The great imitator: mesial temporal alterations in MRI in an atypical case of neurosyphilis☆,☆☆

La gran imitadora: alteraciones mesiotemporales en RM en una presentación atípica de neurosífilis

Dear Editor:

In recent years, incidence of syphilis and neurosyphilis has been increasing worldwide.[1] The classic forms of neurosyphilis include meningitis, meningovascular syphilis, general paresis, and tabes dorsalis, with the latter 2 generally presenting at later stages.[2] In the pre-antibiotic era, tabes dorsalis was the most frequent form.[3] However, the most frequently diagnosed forms today are asymptomatic and meningeal or meningovascular neurosyphilis (early forms).[4] Furthermore, atypical manifestations of the disease are more frequently being identified.[5] Cases mimicking viral encephalitis[6–8] have been described, with rapidly progressive neuropsychiatric alterations that may be associated with seizures and neuroimaging findings of bilateral medial temporal hyperintensites; these cases have been attributed to meningovascular involvement causing oedema, as well as a certain degree of gliosis. These changes are at least partially reversible with antibiotic treatment, in parallel with improvement of clinical symptoms.

We describe a case illustrating an atypical clinical and radiological presentation of neurosyphilis. The patient was a 25-year-old man with rapidly progressing cognitive impairment associated with behavioural alterations (agitation and hetero-aggression) of 2 weeks' progression. He did not present fever, skin lesions, or any other associated clinical symptom. Physical examination revealed severely impaired short-term memory, dysexecutive syndrome, apathy, emotional lability, and frontal release signs.

In a brain MRI study, T2-weighted/FLAIR sequences showed increased signal intensity in mesial temporal structures (Fig. 1). The serology study returned positive results for *Treponema pallidum* antibodies (IgG and IgM, enzyme immunoassay) as well as high titres in the rapid plasma regain test. A CSF analysis showed high protein levels (107 mg/dL), with a normal cell count and glucose level; the Venereal Disease Research Laboratory test was positive. The patient received a 14-day cycle of penicillin G sodium, which significantly improved clinical and radiological symptoms. Four weeks after treatment onset, a follow-up MRI scan revealed a slight improvement of the parenchymal involvement, with decreased temporal and insular oedema. A one-year follow-up MRI scan showed only a slightly increased signal intensity in the temporal poles and perisylvian region (Fig. 2). In the first months of follow-up, the patient showed progressive clinical improvement and was able to resume his daily activities. A neuropsychological study performed at 3 months of treatment completion revealed a slight improvement in working memory and executive aspects.

Neurosyphilis may manifest with rapidly progressive neuropsychiatric alterations associated with mesial temporal lesions in neuroimaging studies, mimicking viral encephalitis; therefore, it should be included in the differential diagnosis of patients with these symptoms.[6,8,9] Due to the lack of a sufficiently sensitive and specific diagnostic test, we should bear in mind that diagnosis is mainly based on clinical suspicion and CSF alterations. Treatment consists of the intravenous administration of penicillin.[10,11] In conclusion, clinical suspicion is essential in these cases, since an available, affordable, and efficient treatment is available.

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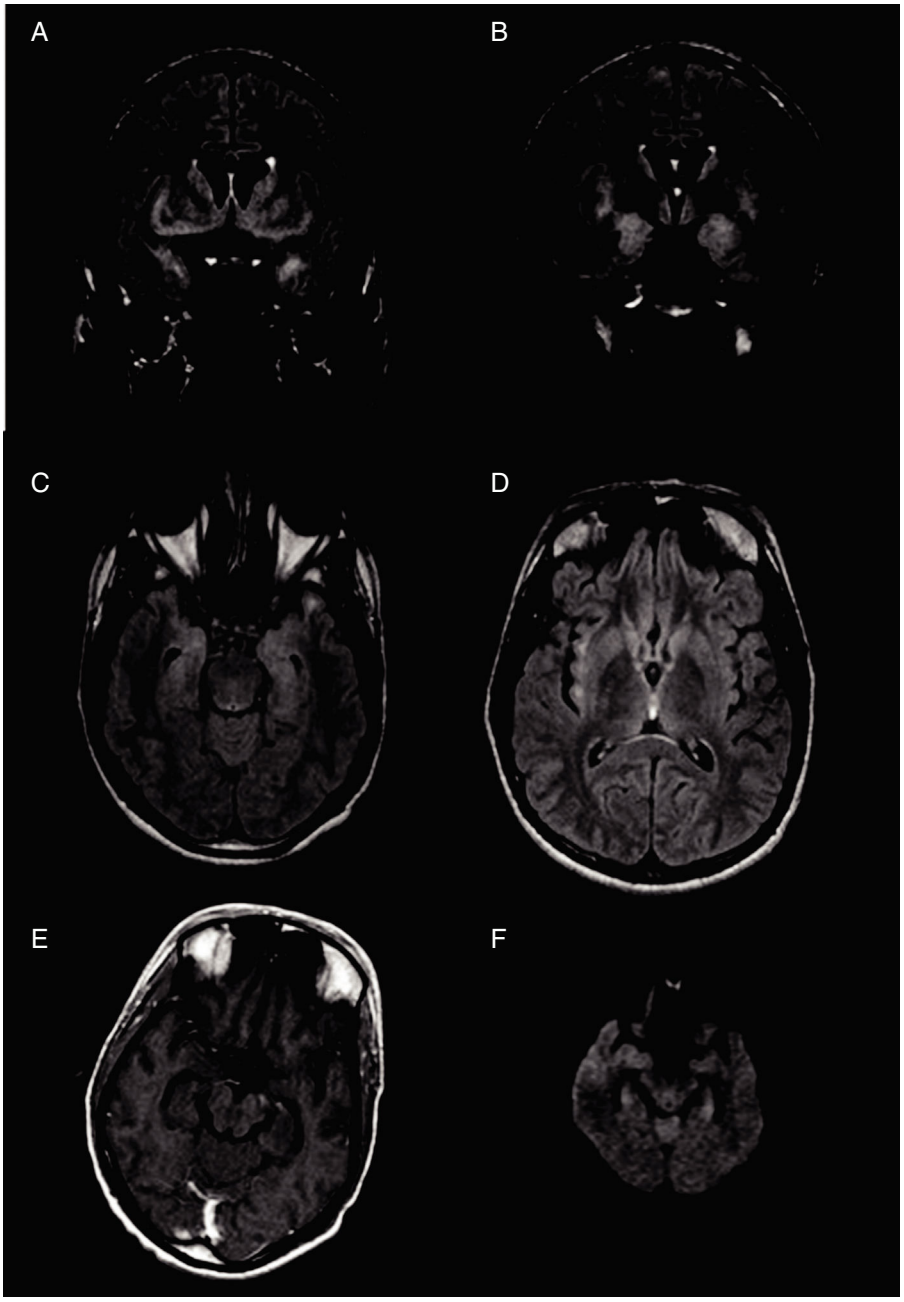

