

LUNG

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This year, I treated a patient whose case illustrated the importance of having PET scanning available.

During treatment for a cardiac episode, this 64-year-old woman had undergone a chest x-ray

that revealed what appeared to be a lung nodule (See Fig. 1). At a nearby hospital, a CT scan showed an enlarged adrenal gland and implicated lymph nodes in her mediastinum. An MRI scan showed that the adrenal-gland condition was benign, but the patient was referred to us with the impression of lung cancer.

Data has shown that a combination of CT and PET scanning permits the cancer team to classify nodes in the mediastinum as normal or enlarged to a high degree of accuracy. PET performed at Main Line Health confirmed the primary lesion, showing a tumor that was highly suggestive of lung cancer. More importantly, though, all nodes were, in fact, negative on PET, as was the adrenal gland (See Fig. 2). This allowed

us to conclude that the patient was unlikely to have metastatic disease and was therefore a good candidate for surgery.

Two weeks later, the patient had a successful, thoroscopic, right-upper lobectomy at Paoli Hospital, and returned home within three days. She continues to do well now, several months later.

The patient did not wish to consider adjuvant chemotherapy treatment but is interested in participating in an ECOG trial at our institution of selenium supplements to prevent recurrences (for patients with a resected, stage 1, non-small cell lung cancer.)

We were fortunate to catch and accurately diagnose this cancer early. Without PET scanning, we would have had to biopsy the lung lesion and/or perform a mediastinoscopy to evaluate nearby nodes before proceeding with surgery, and we would have had to further investigate the adrenal gland. This would have meant a longer wait for, or recovery from, the primary surgery visit. All of this was avoided by the use of PET scanning.

PET

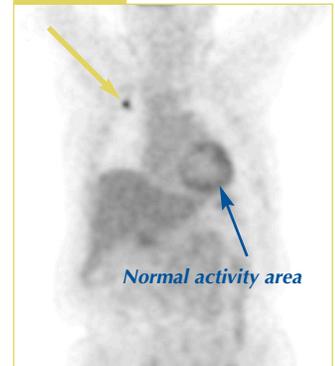


Fig. 1: Frontal view from whole-body PET shows “hot-spot” in right lung apex. Note normal cardiac activity.

PET

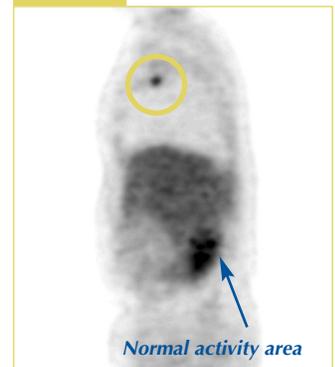


Fig. 2: Lateral view of PET showing apical tumor. Note normal kidney activity and **no evidence of adrenal metastasis.**

image review

By Valerie T. Hunt, MD *Main Line Health Imaging, Department of Radiology, Paoli Hospital*

Procedure: PET Imaging

We administered a positron emitting glucose solution of FDG-18 intravenously to the patient. Whole-body PET imaging was performed with a table scanning time of 35 minutes.

The scan revealed a solitary focus of intense radiotracer uptake in the right lung apex. This correlated with the lung nodule noted on the recent chest radiograph and CT scan. There is no abnormal mediastinal or hilar uptake. The liver

and spleen are normal. Specifically no-uptake was found in the adrenal gland.

In summary, the patient has a solitary focus of abnormal activity in the right lung apex. There is no evidence of metastatic disease. Conclusion: Stage 1 Lung Carcinoma.

(Study performed at Lankenau Outpatient Imaging Center and read by radiologist at Paoli Hospital.)

for more information

610-645-2PET (2738)

www.mainlinehealth.org

Main Line Health Imaging

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