An unusual false-positive uptake of radioiodine caused by pulmonary vasculature: The usefulness of SPECT/CT

Hell J Nucl Med 2020; 23(2): 204-205 *Published online: 24 August 2020*

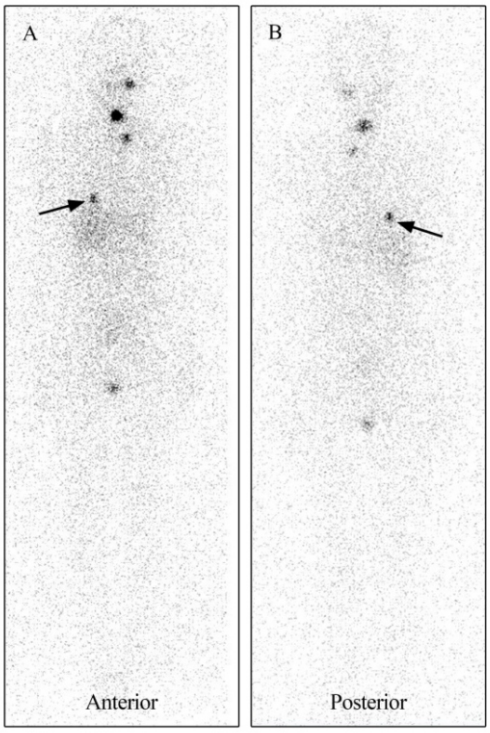

Figure 1. A 25-year-old woman with differentiated papillary thyroid cancer was referred for ^{131}I therapy after total thyroidectomy and cervical lymph node dissection. The patient was administered 3.7GBq of ^{131}I. Anterior (A) and posterior (B) whole body images obtained 8 days after ^{131}I administration revealed increased activity in the left dental caries, thyroid bed, and left IV-zone cervical lymph node and in the right chest (arrows). To clarify the nature of the focal activity in her right chest, SPECT/CT images were acquired.

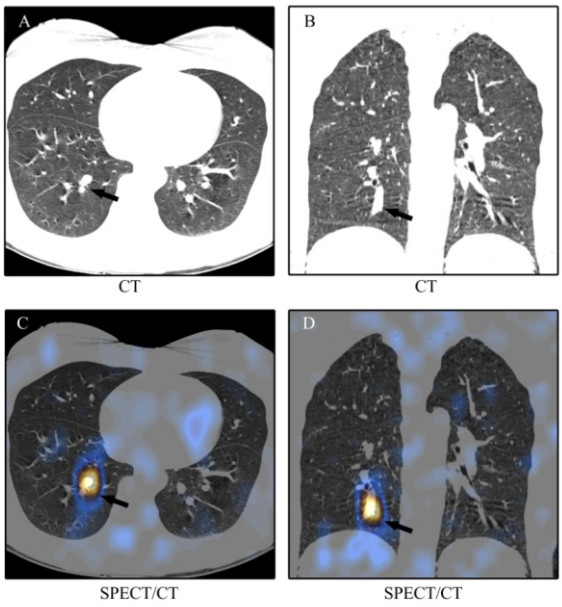

Figure 2. CT (A, B) and SPECT/CT (C, D) localized the activity to the pulmonary vasculature of the basal segment of the right lower lobe (arrows). CT demonstrated no abnormal density shadow. The thyroglobulin level was 18.64ng/mL, the TgAb >500u/mL, the TSH >150uIU/mL, and the patient had no complaint related to her lung.

There are numerous conditions that may cause false-positive findings on iodine scintigraphy, such as vascular structure, mediastinum, bronchiectasis, cystic lesions, and mature cystic teratoma [1-8]; however, many of their mechanisms remain to be elucidated [9, 10]. Single photon emission computed tomography/computed tomography (SPECT/CT) imaging can be conducive to avoiding potential pitfalls [11-13]. In addition, the nuclear physicians have to bear in mind that iodine-131 (^{131}I) uptake in pulmonary vasculature can be a possible cause of false-positive uptake when they interpret ^{131}I whole body scan (WBS).

The authors declare that they have no conflicts of interest.

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