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COVID-19 mRNA vaccine-related adenopathy mimicking metastatic melanoma

Peter A Prieto, Kathleen Mannava, Deepak M Sahasrabudhe

A 48-year-old white female patient underwent wide excision and sentinel lymph node biopsy for a T2a melanoma of the left deltoid region at Strong Memorial Hospital of the University of Rochester Medical Center (Rochester, NY, USA) on Dec 11, 2020. Final pathology revealed a negative excision margin and one of two sentinel lymph nodes with micrometastatic disease (with no extracapsular extension); T2aN1 pathological stage IIIA. Staging brain MRI was negative; however, a PET–CT scan showed substantial fluorodeoxyglucose (^{18}F -FDG) avidity in the contralateral axilla and neck (figure, A) and postoperative changes in the ipsilateral axilla and shoulder (small seroma and biopsy clips from sentinel lymph node biopsy).

Image-guided biopsy of an FDG-avid right axillary lymph node was done on Jan 13, 2021. Histological immunohistochemical stains for melanocytes (Melan-A and SOX10) were negative, which is consistent with a diagnosis of reactive lymphoid tissue. Further questioning of the patient revealed that she had received her first dose of the COVID-19 mRNA vaccine (the vaccine produced by Moderna [Cambridge, MA, USA]) in the right deltoid muscle 5 days prior to the initial staging PET–CT scan.

Her second dose of the vaccine was administered in the right thigh on Jan 28, 2021. A repeat PET–CT scan done 5 days after her second dose of the vaccine revealed resolution of the hypermetabolic right axillary and neck nodes with normal radiographic morphology (figure, B) and the development of hypermetabolic right inguinal and pelvic adenopathy.

Clinicians should be aware of the transient appearance of hypermetabolic regional lymph nodes after injection of the COVID-19 mRNA vaccine and possibly other vaccines. As COVID-19 vaccination programmes expand worldwide, it will be important for oncologists to include history of vaccination in interpreting the results of staging imaging studies.

Contributors

PAP made the clinical diagnosis. PAP and DMS proposed the manuscript. KM made the pathological diagnosis and reviewed the immunohistochemical stains. PAP, KM, and DMS all contributed equally to the drafting the manuscript and writing and editing. All authors developed and approved the manuscript. Written informed consent to publication was obtained.

Declaration of interests

We declare no competing interests.

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Department of Surgery, Division of Surgical Oncology (P A Prieto MD), Department of Medicine, Division of Hematology/Oncology (Prof D M Sahasrabudhe MD), Wilmot Cancer Center (P A Prieto, Prof D M Sahasrabudhe) and Departments of Dermatology and Pathology (K Mannava MD), University of Rochester Medical Center, Rochester, NY, USA

Correspondence to:

Dr Peter A Prieto, Department of Surgery, Division of Surgical Oncology, University of Rochester Medical Center, Rochester, NY 14620, USA

peter_prieto@urmc.rochester.edu

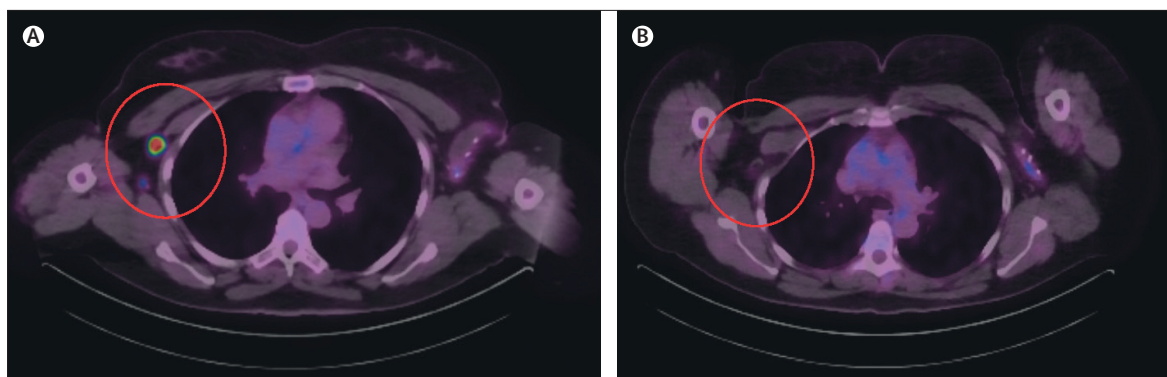


Figure 1: Fluorodeoxyglucose PET–CT scans

(A) Initial scan 5 days after first dose of the COVID-19 mRNA vaccine (in the right deltoid muscle) and (B) repeat scan after second dose (given in the right thigh). Note resolution of right axillary avidity.