

# **FDG avid axillary lymph node on $^{18}\text{F}$ -FDG PET/CT scan after COVID-19 vaccination**

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## **Objective:**

COVID-19 vaccinations have been widely launched against the worldwide pandemic COVID-19 infection. We are familiar with the common side effects after COVID-19 vaccination, such as fever, headache, myalgia, and rarely anaphylaxis. However, the vaccine can also cause a reactive response in regional lymph nodes, adjacent to the injection site, with increased FDG uptake on  $^{18}\text{F}$ -FDG PET/CT scan.

## **Results:**

A 57 year old female with family history of breast and ovary cancer was diagnosed with stage I right breast cancer in 2000. She was treated with right partial mastectomy and sentinel node dissection followed by right breast radiation therapy. In 2010, the patient developed bone metastases, which have remained stable since 2019 and monitored annually with  $^{18}\text{F}$ -FDG PET/CT. There was no local or nodal recurrence of breast cancer. The most recent  $^{18}\text{F}$ -FDG PET/CT, again, demonstrated stable bone metastases. Interestingly, we found new non enlarged FDG avid left axillary lymph nodes. Review of the electronic medical records revealed that the patient had received the Moderna COVID-19 vaccine 10 days prior in the left deltoid muscle.

## **Conclusions:**

The reactive response to COVID-19 vaccination can result in FDG uptake in axillary lymph nodes on  $^{18}\text{F}$ -FDG PET/CT scan. Awareness of this when reviewing oncology studies and obtaining vaccination history can prevent misinterpretation and unnecessary biopsy.

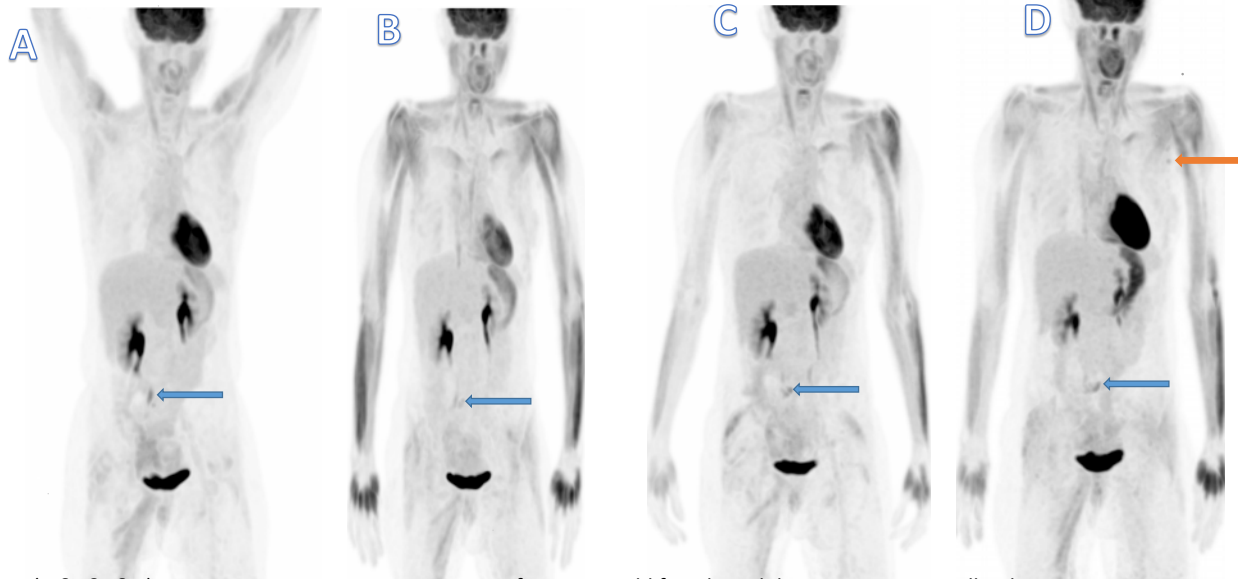
## **Materials and methods:**

We present a case of incidental finding of FDG avid axillary lymph nodes after COVID-19 vaccination in a patient with breast cancer on  $^{18}\text{F}$ -FDG PET/CT.

