^{111}In-Pentetreotide Uptake Due to COVID-19 Vaccination

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Abstract: A 72-year-old woman was referred for whole-body ^{111}In-pentetreotide scintigraphy with SPECT/CT. There was increased uptake of lymphadenopathy in the left axilla and left deltoid muscle. The patient's history revealed that the patient received the first dose of the COVID-19 vaccine 3 days before the ^{111}In-pentetreotide scintigraphy with SPECT/CT. This case demonstrates that the COVID-19 vaccine can cause ^{111}In-pentetreotide uptake in the lymph nodes and the deltoid muscle.

Key Words: ^{111}In-pentetreotide, COVID-19, deltoid muscle, vaccine

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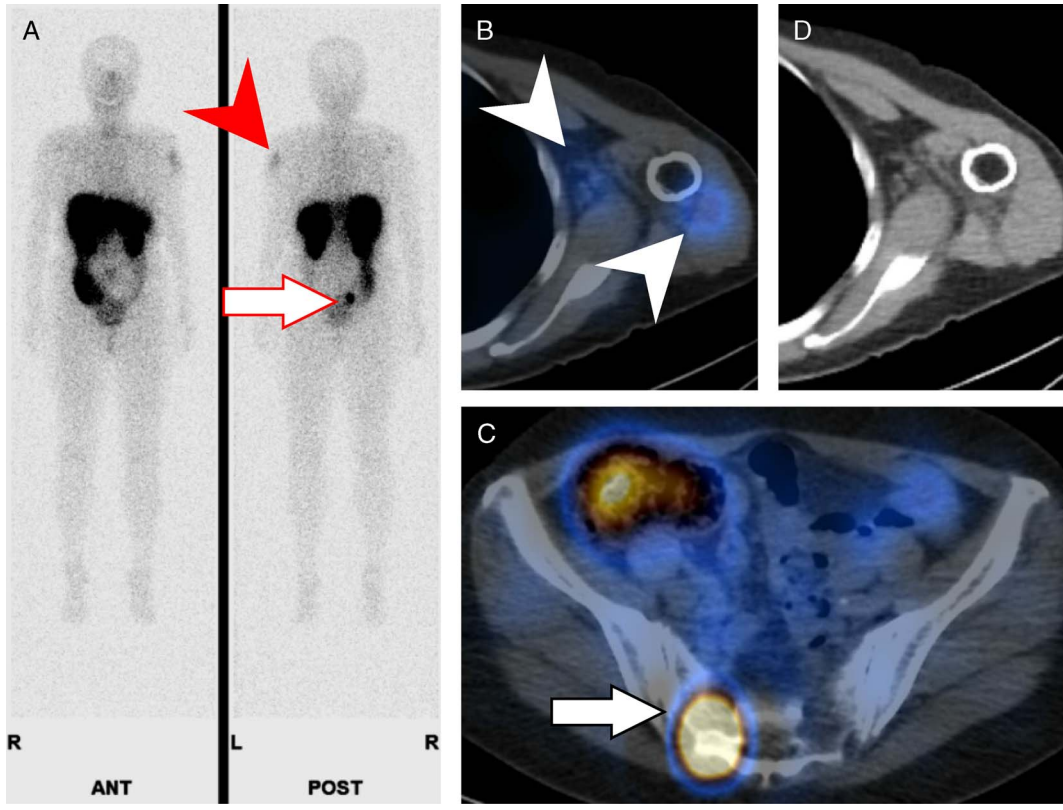

FIGURE 1. A 72-year-old woman was referred to whole-body ^{111}In-pentetreotide scintigraphy with SPECT/CT, suspecting recurrence of neuroendocrine tumor (NET). She underwent surgery for colon NET and liver metastasis 6 years ago. There were focal uptakes of ^{111}In-pentetreotide in the lower abdomen and left upper arm on the 24-hour planar image (**A**, arrow and arrowhead, respectively). On the SPECT/CT, there was increased uptake in the area of lymphadenopathy at the left axilla and the left deltoid muscle (**B**), as well as the sacrum, which is consistent with bone metastasis of NET (**C**, arrow). Given that the lymph nodes were not noticeable on the CT, taken 8 days earlier than the ^{111}In-pentetreotide scintigraphy (not shown), the axillary lymph node enlargement (**D**) was believed to have occurred during the 8 days. The patient's medical history showed that she received the first dose of the COVID-19 vaccine as an intramuscular injection to the left deltoid muscle, 3 days before the ^{111}In-pentetreotide scintigraphy with SPECT/CT. With the recent widespread use of COVID-19 vaccination, it is not uncommon to see transient FDG uptake in morphologically normal or mildly enlarged lymph nodes located in the axilla and sometimes on the supraclavicular or the neck after intramuscular vaccination of the ipsilateral deltoid muscle.[1–4] This case demonstrates ^{111}In-pentetreotide uptake due to COVID-19 vaccination in a pattern identical to that of FDG PET. Although it has not been reported whether ^{111}In-pentetreotide accumulates in the muscles or lymphoid tissues after vaccination, lymphatic cells are known to express somatostatin receptors.[5] ^{68}Ga-DOTA TOC/TATE uptake is commonly seen in inflammatory lymph nodes,[6,7] including lymphadenopathy due to COVID-19 vaccination.[8–10] As with FDG PET/CT, information about vaccination may help avoid unnecessary testing during somatostatin receptor imaging.