P.E.T. CASE OF THE MONTH

David W. Seldin, M.D. Franklin Square Hospital Center November 2003

Fig. 1

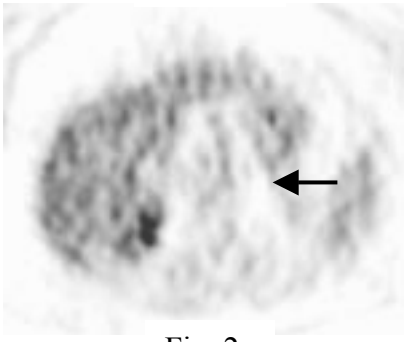

Fig. 2

Fig. 3

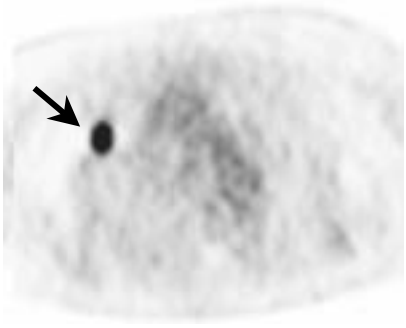

Fig. 4

Fig. 5

This 80 year old woman was being followed for a left adrenal mass found on an abdominal CT scan performed to evaluate abdominal pain (Fig. 1). A PET scan was ordered to further evaluate this lesion. The PET showed no abnormal uptake in the adrenal mass (Fig. 2), but an isolated focus of intense increased FDG uptake was noted in the upper lobe of the right lung (Fig. 3, 4). A chest CT scan was subsequently performed and revealed a solid nodule at the site of abnormal FDG uptake (Fig. 5). A biopsy showed a poorly differentiated squamous cell carcinoma, and a right upper lobectomy was performed. No lymph node metastases were present in the surgical specimens.

How did the PET help? : The PET was helpful in two ways. First, PET was able to characterize the adrenal mass as benign. Second, PET disclosed the presence of an unsuspected primary tumor in the lung, without evidence of metastases.

Two recent papers studying patients with adrenal masses showed that all malignant adrenal masses, whether primary or metastatic, showed FDG uptake greater than or equal to the liver. Masses with FDG uptake less than that in the liver were all benign[1,2].

Because most PET studies routinely image from the base of the skull through the thighs, occult malignancies may be detected. Recent papers have shown that malignancies unrelated to the reason for the study are found in 2-3% of patients, most commonly in the colon and thyroid[3,4].

(1) J Nucl Med 2001;42:884-892
(2) J Nucl Med 2001;42:1795-1799
(3) J Clin Endocrinol Metab 2003;88:4100-4104
(4) Radiology February 2004 (in press)

MedStar PET Services 410-933-2290
Gabriel Soudry, M.D. 443-777-7492

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