

Short Communication

Lymphadenopathy Secondary to COVID-19 Vaccination

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Abstract

A 64-year-old male with known moderately differentiated adenocarcinoma, was being investigated for metastases. There were multiple liver metastases seen on Computed Tomography (CT) scan. The primary tumour was resectable and a Positron Emission Tomography (PET) CT scan was recommended to complete staging.

Keywords: COVID-19; COVID-19 vaccination; PET-scan; Lymphadenopathy; Vaccination side effects

Image Findings

The PET-CT scan showed five liver metastases. It also showed lymph node uptake in the left axillary lymph nodes. The patient had had the Pfizer-BioNTech vaccines two weeks prior to the PET-CT, in his left arm. These were likely to be reactive nodes (Figure 1).

Differentials

- Benign: mastitis, infective cause (tuberculosis, cellulitis), silicone induced granulomatous adenitis, post-vaccination (COVID-19 or influenza)
- Malignant: metastasis from breast malignancy, melanoma, lymphoma

Discussion

A previous multinational Pfizer study found that 0.3% developed axillary lymphadenopathy vs. <0.1% placebo. This generally resolved within ten days [1]. In various other case studies using PET-CT scans they found an increase in axillary lymph nodes on the ipsilateral axilla to the COVID-19 vaccination [2-5]. This has also previously been seen with the influenza vaccine [6].

It is important to keep the aetiology in mind when interpreting PET-CTs from oncological patients. Reactive axillary lymphadenopathy secondary to the COVID vaccination needs to be a differential diagnosis.

Learning Points

- Recent COVID-19 vaccination should be in the differentials for axillary lymphadenopathy on PET-CTs

- It is important to include recent vaccinations when taking a history
- Lymphadenopathy on a PET-CT in a patient with previous malignancy, does not always have a malignant cause
- The adverse features of the COVID-19 vaccine are not yet fully understood

Declarations

Patient consent obtained for participation and publication. Ethics was not needed.

We no competing interests, we have data transparency; we have no sources of funding or financial interests.

References

1. Polack FP, Thomas SJ, Kitchin N, Absalon J, Gurtman A, Lockhart S, et al. Safety and efficacy of the BNT162b2 mRNA Covid-19 vaccine. *NEJM*. 2020;383(27):2603-15.
2. Eifer M, Yael E. Imaging of COVID-19 vaccination at FDG PET/CT. *Radiology*. 2021;299(2):E248.
3. Avner M, Orevi M, Caplan N, Popovtzer A, Lotem M, Cohen JE. COVID-19 vaccine as a cause for unilateral lymphadenopathy detected by 18F-FDG PET/CT in a patient affected by melanoma. *Eur J Nucl Med Mol Imaging*. 2021;48(8):2659-60.
4. Özütemiz C, Krystosek LA, Church AL, Chauhan A, Ellermann JM, Musibay ED, et al. Lymphadenopathy in COVID-19 Vaccine Recipients: Diagnostic Dilemma in Oncology Patients. *Radiology*. 2021;300(1):E296-E300.
5. Local Reactions, Systemic Reactions, Adverse Events, and Serious Adverse Events: Moderna COVID-19 Vaccine. US Center for Disease Control and Prevention. 2021.
6. Shirone N, Shinkai T, Yamane T, Uto F, Yoshimura H, Tamai H, et al. Axillary lymph node accumulation on FDG-PET/CT after influenza vaccination. *Ann Nucl Med*. 2012;26(3):248-52.

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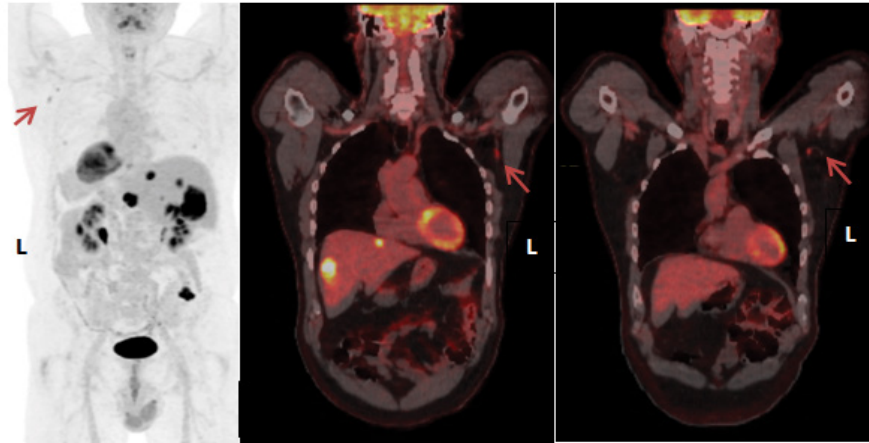


Figure 1: FDG PET-CT scan. A) MIP. B and C) Fused CT. Focally increased uptake in the left axillary lymph nodes (arrow head), coinciding with the recent COVID-19 vaccination.