

# Synchronous Primary Lung Cancer, Breast Cancer Recurrence, and Mediastinal Silicon-Induced Lymphadenitis

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A 66-year-old nonsmoker woman had a chest computed tomography (CT) during oncological follow-up of bilateral breast cancers. The CT scan disclosed a partially-solid 17-mm nodule in the right upper lobe, a 17-mm retrosternal left mammary chain lymph node, and a 20-mm left subclavicular lymph node.

Seventeen years earlier, she had been submitted to left Patey mastectomy for lobular infiltrating carcinoma (pT1c pN1b1 R0—stage IIA according to the 1987 Union Internationale Contre le Cancer classification) and, 10 months later, underwent redo breast resection for tubular ductal carcinoma (pT1c pN0G1 R0—stage I according to the 1987 Union Internationale Contre le Cancer classification). The patient received bilateral breast prosthesis implantation. Seven years earlier, the patient underwent median sternotomy for mitral mechanical valve implantation, and 3 years earlier, she required breast prosthesis replacement due to prosthesis damage.

Her current evaluation included a positron emission tomography (PET), which showed pathologic [18F]-fluorodeoxyglucose uptake with a maximal standardized uptake values of 4.8, 3.5, and 3.2 in the lung lesion, retrosternal lymph node, and subclavicular node, respectively (Figures 1A–C). CT-guided biopsy and bronchoalveolar lavage of the right upper lobe were nondiagnostic. She did not have an positron emission tomography because of claustrophobia.

The patient underwent right axillary muscle-sparing thoracotomy and wedge resection of the right upper pulmonary nodule: frozen section disclosed adenocarcinoma, probably primary non-small cell lung cancer.

Right upper lobectomy and lymphadenectomy were performed. Retrosternal dissection and mediastinal adhesiolysis

(due to previous median sternotomy) allowed biopsy of the lymph node of the left internal mammary chain. Frozen section disclosed a foreign body inflammatory reaction. Subsequent biopsy of the left subclavicular lymph node revealed breast metastatic carcinoma.

Definitive histology confirmed primary pT1 pN0 G1 TTF1 positive acinar adenocarcinoma of the lung (stage IA), subclavicular estrogen receptor positive breast cancer recurrence, and mediastinal silicon-induced lymphadenitis.

On the one hand, clinical staging by CT and PET/CT scan in our patient suggested a diagnosis of primary lung cancer with contralateral mediastinal and subclavicular lymph node involvement (stage III B—cN3 disease) and thus not amenable to surgical exploration. An alternative explanation was nodal recurrence by breast cancer and pulmonary metastasis. Although it was known that the patient had had prosthesis rupture, the hypothesis of a foreign body reaction lymphadenitis was not entertained preoperatively mainly because of the coexisting pulmonary lesion. In addition, similar [18F]-FDG uptake values in the three different lesions (standardized uptake values of 4.8, 3.5, and 3.2) led us to consider only one disease rather than three different conditions, as was the case. Another misleading factor was the relatively recent median sternotomy that may have accounted for [18F]-FDG uptake by the internal mammary lymph node.

The exceptional nature of the present case lies in the misleading concomitance of three unrelated clinical events with similar CT and PET features. Although synchronous or metachronous lung and breast cancers have been described, as well as silicon-induced lymphadenitis in patients with prosthetic augmentation mammoplasty,<sup>1</sup> to our knowledge synchronous primary lung cancer, breast cancer recurrence, and mediastinal silicon-induced lymphadenitis have never been described in the same patient. Although rare, multiple synchronous oncologic and nononcologic diseases need to be considered during follow-up in patients treated for breast cancer to offer them the best therapeutic approach.

