

A case of non-Hodgkin's lymphoma infiltrating the brachial plexus detected by Ga-67 scintigraphy

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The author reports a rare case of brachial plexus infiltration by non-Hodgkin's lymphoma. T2-weighted MRI showed high signal intensity along the right brachial plexus and soft tissue masses. Ga-67 scintigraphy showed abnormal tracer uptake along the course of the right brachial plexus, and was superior to MRI in detecting the abnormality.

Key words: malignant lymphoma, brachial plexus, gallium-67, MRI

INTRODUCTION

THERE ARE FEW REPORTS ON brachial plexus infiltration by non-Hodgkin's lymphoma (NHL).^{1–3} The author reports a rare case of brachial plexus infiltration by NHL detected by Ga-67 scintigraphy.

CASE REPORT

A 46-year-old female began to have pain and numbness in the right shoulder and upper arm. For the past three months the patient had been treated with CHOP (cyclophosphamide, adriamycin, vincristine and predonisolone) for NHL stage IV (extranodal, diffuse large B cell). Before therapy abnormal Ga-67 uptake in the breasts, ovary and bone marrow was recognized, and the serum soluble interleukin-2 receptor (sIL-2R) level was 12,300 U/ml (normal range 145–519 U/ml). Two months later the sIL-2R level was 685 U/ml.

At this time the sIL-2 level was 1,380 U/ml. T2-weighted MR (TR/TE 3700/120) images showed high signal intensity along the right brachial plexus and soft tissue masses (Fig. 1 lower, arrow), although T1-weighted MR (TR/TE 480/15) images were equivocal (Fig. 1 upper). Ga-67 scintigraphy showed abnormal tracer uptake along the course of the right brachial plexus (Fig. 2). Cytologic examination of the cerebrospinal fluid revealed abnormal cells. Although histopathological examination

could not be performed, brachial plexus infiltration by NHL was thought to be convincing.

The patient was treated with methotrexate and cytarabine with symptomatic improvement, but the patient died of progressive disease one year after the onset despite the intensive treatment. Follow-up Ga-67 scintigraphy and MRI could not be performed and an autopsy was not obtained.

DISCUSSION

Lesions of NHL in the brachial plexus are reported to be usually the result of compression by adjacent enlarged lymph nodes. Van Echo et al. have reported a case of Hodgkin's disease with massive supraclavicular lymph node enlargement causing weakness and paresthesia in the left arm and loss of the left radial pulse.⁴ To the best of my knowledge, there are only three case reports on NHL directly infiltrating the brachial plexus without adjacent lymphadenopathy.^{1–3} The value of Ga-67 scintigraphy in the detection of brachial plexus infiltration by NHL is well illustrated in all three reports. MR images showing a soft tissue mass are also described in two case reports.^{2,3} In the present case, Ga-67 scintigraphy was superior to MRI in detecting the abnormality and this finding was consistent with those of previous reports.

NHL of the nerve system should be diagnosed early because of its poor prognosis.⁵ To differentiate infiltration by NHL from cervical spondylosis, peripheral neuropathy caused by side effects of the drug and paraneoplastic syndrome was thought to be very important.^{6,7} In the present case, Ga-67 scintigraphy was very useful for the evaluation of this rare condition.

