

Positron Emission Tomography–Positive Pleural-Based Nodule Following Talc Pleurodesis

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TO THE EDITOR

The fluorodeoxyglucose positron emission tomography (FDG-PET) scan is frequently used for evaluation and staging of pulmonary malignancy. False-positive PET results can occur. The most common causes of false-positive PET results include pulmonary-pleural inflammation (such as tuberculosis, sarcoidosis, or rheumatoid nodule) and a PET artifact caused by the FDG containing a blood clot microembolism produced during FDG injection. We describe a case of a PET-positive pleural-based nodule after talc pleurodesis mimicking pleural malignancy and discuss the pathophysiology of reactive pleural inflammation after talc pleurodesis.

CASE REPORT

A 48-year-old female was referred to the pulmonary clinic for evaluation of a pleural-based nodule. She complained of a dull, right-sided chest pain with exertion that spontane-

ously resolved. She was a previous smoker of 25 pack years and had quit smoking 2 months before this evaluation. The patient had had recurrent episodes of primary spontaneous right-sided pneumothoraces 15 years earlier and underwent right-sided talc pleurodesis. She denied significant occupational exposures or traveling in the past few years. Cardiopulmonary examination was unremarkable. Pulmonary function testing was normal. Computed tomography (CT) of the chest from an outside facility demonstrated nodular pleural thickening 12 × 77 mm in diameter along the lateral aspect of the right major fissure (Figure 1). FDG-PET from an outside facility demonstrated an intensely hypermetabolic nodule with a standardized uptake value of 14.4 (Figure 2). Upon review, a CT chest report that had been done at our facility 10 years ago (no image available) revealed that the size of the patient's lesion had not changed. The diagnosis of reactive inflammation of the pleural-based nodule after talc pleurodesis was established. The patient was treated conservatively without further invasive diagnostic testing.

DISCUSSION

Positive FDG-PET pleural nodularity from talc pleurodesis has been reported in the literature.¹ Talc pleurodesis induces an inflammatory response that leads to intensive

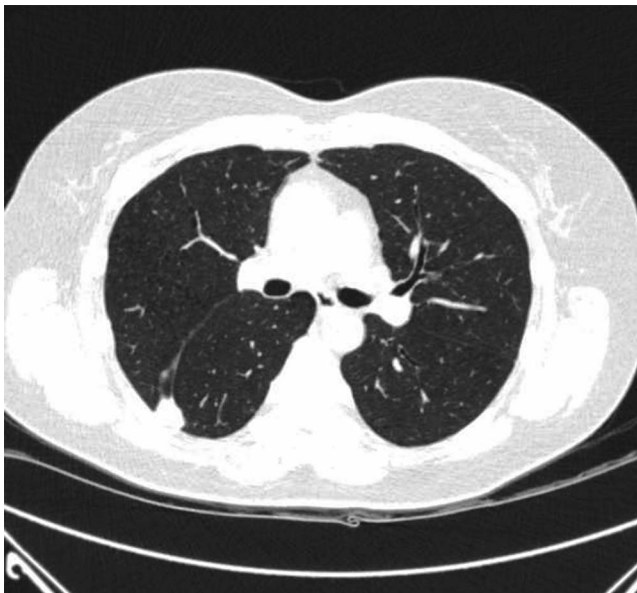


Figure 1. The computed tomography (CT) scan of the chest from an outside facility demonstrated nodular pleural thickening 12 × 77 mm in diameter along the lateral aspect of the right major fissure. The radiographic appearance and the size of this lesion had not changed compared to a CT chest done 10 years prior.

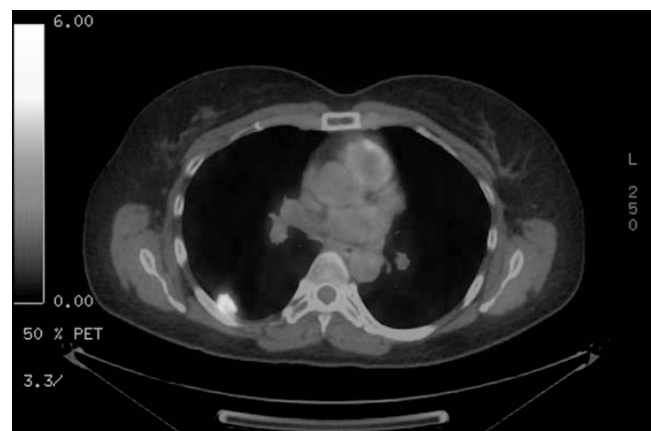


Figure 2. The fluorodeoxyglucose positron emission tomography from an outside facility demonstrated intense hypermetabolic activity corresponding to the right pleural-based nodule on anatomical computed tomography of the chest.

proliferation of fibroblasts in the pleural surface within 3 days of the procedure and subsequently leads to pleural adhesions and a chronic granulomatous reaction.² An increased FDG uptake within the thickened pleura starts within 5 months after pleurodesis and continues until pleural calcification has developed.³ The inflammatory process decreases with time. Because talc is not metabolized by the body, the FDG-PET scan can remain positive for up to 20 years after the procedure.² In our case, no radiographic change in size and location of the pleural lesion occurred for 10 years, suggesting benign granulomatous reaction after talc pleurodesis. The PET-positive pleural-based nodule/thickening could be misinterpreted as pleural malignancy. Determining if the patient has a history of pneumothorax requiring talc pleurodesis and reviewing previous chest

images are mandatory to avoid unnecessary invasive diagnostic procedures.

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