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INTERESTING IMAGE

Splenosis Mimicking Relapse of a Neuroendocrine Tumor at Gallium-68-DOTATOC PET/CT

Giorgio Treglia · Luca Giovanella · Barbara Muoio · Carmelo Caldarella

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A 48-year-old female patient underwent splenopancreasectomy for a 4-cm pancreatic neuroendocrine tumor (pNET), grade G2, located in the pancreatic tail. One year after surgery, the patient presented an increased serum level of the tumor marker chromogranin A (value: 160 U/l). Therefore, she underwent somatostatin receptor PET/CT using gallium-68-DOTATOC for restaging. This imaging method showed a focal area of increased radiopharmaceutical uptake corresponding to a 2.5-cm nodule located in the left superior abdomen near a clip from the previous surgery, suggesting a possible relapse of pNET (Fig. 1). Based on this PET/CT finding, the patient underwent ultrasonography-guided core biopsy of this nodule. Histology did not reveal findings suggestive of pNET but identified spleen tissue most likely caused by splenosis accidentally seeded at the previous operation. It is likely that the increased serum level of the tumor marker chromogranin A was due to the chronic proton-pump inhibitors use.

Somatostatin receptor PET/CT is an accurate imaging method for staging and restaging pNET, presenting high sensitivity and specificity in this setting [1–7]. Nevertheless, possible sources of false-negative and -positive findings with this method should be taken into account [1]. Inflammatory lesions represent the most frequent causes of false-positive findings for pNET at somatostatin receptor imaging because inflammatory cells may overexpress somatostatin receptors on their cell surface [8, 9].

In our case, we showed that splenosis may represent a possible cause of false-positive findings for pNET relapse due to the physiological uptake of somatostatin analogs by the spleen tissue [10, 11].

G. Treglia (✉) · L. Giovanella
Nuclear Medicine and PET/CT Center, Oncology Institute of Southern Switzerland, via ospedale, 12, 6500 Bellinzona, Switzerland
e-mail: giorgiomednuc@libero.it

B. Muoio
School of Medicine, Catholic University, Rome, Italy

C. Caldarella
Nuclear Medicine, Catholic University, Rome, Italy

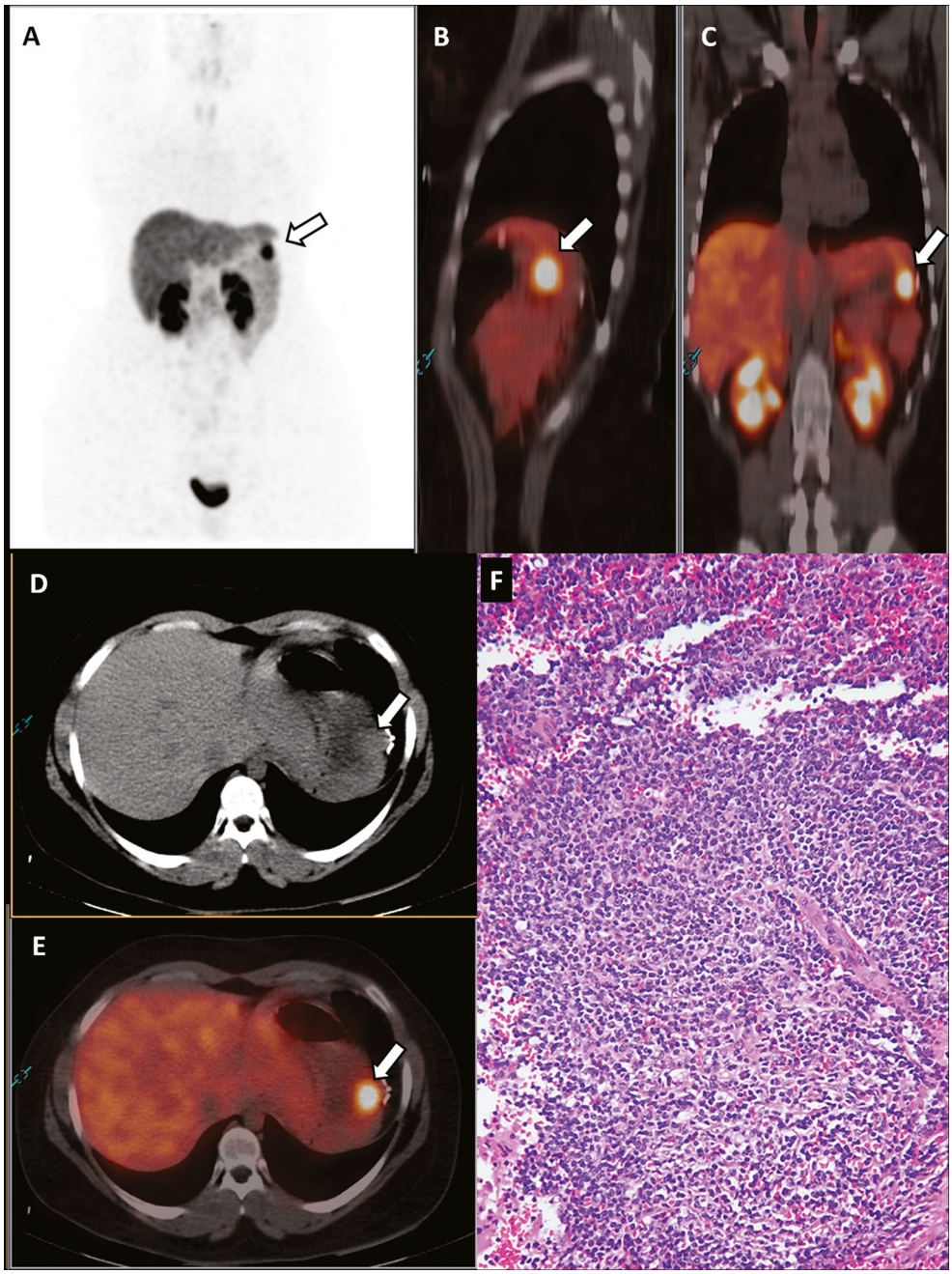

Fig. 1 A 48-year-old female patient previously treated with splenopancreasectomy for a 4-cm pNET, grade G2, located in the pancreatic tail underwent somatostatin receptor PET/CT for restaging because of an increase in the chromogranin A serum levels (value: 160 U/l). Gallium-68-DOTATOC was injected (activity: 140 MBq). Images were acquired 1 h after radiopharmaceutical injection. Maximum standardized uptake values (SUV_{max}) were used to measure the radiopharmaceutical uptake semi-quantitatively. Somatostatin receptor PET (**a**), sagittal (**b**) and coronal (**c**) PET/CT, axial CT (**d**) and PET/CT (**e**) images showed a focal area of increased radiopharmaceutical uptake (SUV_{max}: 13) corresponding to a 2.5-cm nodule located in the left superior abdomen (*arrows*) near a clip from the previous surgery, suggesting a possible relapse of pNET. Based on this PET/CT finding, the patient underwent ultrasonography-guided core biopsy of this nodule. Histology did not reveal findings suggestive of NET but identified spleen tissue (**f**), most likely caused by splenosis accidentally seeded at the previous operation

Conflict of Interest Giorgio Treglia, Luca Giovanella, Barbara Muoio and Carmelo Caldarella declare that they have no conflicts of interest.

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