Primary Central Nervous System Lymphoma Mimicking Neuro-Behçet Disease

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Background: Primary CNS lymphoma (PCNSL) is an extranodal malignant lymphoma arising inside the CNS in the absence of systemic diffusion at the time of diagnosis (1). Some patients develop "sentinel" inflammatory lesions (SILs) months before the manifestation of PCNSL (2). We report a case of probable Neuro-Behçet Disease, ultimately diagnosed with PCNSL.

Case report: a 45-year-old Moroccan woman was admitted in April 2016 to our Neurology Department because of a one-week history of diplopia, unsteadiness and gait ataxia. Brain MRI showed multifocal T2-FLAIR hyperintensities involving the brainstem, right lenticular capsular region and cerebellum (fig.1).

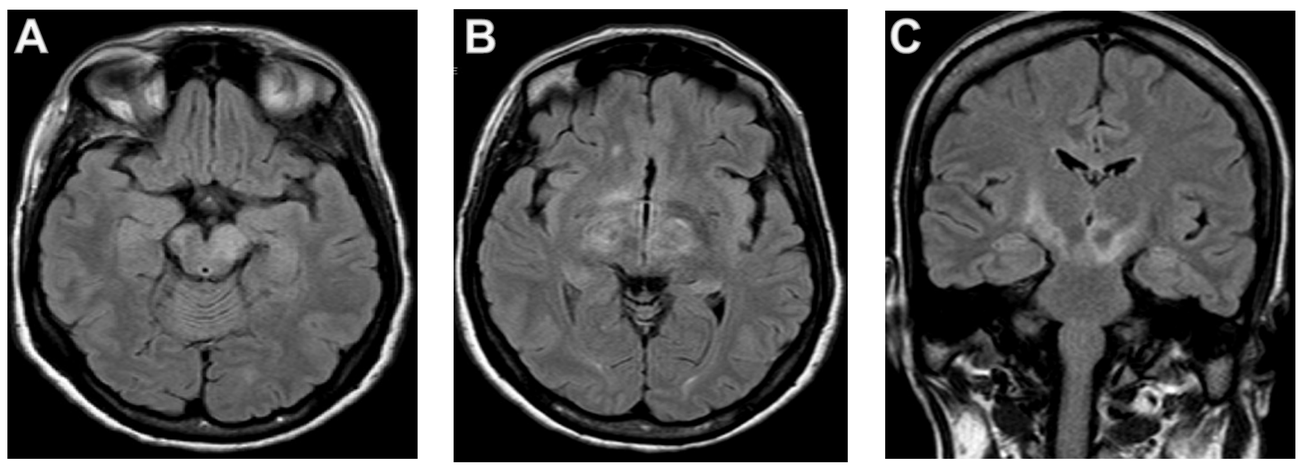

Fig.1 *April 2016; Axial (A, B) and coronal (C) FLAIR MRI show hyperintense lesions in the left cerebral peduncle and in the right globus pallidus and posterior limb of the internal capsule.*

Extensive laboratory blood tests were unremarkable. CSF analysis (including cytology, IgG index and oligoclonal bands, bacterial cultures and PCR for viruses), spinal MRI, MR Angiography, total body CT scan and echocardiogram were normal. The patient experienced only partial improvement with intravenous corticosteroids.

She also received five cycles of plasmapheresis and then was followed with monthly MRI, which showed a gradual decrease in the size of the right basal ganglia lesions and simultaneously revealed new T2-hyperintense areas in the brainstem and in the left basal nuclei (fig 2A).

Then, she began to complain of blurred vision and photophobia in the left eye and fundus examination and fluorescein angiography revealed vitritis and retinal vasculitis. Therefore, she started cyclophosphamide and prednisone and remained stable until January 2017, when she manifested a severe left arm dysmetria. A new contrast-enhanced lesion was evident in the right basal ganglia (fig. 2 B,C) on MRI. MRS on the right basal ganglia revealed an increased Cho/Cr and a decreased NAA/Cr ratio with a small lactate peak (fig. 2D). A choline PET resulted in an increased uptake in the same region. Since a lymphoproliferative disease could not be excluded, she underwent brain biopsy after steroid withdrawal. Histological examination revealed a **lympho-histiocytic infiltration with features suggestive of an inflammatory process** (2E).

