

Clinical note

Fibroelastic pseudotumour elastofibroma dorsi detected by ^{18}F -FDG PET/CT and by posttherapy radioiodine SPECT/CT

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ABSTRACT

Radioiodine uptake in the thyroid tissue, metastasis of differentiated thyroid cancer (DTC), and in other tissues, depends on the expression of sodium-iodide symporter (NIS). Vascular permeability, effusions, inflammation, and other mechanisms may also play a role in the accumulation of radioactive iodine. A 63-year-old woman underwent radioiodine therapy, as well as a post-therapy whole-body scan, as she was suspected of having lung metastasis from thyroid carcinoma. The scan not only showed uptake at the lung metastasis but also a faint diffuse bilateral uptake in the posterior thorax. On SPECT/CT this uptake was located in a known Elastofibroma Dorsi (ED) previously diagnosed by contrast CT and viewed in a FDG PET/CT. The radioiodine uptake in ED, especially if typical, is not a diagnostic problem in SPECT/CT study, but can be misleading in a study limited to a few planar images, particularly if the uptake occurs asymmetrically, or ED is located in a unsuspected area.

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Pseudotumor fibroelástico elastofibroma dorsi detectado por ^{18}F -FDG PET/TC y por ^{131}I SPECT/TC postterapia

RESUMEN

La captación de yodo radioactivo en el tejido tiroideo y en las metástasis del cáncer diferenciado de tiroides (DTC) y otros tejidos depende de la expresión del transportador de sodio-yodo (NIS). La permeabilidad vascular, derrames serosos, procesos inflamatorios y otros mecanismos también pueden desempeñar un papel en la acumulación de yodo radioactivo. Una mujer de 63 años fue sometida a terapia con yodo radiactivo y a un estudio de cuerpo completo después de la terapia, debido a la sospecha de metástasis pulmonar de carcinoma diferenciado de tiroides. La exploración no solo mostró captación en la metástasis de pulmón, sino también una captación difusa leve en la región posterior del tórax en ambos lados; en el SPECT/TC esta captación se localiza en un ED ya conocido, previamente diagnosticado mediante TC con contraste y visto también en un FDG-PET/CT. La captación de radioyodo en el ED, sobre todo si es típico, no plantea un problema de diagnóstico en el estudio de SPECT/CT, pero puede inducir a error en un estudio limitado a unas pocas imágenes planares, especialmente si la captación se produce de forma asimétrica, o el ED se encuentra en una localización insospechada.

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Palabras clave:

Elastofibroma Dorsi

Radioyodo

Carcinoma diferenciado de tiroides

Falso positivo scan

I-131 SPECT/CT

Introduction

Elastofibroma dorsi (ED) is a benign slow growing and rare pseudotumour composed of fibroelastic tissue and fat, located mainly under the scapula and in most cases as bilateral masses; if unilateral it is more common on the right side.¹ It is more frequent in women over 55 years old,² and it should be noted that it rarely appears in other sites like olecranon, deltoid, orbit or breast.³

Its etiology is not clear, but it seems to be a consequence of overload or repeated rubbing of the scapula on the ribs as well as having a genetic component.

About 50% are asymptomatic; others have a typical clinical presentation with pain and/or a sensation of clank of the scapula on shoulder movements.⁴

The diagnosis is clinical in symptomatic cases and imaging procedures are useful and may be able to obviate the need for biopsy, with MRI being the most accurate.⁵ A mass located on the inferior pole of the scapula composed of fibrous tissue and fat is pathognomonic of ED.

Several articles have been published highlighting ^{18}F -FDG uptake in ED in PET/CT. Glucose uptake is attributed to an unknown mechanism that may reflect a high vascularization and increased metabolism. The SUV value is usually moderate and does not decrease after chemotherapy.

Currently there are no articles describing radioiodine uptake by this pseudotumour in the literature.

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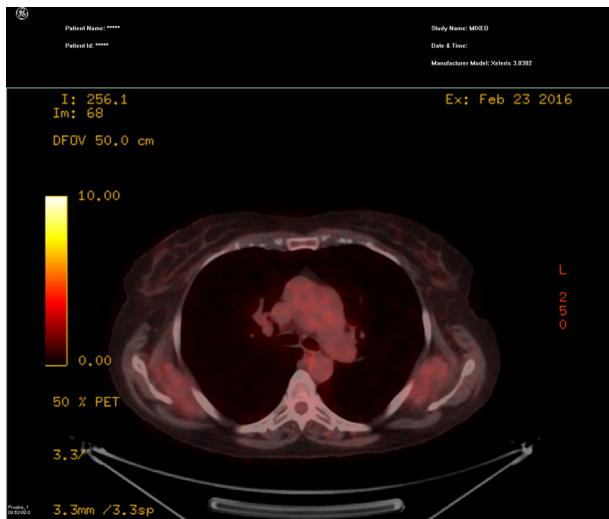


Fig. 1. A moderate degree of FGD uptake in the bilateral masses located in the subscapular region (SUV max.lbm of 2.1 in the right side and 2.2 in the left) diagnosed in a previous CT as elastofibroma dorsi.