Figure 1 Brain MRI showing cortical hyperintensity on coronal T2-weighted FLAIR (A and B) and axial T2-weighted sequences (C and D), affecting the bilateral hippocampi, amygdalae, temporal lobes, basal and parasagittal regions of the frontal lobes, insulae, globus pallidi, and caudate nuclei. No pathological enhancement was observed after intravenous administration of contrast (E). Lesions do not cause a mass effect or show diffusion restriction on DWI sequences (F).

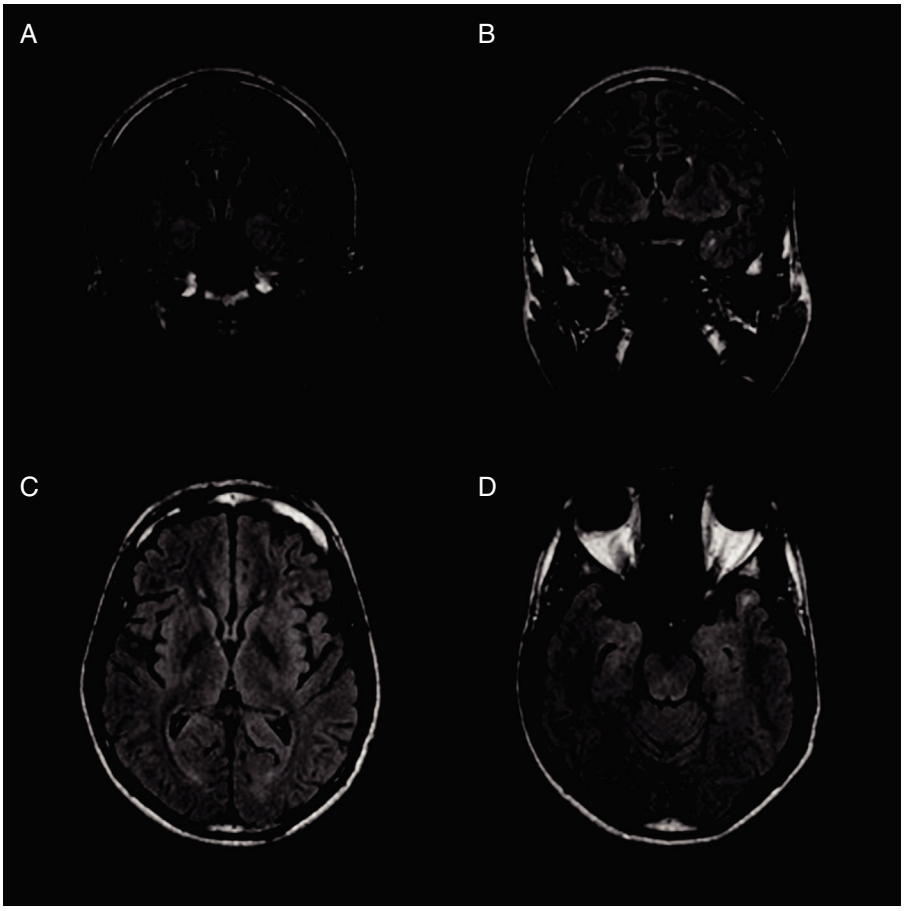

Figure 2 Follow-up MRI scan performed 12 months after antibiotic treatment completion, showing improved parenchymal involvement. Mild hyperintensity persisted in the temporal and perisylvian regions on axial (A and B) and coronal FLAIR (C and D) sequences.

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