

A case of thymoma detected by ^{18}F -choline positron emission tomography/computed tomography

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Received: 11 October 2010 / Accepted: 8 November 2010 / Published online: 17 December 2010
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Positron emission tomography/computed tomography (PET/CT) with choline, labelled with nuclides like ^{11}C or ^{18}F , is an important diagnostic tool in the management of oncologic diseases with low glucose metabolism and is currently employed in patients with prostate cancer (PC) [1, 2].

A 60-year-old man in restaging of PC underwent ^{18}F -choline PET/CT because of increased serum prostate-specific antigen (PSA) levels (2.25 ng/ml) and a bone scan suspicious for metastases 1 year after radical prostatectomy. The patient had not received hormone therapy in the 2 months previous to the exam date.

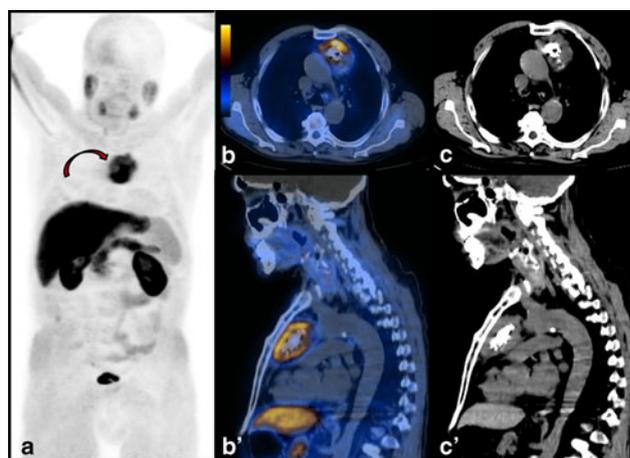
No lymph node or bone metastases were detected on ^{18}F -choline PET/CT. PET images showed prominent uptake in the mediastinum (a), with a maximum standardized uptake value (SUV_{max}) of 8. Fused PET/CT and CT views clearly showed that accumulation corresponded to a well-defined, non-homogeneous area of 6 cm with calcifications in the upper mediastinum (b, b', c, c').

The patient did not suffer any symptoms related to a "mediastinal mass" prior to performance of the exam.

Subsequently histopathological analysis, after a CT-guided biopsy, diagnosed epithelial thymoma.

It is known that proliferation of benign cellular types such as lymphocytes may be responsible for increased choline uptake in benign diseases such as phlogosis [3].

^{18}F -FDG PET/CT enables accurate preoperative evaluation of mediastinal masses, especially considering SUV_{max} as an indicator of malignant behaviour [4], but no data have been reported about choline uptake in thymoma.



In clinical practice nuclear physicians cannot exclude the possibility of abnormal uptake of choline, not related to PC, in some oncologic and non-oncologic conditions. Knowledge of CT findings is important; the histological exam still remains the most important step for diagnosis.

Conflicts of interest None.

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