PET Case: B-Cell Lymphoma

This 67-year-old woman presented with left arm pain and swelling. On physical examination, she was found to have palpable adenopathy in the left supraclavicular and axillary regions. An ultrasound-guided biopsy showed large B-cell lymphoma. A staging CT scan of the chest (Figs. 1,2), abdomen, and pelvis was reported as showing marked left axillary adenopathy (arrowheads) with a question of a soft tissue mass associated with an anterior abdominal surgical scar.

A PET scan (Fig. 3) showed large conglomerate areas of uptake extending through the base of the neck on the left, the left supraclavicular region, the left axilla, and the left arm (arrows). Only physiologic bowel activity and renal excretion of tracer were present in the abdomen and pelvis.

How Did PET Imaging help?

PET was helpful in showing the full extent of disease, including left arm involvement that was not previously noted because the arms are routinely raised and out of the field of view on CT scans. PET also showed that there was no abdominal involvement. After successful completion of chemotherapy, the patient was referred to radiotherapy, where, based on the PET findings, the treatment field was extended to include the area of involvement in the left arm.

A number of studies have shown that PET is the most accurate staging modality for lymphoma, significantly better than CT and bone marrow biopsy, and that the use of PET leads in many cases to changes in therapy and improved outcomes. (See, for example, Eur J Nucl Med Mol Imaging. 2003;30(suppl 1):S82–S88; Q J Nucl Med. 2003;47:14–21; J Nucl Med. 2003;44:224–239; Acta Oncol. 2002;41:430–436; Ann Nucl Med. 2002;16:337–345; Cancer. 2001;91:889–899.)

About Views You Can Use

This case was provided by Gabriel Soudry, MD, director of nuclear medicine at Franklin Square Hospital in Baltimore, MD. He regularly features examples of the benefits of PET on his outreach Web site at http://petcases.com. “Many of us in imaging are accustomed to seeing teaching cases that are unusual or rare,” he told the PCOE Newsletter. “But I select our PET cases precisely because they are commonplace. We want to have a battery of examples of the kinds of cases that our referring physician community commonly encounter in their daily practice so that they can see how PET can benefit their patients. We want them to think of PET as a routine, useful adjunct to the work-up of their patients.” In addition to the Web site, Soudry also mails printed versions of his example cases to the referring physicians both within Franklin Square and in the surrounding community.

Working with Soudry and other PET specialists, the PCOE Web site (www.snm.org/PET) will feature regular “Views You Can Use,” single-sheet PDFs that include specific cases, images, and references to supporting documentation. As a PCOE member, you can add your own contact information to these sheets and distribute them electronically or by printed hardcopy to referring physicians for educational purposes.