## **Keywords:**

COVID-19 vaccination, FDG avid axillary lymph nodes





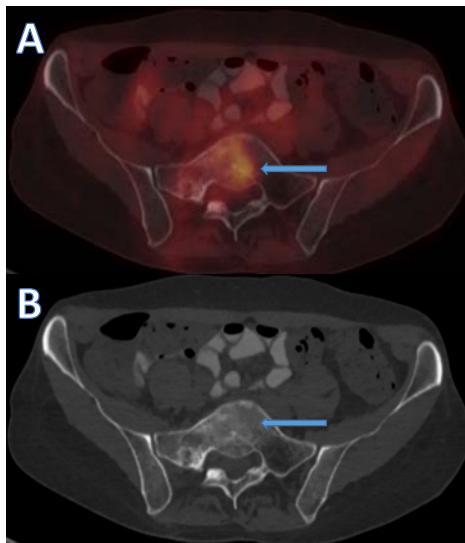
( A&B&C&D) FDG PET maxim intensity projection of a 57-year-old female with breast cancer, as well as bone metastases, stable since 2019. FDG avid osseous lesions in right aspect of sacrum (blue arrows). FDG avid left axillar node seen on image D, reactive node to COVID-19 vaccination.

8/28/2019

1/23/2020

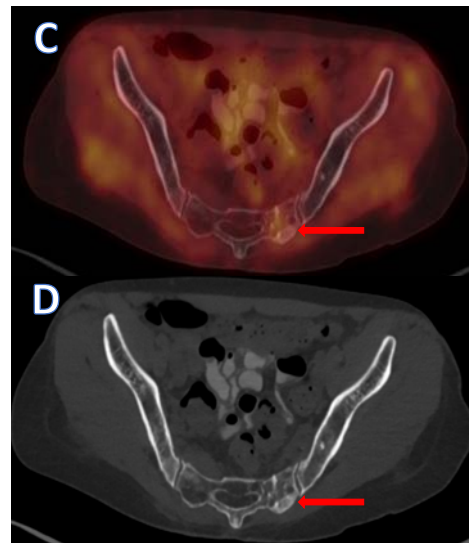
5/28/2020

1/21/2021



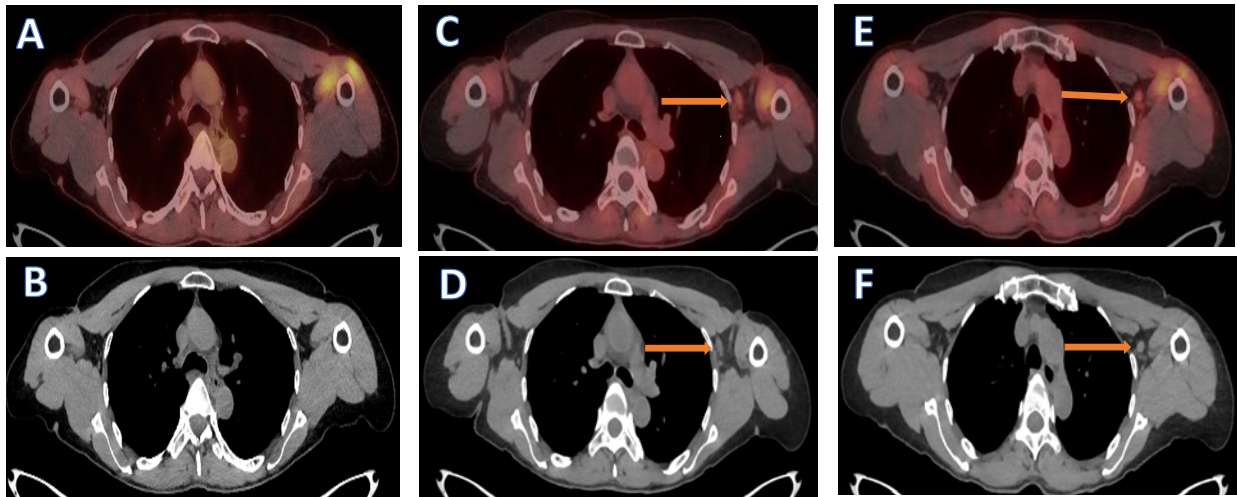
(A&B) Axial fused FDG PET/CT and CT images demonstrate FDG uptake in the mixed lytic/sclerotic lesion in the right aspect of sacrum superiorly ( blue arrows).

5/28/2020



(C&D) Axial fused FDG PET/CT and CT images demonstrate FDG uptake in the mixed lytic/sclerotic lesion in the left aspect of sacrum inferiorly ( red arrows).

1/21/2021



(A&B) Axial fused FDG PET/CT and CT images on 5/28/2020, immediately prior to recent one, before COVID-19 vaccination, no FDG avid lymph nodes in the left axilla.

(C&D, E&F) Axial fused FDG PET/CT and CT images on 1/21/2021 demonstrate FDG avid left axillary lymph nodes after COVID vaccination in the left deltoid muscle 10 days ago ( orange arrows)

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