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Meningeosis myelomatosis

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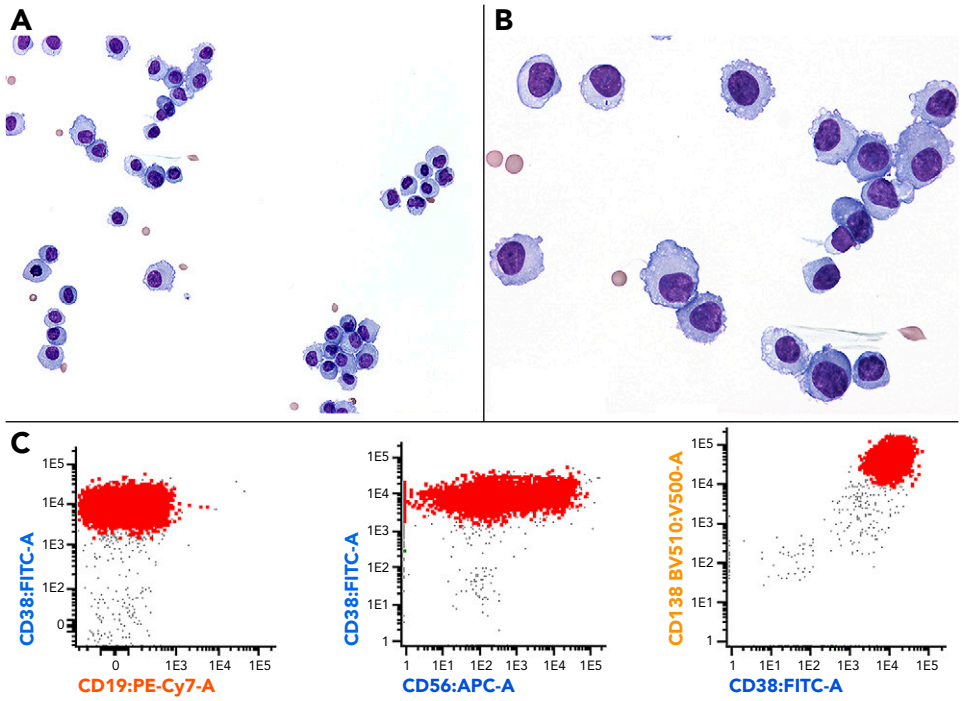

A 65-year-old woman with relapsed, refractory immunoglobulin A lambda plasma cell (PC) leukemia and cutaneous extramedullary disease, previously treated with intensive chemotherapy and tandem autologous stem cell transplantation (auto-SCT), presented 24 months after diagnosis with right upper-extremity weakness, slurred speech, ptosis, and diplopia. Magnetic resonance imaging (MRI) and MRI angiogram of the brain and neck were unremarkable. Lumbar puncture showed clear cerebrospinal fluid (CSF) with protein of 80 mg/dL (reference, 15-45 mg/dL) and a white blood cell count of 0.250 $\times 10^3/\mu L$ with >90% atypical PCs (panels A-B; original magnification $\times$200 [A], $\times$400 [B]; Wright-Giemsa stain). CSF flow cytometry analysis detected 96% aberrant PCs positive for CD38, CD138, CD45 (variable), and CD56 (variable), and negative for CD19, CD20, CD27, and CD81 (panel C; APC, allophycocyanin; FITC, fluorescein isothiocyanate; PE, phycoerythrin). The patient was diagnosed with meningeosis myelomatosis and received intrathecal chemotherapy with cytarabine/methotrexate/dexamethasone, as well as systemic intensive chemotherapy (cisplatin, cytarabine, cyclophosphamide, etoposide, dexamethasone), melphalan/cisplatin/doxorubicin/etoposide–based auto-SCT, and trametinib (due to *KRAS* G12V mutation). Despite therapy, the patient died 5 months after receiving a diagnosis of meningeosis myelomatosis and refractory, progressive multiple myeloma.

Meningeosis myelomatosis is a rare clinical manifestation of multiple myeloma with a very poor prognosis. The diagnosis is challenging as imaging studies of brain and spine may be completely unremarkable. CSF analysis is the gold standard for diagnosis. Meningeosis myelomatosis should be considered in multiple myeloma patients with acute neurological symptoms.

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