMR and PET/CT in the ipsilateral arm, and the enlargement of the left axillary lymph node was more prominent in the PET/CT scan compared to CTCA, this finding was interpreted as indicative of inflammatory reaction [1–9]. However, to further disclose the ilo-mediastinal lymphadenopathies' underlying nature, EBUS-TBNA was performed on stations 4R and 11R. At histopathology, a sarcoidal-type granulomatous inflammation was observed (panel E: hematoxylin and eosin, × 40).

The present case emphasizes the need for an accurate interview encompassing the type and timing of Covid-19 vaccination to avoid imaging misinterpretations [4]. The demonstration of a sarcoid-like granuloma in FDG-avid lymph nodes warrants the need to distinguish between vaccine-related pitfalls and concomitant newly diagnosed diseases, particularly in the presence of other hypermetabolic nodal stations. The presence of concomitant newly diagnosed sarcoidosis is intriguing given the documented association between exposure to drugs modulating immune system activation and sarcoidosis-like reactions (the so-called drug-induced sarcoidosis-like reaction) [10, 11].

This article is part of the Topical Collection on Image of the month

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Declaration

Informed consent The patient provided written informed consent for the publication of this case.

Conflict of interest The authors declare no competing interests.

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