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## REFERENCE

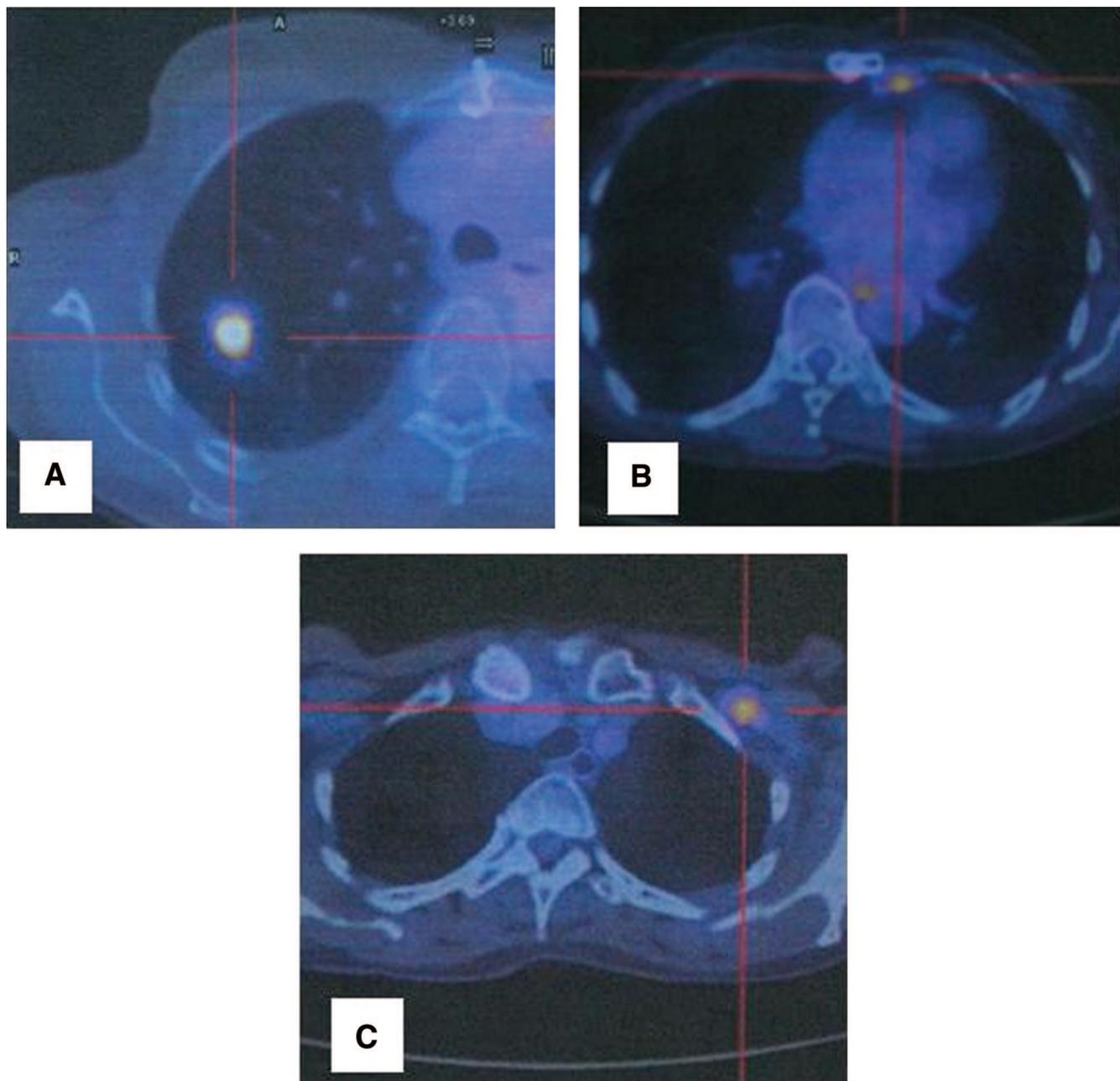
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**FIGURE 1.** Positron emission tomography disclosing pathologic [18F]-fluorodeoxyglucose uptake in the lung lesion (A), retrosternal lymph node (B), and subclavicular lymph node (C).