

P.E.T. CASE OF THE MONTH

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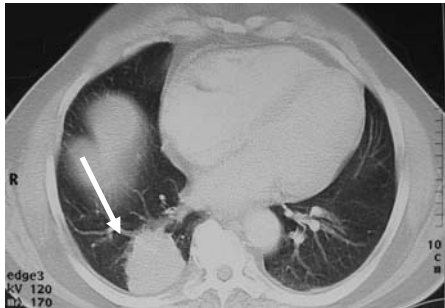


Fig. 1

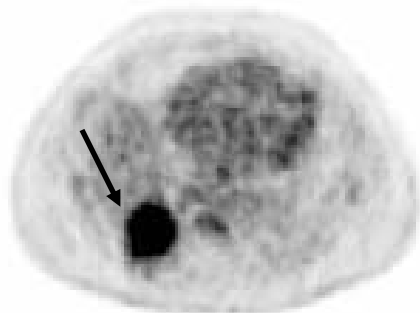


Fig. 2

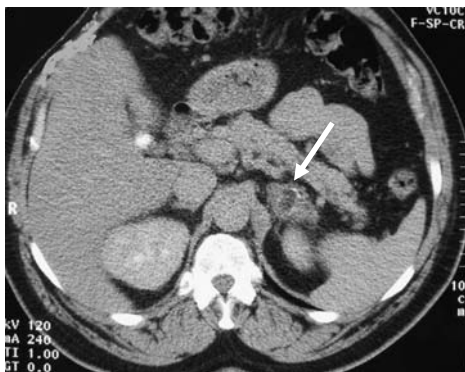


Fig. 3

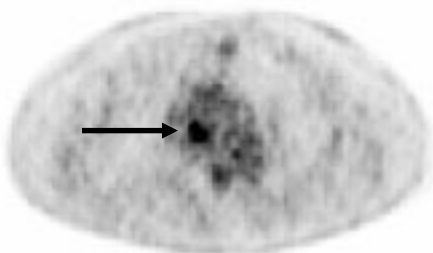


Fig. 4

This 65 year old patient was found to have a soft tissue density at the right lung base on routine chest radiograph. The chest CT showed a 6 X 5 cm lung mass in the right lower lobe (Fig. 1), a 5 X 3 cm left **adrenal mass** indeterminate for metastasis (Fig. 3) and no mediastinal adenopathy.

A PET scan was obtained for staging, which showed:

- Increased FDG uptake in the right lung mass (max SUV 7.6) consistent with malignancy (Fig. 2)
- Mediastinal adenopathy (Fig. 4)
- No increased FDG uptake in the left adrenal mass seen on CT consistent with a benign lesion

The patient underwent a mediastinoscopy yielding only benign lymph nodes. The right lower lobe mass was surgically resected. Pathology showed squamous cell carcinoma, grade 2, metastatic to one subcarinal lymph node. A repeat chest CT was obtained 10 months later, which showed no change in the left adrenal mass consistent with a benign etiology.

How did the PET help? The patient was accurately downstaged from stage IV (distant metastasis) to stage IIIA. The PET scan was more accurate than the CT and the mediastinoscopy in the evaluation of the mediastinum and the adrenal glands.

In a recent review of the current evidence for noninvasive staging of non-small cell lung cancer by the American College of Chest Physicians (1), pooled PET sensitivities and specificities for staging the mediastinum were 84% and 89%, respectively, as compared to 57% and 82% for CT. For patients who are operative candidates, where available, a whole-body PET scan was recommended to evaluate the mediastinum(2).

In another recent study evaluating the role of PET in characterizing adrenal lesions detected on CT and MRI, the sensitivity and specificity of PET was reported at 100% and 94% respectively (3).

- (1) CHEST 2003;123:137S-146S
- (2) CHEST 2003;123:147S-156S
- (3) J Nucl Med 2001;42:1795-1799

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This case and previous ones can be seen at
www.petcases.com