Lymphadenopathy Secondary to COVID-19 Vaccination

Laura Chapman1* and Ahmed Al-Mukhtar2
1Sheffield Teaching Hospitals NHS Foundation Trust, United Kingdom
2Northern General Hospital, England

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
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.