

More accurate staging of Lymphoma in PET imaging

Assessment of treatment response with PET/CT is more accurate than CT alone in identifying residual disease due to abnormal tracer uptake visualized in normal-sized nodes without changes in organ structure.¹

PET/CT use in lymphoma¹

Indication	Benefit
Pre-treatment: <ul style="list-style-type: none"> • Staging • Biopsy guidance of suspected site • Assessment of bone marrow involvement • Radiotherapy planning 	<ul style="list-style-type: none"> • Accuracy detection of nodal and extranodal involvement • Improved treatment selection and disease characterization • Improved accuracy compared to biopsy • Defined radiotherapy volume • Less irradiation of normal tissue
Mid-treatment: <ul style="list-style-type: none"> • Imaging to monitor response Post treatment: <ul style="list-style-type: none"> • To confirm disease remission 	<ul style="list-style-type: none"> • Useful to detect poor or no response early in treatment • Accuracy of early assessment of response improved over mid-treatment CT • Accurate assessment of remission • To direct biopsy if residual disease is suspected
Relapse: <ul style="list-style-type: none"> • Pre-transplant assessment 	<ul style="list-style-type: none"> • Accuracy in patients undergoing stem cell transplant

International Conference on Malignant Lymphomas (ICML) Imaging working group updated guidelines on PET/CT for staging and response assessment²

- Staging and assessment of tracer-avid lymphomas is recommended using visual assessment, and the Deauville 5-point scale is recommended for reporting PET/CT
- PET/CT is recommended for mid-therapy assessment in place of CT alone, if imaging is indicated
- PET/CT is to be used for remission assessment in tracer-avid lymphoma

Medicare recognizes the utility of PET and PET/CT in lymphoma.³

Initial Treatment Strategy (Diagnosis and Staging)

- To determine whether or not the beneficiary is an appropriate candidate for an invasive diagnostic or therapeutic procedure; or
- To determine the optimal anatomic location for an invasive procedure; or
- To determine the anatomic extent of tumor when the recommended anti-tumor treatment reasonably depends on the extent of the tumor.

Subsequent Treatment Strategy (Restaging)

- After completion of treatment for the purpose of detecting residual disease; or
- For detecting suspected recurrence or metastasis; or
- To determine the extent of a known recurrence; or

- If it could potentially replace one or more conventional imaging studies when it is expected that conventional study information is insufficient for the clinical management of the patient.

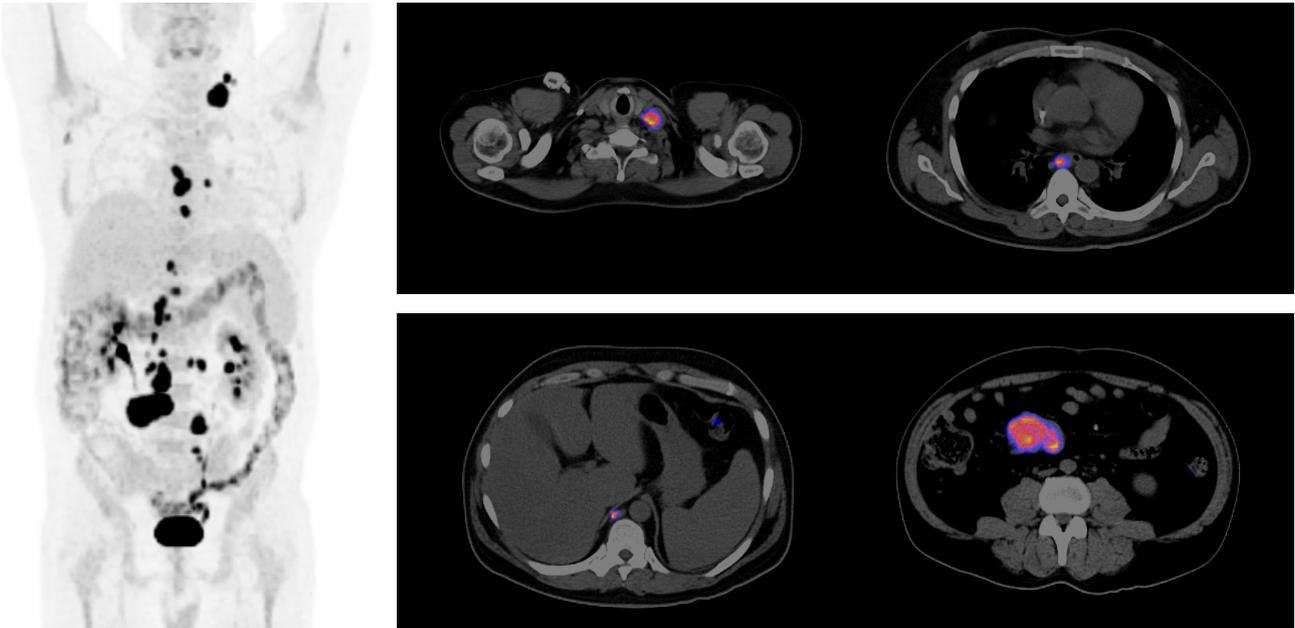
Restaging applies to testing after a course of treatment is completed, and is covered subject to the conditions above.

Monitoring response to therapy

PET is covered for monitoring tumor response to treatment during the planned course of therapy (ie, when a change in therapy is being considered).

The ordering physician is responsible for documenting the medical necessity of the PET scan and that it meets these criteria.

PET/CT reveals the extent of metastases in patients with lymphoma



Data courtesy of University of Tennessee Medical Center, Knoxville, Tennessee, USA.

History

A 46-year-old male with a history of lymphoma diagnosed 6 years ago and treated with chemotherapy. The patient recently presented with palpable enlarged left cervical lymph node. A biopsy was performed due to suspicion of disease recurrence, revealed stage 3B high-grade lymphoma. The patient completed 2 cycles of chemotherapy regimen and a PET/CT scan was obtained to assess residual disease.

Imaging findings

Scattered bulky hypermetabolic lymphadenopathy involving neck, chest, abdomen, pelvis, and splenomegaly concerning for recurrent lymphoma.

Overall evaluation

PET/CT is commonly used in management of patients with lymphoma and is recommended for both initial staging and response assessment after treatment. This particular case represents high-grade lymphoma, which is very tracer avid.

PET/CT assists in distinguishing between scar tissue and viable tumors in residual masses.⁴

¹ Barrington SF, et al. When should FDG-PET be used in the modern management of lymphoma? *Br J Haematol.* 2014; Feb;164(3):315-28.

² Barrington SF, et al. Role of imaging in the staging and response assessment of lymphoma: consensus of the international conference on malignant lymphomas imaging working group. *J Clin Oncol.* 2014 Sep 20; 32(27): 3048–3058.

³ CMS Publication 100-03, Medicare National Coverage Determinations Manual, Chapter 1, Part 4, Section 220.6). Available at http://www.cms.hhs.gov/manuals/downloads/ncd103c1_part4.pdf

⁴ Bodet-Milin, et al. FDG-PET in follicular lymphoma management. *J Oncol.* 2012; Jul30.

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