



Nuclear Medicine

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Services

Lymphoma

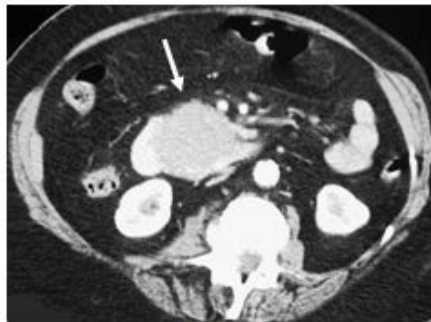


Fig. 1a

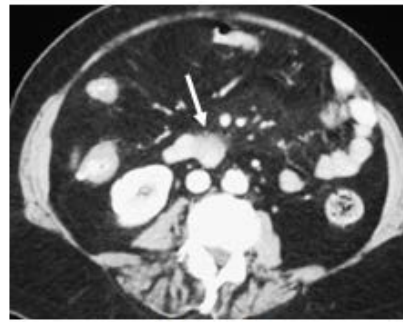


Fig. 2a



Fig. 3a

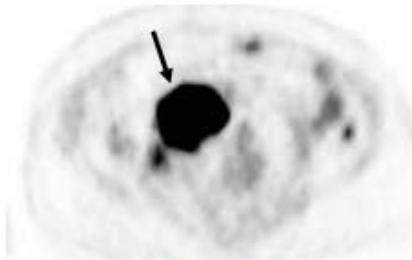


Fig. 1b

BEFORE CHEMOTHERAPY

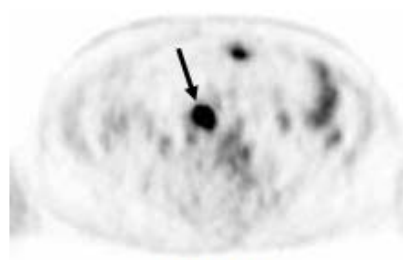


Fig. 2b

AFTER CHEMOTHERAPY

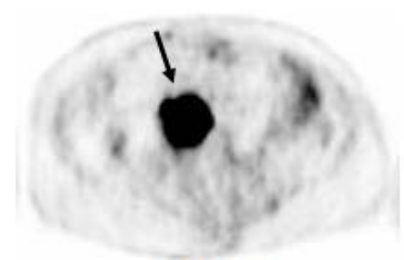


Fig. 3b

AFTER RADIATION

This patient was found to have a large abdominal mass (6.5 cm) on CT (Fig. 1a). Biopsy revealed a malignant **lymphoma**, large cell, B-cell type. A PET scan (Fig. 1b) was obtained for staging which showed intense FDG uptake in the abdominal mass (max SUV: 14) and no other findings. The patient received standard chemotherapy. A repeat CT (Fig. 2a) showed a possible 2 cm residual mass in the abdomen difficult to separate from surrounding loops of bowel. The PET scan (Fig. 2b) showed persistent intense FDG uptake in that mass (max SUV: 15) consistent with persistent disease. The patient then underwent radiation therapy (4500 rads) to the residual mass. A subsequent CT (Fig. 3a) showed an increase in size of the abdominal mass and no other findings. The PET scan (Fig. 3b) showed higher FDG uptake in the mass (max SUV: 22) and 3 new lesions in the abdomen and pelvis (not shown).

How did the PET help?

The PET performed after chemotherapy confirmed active disease rather than fibrosis in the residual abdominal mass, which prompted the decision to administer radiation therapy. The PET performed after radiation therapy confirmed progression. The patient is now receiving salvage chemotherapy and is being considered for stem-cell transplant.

In a recent study (1) involving 93 patients with non-Hodgkin's lymphoma, the ability of PET in detecting residual lymphoma was evaluated. The positive and negative predictive values were found to be 100% and 83.5% respectively. In another study (2) involving 54 patients with Hodgkin's disease (19 patients) and non-Hodgkin's lymphoma (35 patients), the positive predictive value of PET for the detection of vital tumor post therapy was measured at 100% as compared with 42% for CT.

(1) J Clin Oncol 2001;19:414-419

(2) Blood 1999;94(2):429-433