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Extensive involvement of multiple cranial nerves in relapsed multiple myeloma

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A 36-year-old man with relapsed IgG-kappa multiple myeloma presented with bilateral lower extremity weakness and ptosis. He had previously undergone two autologous hematopoietic stem cell transplantations following multiple chemotherapy regimens. Contrast-enhanced T1-weighted brain MRI demonstrated linear thickening and enhancement of bilateral oculomotor (III), trochlear (IV), trigeminal (V), facial–vestibulocochlear (VII–VIII), glossopharyngeal–vagal (IX–X), and the right abducens (VI) nerve at the level of the brainstem. The enhancement pattern was predominantly linear without nodular mass formation or foraminal widening. No diffusion restriction or abnormal FLAIR signal was observed. Spinal MRI revealed nodular leptomeningeal involvement of the conus medullaris and cauda equina nerve roots (not shown here). Consistent with laboratory findings and systemic relapse, the imaging features were attributed to progression of multiple myeloma in the central nervous system. The linear cranial nerve enhancement, together with nodular involvement of the cauda equina, was radiologically consistent with leptomeningeal dissemination. Cranial nerve involvement in multiple myeloma is rare and typically associated with leptomeningeal spread [1, 2]. Differential diagnoses include leptomeningeal metastasis, infectious neuritis, and inflammatory cranial neuropathies.

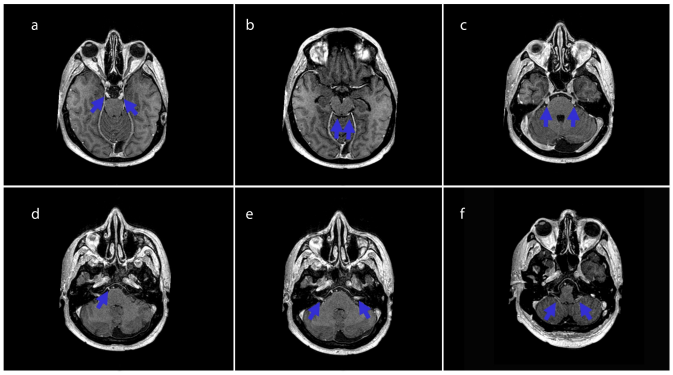

Figure 1. Contrast-enhanced thin-slice (1 mm) axial T1-weighted images demonstrate linear enhancement of bilateral oculomotor (III) (a), trochlear (IV) (b), trigeminal (V) (c), right abducens (VI) (d), bilateral facial--vestibulocochlear (VII--VIII) (e), and glossopharyngeal--vagal (IX--X) (f) nerves (arrows).

Informed Consent: The manuscript contains only fully anonymized radiological images and non-identifiable clinical information; therefore, written informed consent was not required.

Conflict of Interest: The authors declare that they have no conflict of interest.

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