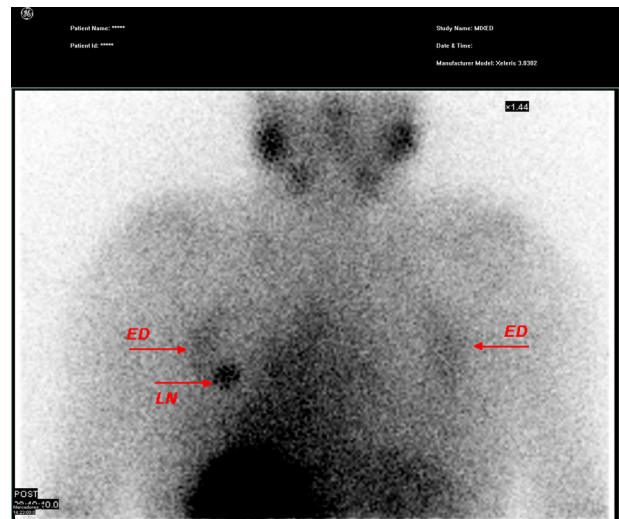


Fig. 2. Posttherapy planar scan at 72 h post-dose showed a mild thoracic bilateral uptake in the posterior view probably coinciding with the elastofibroma dorsi diagnosed in previous CT (ED) as well as a moderate focal uptake localized in the left side of thoracic region which corresponded to the lung nodule (LN).

Clinical case

A 63-year-old woman with a history of chronic obstructive pulmonary disease, diabetes mellitus, high blood pressure, primary hyperparathyroidism and papillary thyroid carcinoma diagnosed in 1980, came to the hospital because of acute respiratory failure and was hospitalized, with a chest CT being taken during her stay.

The CT showed a solitary pulmonary nodule in the upper left lobe, with lung carcinoma being the first suspicion due to her medical history and risks factors (the patient was an active smoker).

Directly after this, a PET/CT was performed to rule out the possibility of lung carcinoma. PET/CT showed a very low degree of ^{18}F -FDG accumulation in the pulmonary nodule (SUVmax. Lbm = 2).

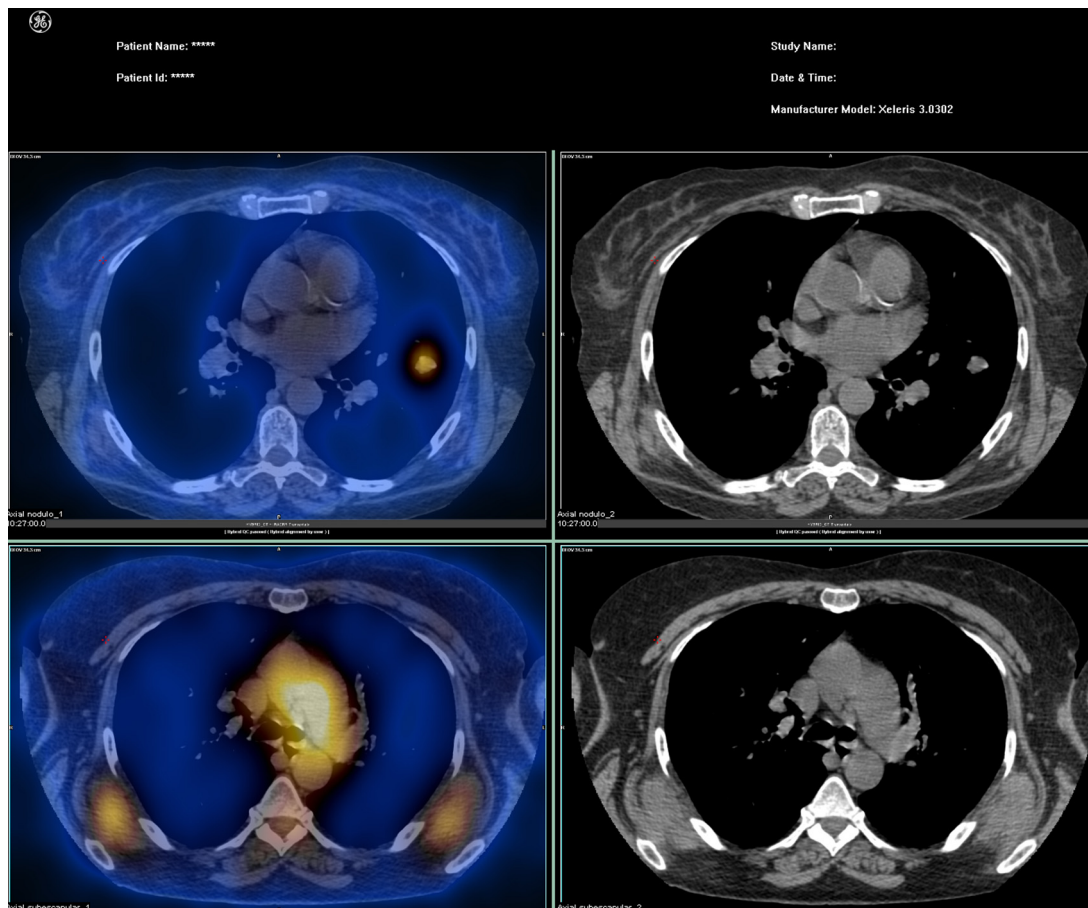


Fig. 3. The SPECT/CT showed that the posterior thoracic uptake was located in the known ED pseudotumor and that the pulmonary nodule had a marked uptake.

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