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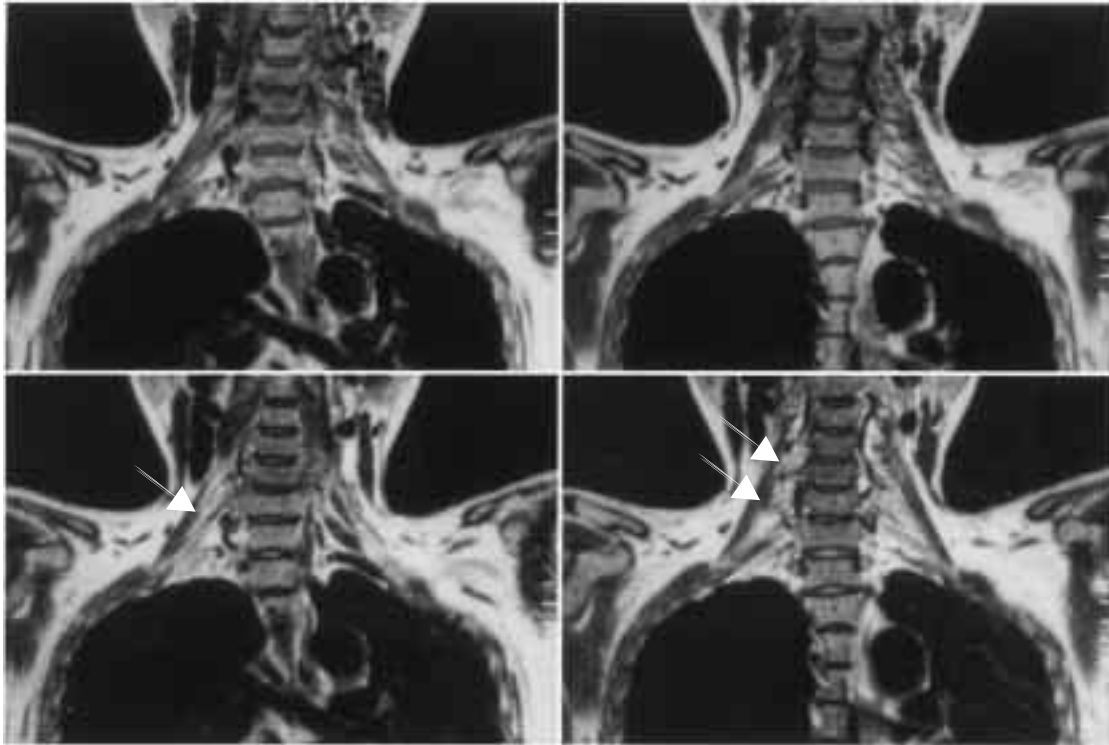


Fig. 1 T2-weighted MR images showed high signal intensity along the right brachial plexus and soft tissue masses (lower, arrow), although T1-weighted MR images were equivocal (upper).



Fig. 2 Ga-67 scintigraphy showed abnormal tracer uptake along the course of the right brachial plexus.

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REFERENCES

1. Suzuki M, Watanabe T, Mogi G. Primary non-Hodgkin's lymphoma of brachial plexus. *Auris Nasus Larynx* 1999; 26: 337–342.
2. Usuki K, Yuo A, Muto Y, Yamaguchi H, Tsukada T, Honda K. Primary malignant lymphoma of the left brachial plexus. *Jpn J Clin Hematol* 1988; 29: 1125–1128.
3. Liang R, Kay R, Maisey MN. Brachial plexus infiltration by non-Hodgkin's lymphoma. *Br J Radiol* 1985; 58: 1125–1129.
4. Van Echo DA, Sickles EA, Wiernik PH. Thoracic outlet syndrome, supraclavicular adenopathy, Hodgkin's disease. *Ann Internal Med* 1973; 78: 608–609.
5. Jellinger K, Radaskiewicz TH, Slowik F. Primary malignant lymphoma of the central nervous system in man. *Acta Neuropathol (Berl)* 1975; 6 (Suppl): 95–102.
6. Gherardi R, Gaulard P, Prost C, Rocha D, Imbert M, Andre C, et al. T-cell lymphoma revealed by a peripheral neuropathy. A report of two cases with an immunohistologic study on lymph node and nerve biopsies. *Cancer* 1986; 58: 2710–2716.
7. Vallet JM, De Mascarel HA, Bordessoule D, Jauberteau MO, Tabaraud F, Gelot A, et al. Non-Hodgkin malignant lymphomas and peripheral neuropathies—13 cases. *Brain* 1995; 118: 1233–1245.