# Changing PET/CT manifestation of neurolymphomatosis

Klaus Strobel[1], Bernhard Pestalozzi[2], Ilja Ciernik[3], Niklaus G. Schaefer[1], Abbas Yousefi Koma[1], Thomas F. Hany[1]

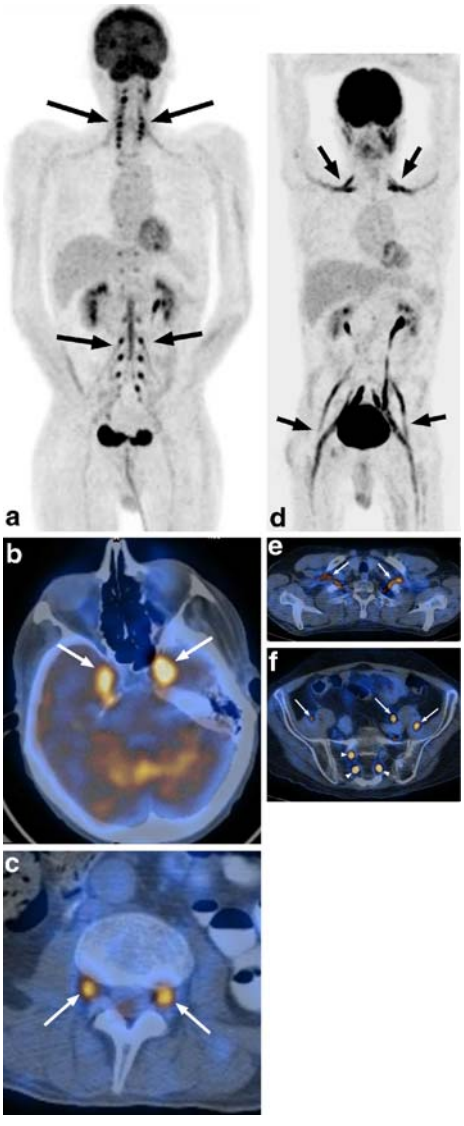
[1] Division of Nuclear Medicine, University Hospital Zurich, Rämistrasse 100, 8091 Zurich, Switzerland
[2] Department of Oncology, University Hospital Zurich, Zurich, Switzerland
[3] Department of Radiation Oncology, University Hospital Zurich, Zurich, Switzerland

Received: 6 February 2006 / Accepted: 19 February 2006 / Published online: 6 July 2006


**Eur J Nucl Med Mol Imaging (2006) 33:1244**
DOI 10.1007/s00259-006-0112-8

Neurolymphomatosis (NL) is a rare manifestation of lymphoma [1]. CT and MRI have been used to detect NL, to stage the extent of the nerve involvement and to guide biopsy. Recent reports have demonstrated the value of FDG-PET/CT in patients with NL [2–4]. Here we present the FDG-PET/CT imaging follow-up of a 56-year-old patient with diffuse large B-cell lymphoma initially presenting as stage IE involving the urinary bladder and presacral area. After six cycles of chemotherapy and pelvic radiation therapy, a complete response was documented. However, there was relapse of the lymphoma, restricted to neural structures. In **a–c** the PET/CT images demonstrate increased FDG uptake in the cranial nerves, delineated on fused axial images [**b**, gasserian ganglion of the trigeminal nerve (*arrows*) and **c** the cervical and lumbar nerve roots (*arrows*)]. The patient was treated with high-dose methotrexate and subsequent radiation therapy. Six weeks after the end of radiation therapy, progressive NL (**d–f**) in the brachial (**e**, *arrows*) and lumbosacral plexus (**f**, *arrows*) was observed.

Because in NL nerve biopsies may fail and MRI may not be sufficiently sensitive to show the entire extent of nerve involvement, FDG-PET/CT with whole-body imaging and exact anatomical correlation is useful in staging, biopsy guidance, treatment planning and therapy assessment [5].




## References

1. Baehring JM, Damek D, Martin EC, Betensky RA, Hochberg FH. Neurolymphomatosis. Neuro-oncol 2003;5:104–15
2. Bokstein F, Goor O, Shihman B, Rochkind S, Even-Sapir E, Metser U, et al. Assessment of neurolymphomatosis by brachial plexus biopsy and PET/CT. Report of a case. J Neuro-oncol 2005;72:163–7
3. Kanter P, Zeidman A, Streifler J, Marmelstein V, Even-Sapir E, Metser U, et al. PET-CT imaging of combined brachial and lumbosacral neurolymphomatosis. Eur J Haematol 2005;74:66–9
4. Trojan A, Jermann M, Taverna C, Hany TF. Fusion PET-CT imaging of neurolymphomatosis. Ann Oncol 2002;13:802–5
5. van den Bent MJ, de Bruin HG, Bos GM, Brutel de la Riviere G, Sillevis Smitt PA. Negative sural nerve biopsy in neurolymphomatosis. J Neurol 1999;246:1159–63

Klaus Strobel (✉)
Division of Nuclear Medicine, University Hospital Zurich,
Rämistrasse 100, 8091 Zurich, Switzerland
e-mail: klaus.strobel@usz.ch
Tel.: +41-44-2552850; Fax: +41-44-2554414