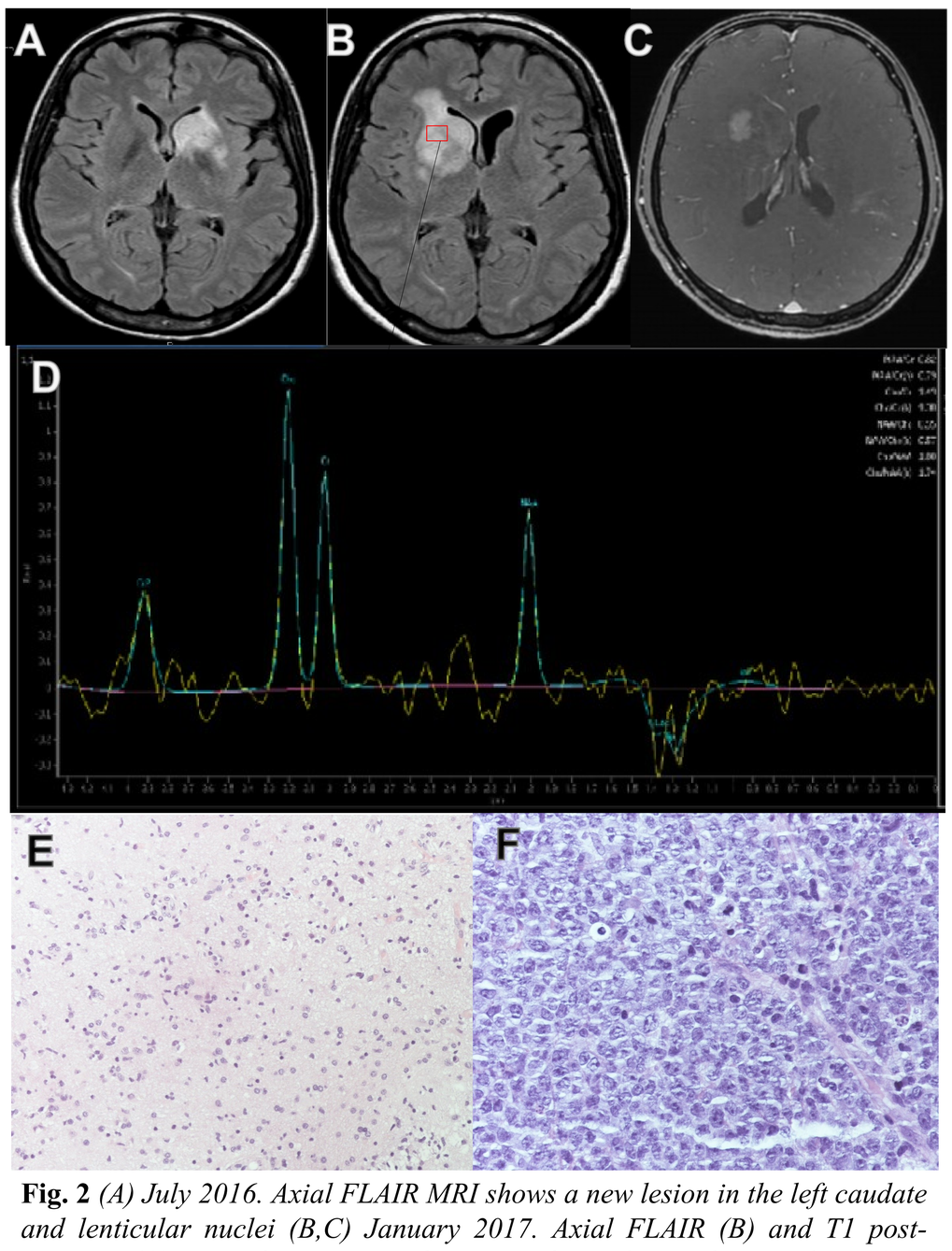

Fig. 2 *(A) July 2016. Axial FLAIR MRI shows a new lesion in the left caudate and lenticular nuclei (B,C) January 2017. Axial FLAIR (B) and T1 post-contrast (C) MRI shows a new lesion in the right caudate nucleus. (D) Lactate peak on MRS (arrow). (E) April 2017 (first biopsy). The histological examination shows gliotic brain parenchyma with an intense lympho-histiocytic infiltrate (H&E, x20). (F) May 2017 (second biopsy). H&E staining of non-germinal centre (NGC) diffuse large B cell lymphoma (DLBCL) (X 40).*

Although the patient had never manifested orogenital ulcers, probable **Neuro-Behçet disease** was hypothesized (3) and she started therapy with infliximab.

Nevertheless, a month later, the patient was urgently readmitted for alteration of level of consciousness. The right basal ganglia lesion was newly biopsied and histological examination revealed now **primary diffuse large B-cell lymphoma of the CNS** (2F).

Discussion: This case confirms that the development of primary CNS lymphoma may be preceded by sentinel inflammatory lesions with subsequent rapid progression, thus requiring a careful evaluation and meticulous diagnosis. The SILs may be the first immunologic response mounted against developing PCNSL.

References

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