**Desafios em Neurologia**

**Casos Clínicos do XXX Congresso Brasileiro de Neurologia**

**Toxic Methotrexate-Induced Leukoencephalopathy with Stroke-Like Presentation**

**ID:** Male, 19 years old, white, born and resident in São Paulo - SP, student

**Diagnostic Hypotheses:**

* Syndromic: Left Pyramidal Deficit Syndrome + Convulsive Syndrome
* Topographic: Right corona radiata
* Nosological: Inflammatory/Demyelinating
* Etiologic: Toxic Methotrexate-Induced Leukoencephalopathy with Stroke-Like Presentation

**Clinical History:**

The year is 2019, this is a patient with 17 years-old, treating a type B acute lymphoblastic leukemia, hospitalized with a report of nausea and vomiting, a shift of the rhyme to the left, and mild dysarthria, lasting approximately 1 hour and 30 minutes and spontaneously resolving. The following day, he had a new episode with the same symptoms and similar duration, also with spontaneous resolution after 2 hours. At the time, the hypothesis of ischemic stroke was made. Despite brain CT, CT cerebral angiogram, transthoracic echocardiogram, and CSF showing no changes, brain MRI (IMAGE 1) showed diffusion restriction in the left corona radiata, although there was no corresponding change in T2-FLAIR. The patient was discharged as TOAST V, maintaining the use of acetylsalicylic acid and statin for secondary prophylaxis of cerebrovascular events.

After 2.5 years (2022), now at the age of 19, a new brain MRI (IMAGE 2) was made looking for CNS metastasis since there was evidence of bilateral testicular infiltration (US), bone marrow, and CNS (CSF). MRI was completely normal and the previous alterations were absent.

In the following month, the patient was hospitalized again with confusion and 2 generalized tonic-clonic seizures, evolving with left rhyme deviation, in addition to dysarthria and paresthesia in the left upper superior limb. In the ICU, after 1 day, the patient presents an improvement in confusion and no new seizures are observed, remaining only with a rhyme deviation and mild dysarthria. New MRI (IMAGE 3) is performed, showing diffusion restriction in corona radiata on the right and centrum semiovale on the left, with a very mild correspondence of T2-W hyperintensity. Four days after admission his neurological evaluation was normal

Revisiting the patient’s past medical history, we observed that, on both occasions, a few days before the supposed “ischemic” events, intrathecal methotrexate was used on his chemotherapy sessions and so, given the transient nature of neurologic deficits, occurrence within a few weeks after intrathecal methotrexate administration, typical diffusion-weighted imaging abnormalities in the centrum semiovale on both occasions (one of them with documented reversion) and unremarkable CSF results, diagnosis of toxic methotrexate-induced leukoencephalopathy with stroke-like presentation was made. The patient resumed his chemotherapy sessions and no new neurological events occurred.