Painful neuropathy due to intraneural leukemic spread in a patient with acute myeloid leukemia

Figure Sural nerve biopsy results

Hematoxylin and eosin staining (magnification $\times 100$, inset $\times 400$) of a sural nerve fascicle with infiltrates of pleomorphic lymphoid cells with large nuclei (A). Lymphoid cells express CD45 (B), lysozyme (C), and CD117 (D), signifying myeloid leukemic cells. Ki-67 equivalent antigen (MIB-1) staining reveals a proliferation index of $>70\%$ in tumor cells (E, magnification of immunostains $\times 100$, insets $\times 400$).

A 33-year-old man with acute myelogenous leukemia developed a rapidly progressive painful neuropathy with symmetric sensorimotor and autonomic deficits 7 weeks after chemotherapy. Nerve conduction studies showed axonal sensorimotor neuropathy. Because of the rapidly progressive course, a sural nerve biopsy was performed, which showed intraneural leukemic infiltrates (figure). This case illustrates a rare but important differential diagnosis in patients with peripheral neuropathy and hematologic malignancies.^{1,2} The diagnosis would have been missed without a sural nerve biopsy, and aggressive chemotherapy might have been withheld owing to presumed toxic neuropathy as a result of previous chemotherapy.

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