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Case Report

Acute axillary lymphadenopathy detected shortly after COVID-19 vaccination found to be due to newly diagnosed metastatic melanoma

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ABSTRACT

As the administration of COVID-19 vaccines continues to increase, so too does awareness of the associated ipsilateral axillary lymphadenopathy. This has created a diagnostic challenge in the field of radiology, in particular among patients with cancer, as post-vaccination reactive adenopathy has been reported to be mistakenly interpreted as malignancy. As radiology departments improve their protocols for obtaining vaccine-related patient history, and radiologists become acclimated to attributing axillary lymphadenopathy to recent COVID-19 vaccination, there is a risk of the pendulum swinging too far and under-diagnosing true oncologic disease. This report describes an otherwise healthy 53-year-old man who presented with discomfort due to ipsilateral axillary lymphadenopathy shortly after receiving a COVID-19 vaccine. Fine needle aspiration performed within 2 months of receiving the vaccine revealed metastatic melanoma and subsequent ^{18}F-FDG PET/CT demonstrated intensely avid axillary and supraclavicular adenopathy without visualization of a primary lesion. This case serves as a cautionary report to remind clinicians to remain suspicious of possible underlying malignancy with the presence of axillary adenopathy, despite a history of recent COVID-19 vaccination.

Introduction

Reactive unilateral lymphadenopathy, along with associated 2-deoxy-2-[^{18}F]fluor-D-glucose (FDG) uptake following vaccination against severe acute respiratory syndrome coronavirus type 2 (SARS-CoV$_2$) has been well-documented [1–4]. These circumstances challenge radiologists and nuclear medicine physicians to distinguish reactive from malignant adenopathy and have prompted the publication of expert recommendations regarding imaging in the setting of COVID-19 vaccinations [5–10]. However, instances of ipsilateral lymphadenopathy discovered shortly after COVID-19 vaccination that represent newly diagnosed malignancy are less well-documented.

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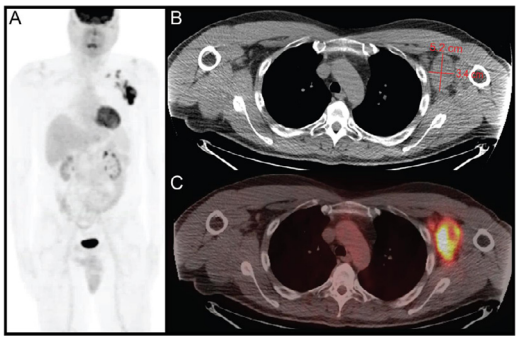

Fig. 1 – (A) Maximum intensity projection of a patient with increased radiotracer avidity in the left axillary and supraclavicular nodes. Representative axial CT (B) and PET/CT fusion (C) images reveal the most prominent site of adenopathy, measuring up to 5.2 cm. The patient received the COVID-19 vaccine in his left upper extremity less than 2 months prior to image acquisition.

Case report

A 53-year-old man received COVID-19 vaccinations (BioNTech/Pfizer) in his left upper extremity in mid-May and early June 2021, then presented approximately two weeks later with new palpable, tender left axillary adenopathy. Aside from intermittent left upper extremity paresthesia, review of systems was negative. He had undergone excision of atypical intraepidermal melanocytic proliferations on his right upper extremity and right lower back 1 year prior to presentation, but had no history of skin cancer or other significant medical history. His only oncologic family history was of breast cancer in a grandparent.

At the time of presentation, physical exam revealed palpable left axillary lymphadenopathy measuring approximately 5 cm in diameter. He was prescribed a 10-day course of cefalexin and underwent chest radiography, which was unremarkable. After completing the antibiotic course without improvement, an ultrasound-guided fine-needle aspiration, performed less than 2 months after receiving the vaccine, revealed a background of lymphocytes with scattered malignant cells positive for SOX10 and negative for pan-cytokeratin, consistent with metastatic melanoma.

Subsequent ^{18}F-FDG PET/CT imaging demonstrated intensely avid left axillary and supraclavicular adenopathy without visualization of a primary lesion (Fig. 1). Brain MRI was unremarkable and complete dermatologic skin exam was negative for any cutaneous lesions suspicious for a primary melanoma. The patient was referred to medical oncology for continued care.

Discussion

It has been well-documented that radiologists should be cautious when interpreting ipsilateral lymphadenopathy following recent COVID-19 vaccination. However, many of the published reports emphasize the importance of considering reactive nodes rather than malignancy within variable time ranges following COVID-19 vaccination. This case report highlights the importance of clinicians and imaging specialists remaining suspicious of underlying malignancy causing ipsilateral adenopathy, even in the context of recent COVID-19 vaccination, and absence of an oncologic history. Although in this particular case the biopsy was performed prior to the ^{18}F-FDG PET/CT, there are certainly scenarios in which diagnostic imaging serves as the decision point to determine if further workup with tissue sampling should be advised. As COVID-19 vaccination administration continues to increase worldwide, ongoing efforts are needed for clinicians and imaging specialists to appropriately detect malignant adenopathy in the context of recent vaccination and thereby avoid delays in both diagnosis and treatment.

Patient consent statement

Written, informed consent for publication of this case was obtained from the patient on 10/4/21.

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Pertinent competing interests

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