History and Findings
A 38-year-old female presented with mixed-cell Hodgkin’s Lymphoma. CT study showed multiple cervical, mediastinal, and retroperitoneal adenopathy. Initial staging PET scan demonstrated multiple areas of increased FDG uptake in the neck, lung, mediastinum, retroperitoneal nodes, pelvic nodes, and spleen (image A). The patient then underwent six cycles of chemotherapy (ABVD). A restaging PET scan indicated a good response. There is, however, residual intense uptake as seen in the left iliac node and a new focus of uptake seen in the left proximal femur (image B).

The patient then underwent two cycles of chemo (CEPP). Repeat PET showed no significant improvement, with recurrent lymphoma in the neck, chest, and abdomen. The patient then underwent bone marrow transplant (BMT). A post-BMT PET scan showed complete resolution of lymphoma (image C). Yearly follow-up PET scan revealed no recurrent lymphoma (image D).

How Did PET Change Patient Management?
The results of the PET scan upgraded the stage of the disease from Stage III to Stage IV. PET played an important role in guiding the patient’s treatment, and in then monitoring for recurrence.

Discussion
FDG PET whole-body scanning for primary staging of lymphoma is superior to conventional staging techniques by a factor of 10-20%. Hodgin’s and most non-Hodgkin’s lymphoma are FDG avid. One exception is MALT lymphoma which is less FDG avid. Advantages of PET for management of lymphoma patients include early prediction of response to chemotherapy and evaluation of residual mass. In many institutions, PET has replaced other modalities for restaging of lymphoma.