Interesting images

Incidental finding of an endobronchial tumor by $^{18}$F-FDG PET/CT

Hallazgo incidental de una lesión tumoral endobronquial mediante PET/TC con $^{18}$F-FDG


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A 70-year-old male smoker patient (50 packs/year) with criteria of chronic bronchitis was attended for the presentation of a 2-week picture of asthenia, cough with yellowish expectoration and thermal sensory dysfunction. The chest X-ray showed an alveolar infiltrate in the upper left pulmonary lobe and the patient was treated with antipyretics and antibiotics. On the control X-ray a possible nodular lesion was observed in the periphery of the upper left lobe for which a thoracic CT was performed, confirming its presence.

A PET/CT study with $^{18}$F-FDG was performed for metabolic characterization. The nodule detected in the upper left lobe did not present glycidic activity, thereby suggesting a benign origin. However, a hypermetabolic focal uptake was observed in the right lung which corresponded with a pencil-point image situated in the bronchial segment of the upper right lobe on oblique coronal reconstruction of the CT component (Figs. 1 and 2).

Bronchoscopy under sedation was performed with a negative bronchoalveolar lavage for malignancy. Nonetheless, considering the segmental localization of the image described, ultrasound-guided ultrafine bronchoscopy was performed, demonstrating compression in the bronchial of the posterior segment of the upper right lobe with a friable lesion of the mucosa. Biopsies were made, resulting in squamous cell carcinoma. Right upper lobectomy was carried out, confirming the presence of a T1b.

In this case the incidental finding of a hypermetabolic endobronchial lesion by PET/CT allowed early diagnosis of a non small-cell lung cancer with early radical treatment and the consequent prognostic implications.

The diagnosis of endobronchial lesions is normally late due to the unspecificity of the symptoms produced derived from obstruction of the airway (dyspnea, crackling) and irritation/ulceration of the mucosa (cough, hemoptysis) which appear on occlusion of 50–75% of the bronchial lumen.

Multidetector CT using 3D reconstruction techniques allows the detection of endobronchial lesions with a high sensitivity, but its specificity is low in the differentiation of benign and malignant obstructive processes, especially in cases in which the lesion is small in size.

The integrated PET/CT technique with $^{18}$F-FDG presents the advantage of allowing evaluation of the metabolism of the lesion,

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Fig. 1. Partially calcified peripheral nodule of 12 mm in diameter in the apical segment of the left upper pulmonary lobe. No anomalous uptake of $^{18}$F-FDG is presented, suggesting a benign nature, with no morphological changes in the post-surgical control.
Fig. 2. Intense hypermetabolic focal uptake ($SUV_{max}$ 4.4) in the upper lobe of the right lung. In the oblique coronal reconstruction of the CT it is superposed with the bronchium of the posterior segment of the right upper lobe. Ultrasound-guided ultrafine bronchoscopy demonstrates the presence of squamous cell carcinoma, with early diagnosis of this lesion allowing surgical treatment (T1bN0M0).

with only preliminary results having been reported on its utility. The absence of uptake of $^{18}$F-FDG is generally related to a benign cause, while uptake in the lesion indicates probable malignancy.\(^3\)

Cytology and/or histology by fibrobronchoscopy are the standard techniques for the diagnosis of obstructive endobronchial lesions.

References