

LUNG

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Imaging studies have transformed medical care, especially certain scanning techniques currently available. Among recent modalities, PET scanning is helping to save lives.

I have a patient who in some ways understands this even better than I, because she is aware that PET made a critical difference in the sequence of our decisions on her care.

In 2002, a routine mammogram revealed a breast cancer in this 56-year-old woman. At Paoli Hospital, the patient underwent a partial mastectomy and lymph node removal, followed by radiation therapy. I managed her hormone treatment and monitored her for about a year, at which point her CEA levels began to rise. This is normally a sign that the patient has a cancer recurrence or a new cancer.

In the full diagnostic work-up that we performed, the CT scan showed a mass in

the right upper lobe of her lung (See Fig. 1). Our decision to operate on the patient hinged on whether she might have more diffuse disease (in which case she would not have been a good candidate for surgery). This is where PET proved pivotal, offering information that was not available from other studies. In fact, the PET scan showed the lung mass to be the sole location of the cancer. We initially suspected that this tumor was a metastasis of her earlier breast cancer; however, a CT-guided needle biopsy showed the cancer to be a different enough form of adenocarcinoma to conclude that it was unrelated to the breast cancer (See Fig. 2).

We sent the patient for surgery, which confirmed an early, primary lung cancer. The patient suffers from multiple sclerosis, and so the surgical team sought to preserve as much lung capacity as possible, taking out only the right upper lobe of the lung. The nodes were clean, and I believe that there is a high likelihood that this patient is cured.

CT



Fig. 1: CT scan of right apical tumor. Note irregular borders of spiculated tumor.

PET

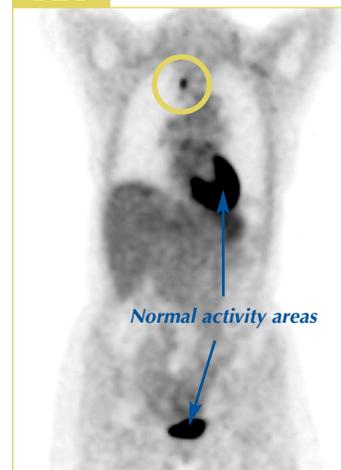


Fig. 2: Whole-body PET. "Hot spot" in right lung apex corresponds to tumor. Note normal cardiac and bladder activity.

image review

By Harris P. Miller, MD *Main Line Health Imaging, Department of Radiology, Paoli Hospital*

Procedure: PET Imaging

We administered the positron emitting glucose tracer FDG-18 intravenously to the patient. Whole-body PET scan was performed in a scanning time of approximately 35 minutes.

There is a focus of increased uptake medially in the right upper lobe of the lung. This corresponds with the soft-tissue mass seen on the recent CT scan. This is suspicious for metastatic cancer or possibly a second primary focus of lung cancer. There are no other areas of abnormal FDG uptake.

In summary, the patient has a solitary focus of abnormal activity in the right upper lung medially with the CT abnormality. No other areas of abnormal uptake are evident. Biopsy is recommended to determine the origin of this disease.

(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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