

# Primary central nervous system post-transplant lymphoproliferative disorder mimicking toxoplasmosis

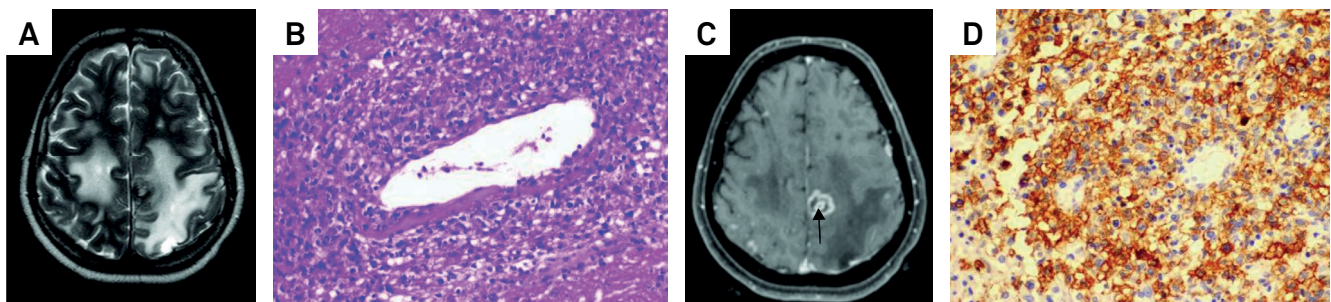
Doença linfoproliferativa pós-transplante mimetizando toxoplasmose

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A 37-year-old woman was admitted with right-sided hemiparesis and mental confusion. She had received a renal allograft transplant 10 years earlier and was on immunosuppressive therapy with mycophenolate, prednisone and tacrolimus. Magnetic resonance imaging (MRI) and microscopic examination are shown in Figure 1. Spectroscopy, perfusion and evolution are shown in Figure 2.

A diagnosis of monomorphic post-transplant lymphoproliferative disorder was made<sup>1,2,3</sup>. Mycophenolate was discontinued and the patient recovered.

We illustrate a post-transplant lymphoproliferative disorder lesion with ring-enhancing pattern, hyperperfusion and high choline and lipid/lactate levels. Perfusion and spectroscopy are not yet discussed in the literature and may help distinguish this from inflammatory lesions.



**Figure 1.** (A) T2-weighted magnetic resonance imaging revealed a left supratentorial hypointense lesion surrounded by vasogenic edema and a peripheral ring enhancement with an eccentric nodule along the internal wall (eccentric target sign, an imaging pattern considered suggestive of toxoplasmosis, arrow) in the cortico-subcortical region on T1 weighted imaging after contrast administration (C) and leptomeningeal enhancement. (B) Lymphoid infiltrate comprising angiotropic pleomorphic large cells, including some with Reed-Sternberg-like features, together with smaller T cells and areas of necrosis (hematoxylin eosin, original magnification x200). (D) CD20 antigen expression by large cells surrounding and invading vessel walls (CD20 immunoperoxidase stain, original magnification x200).

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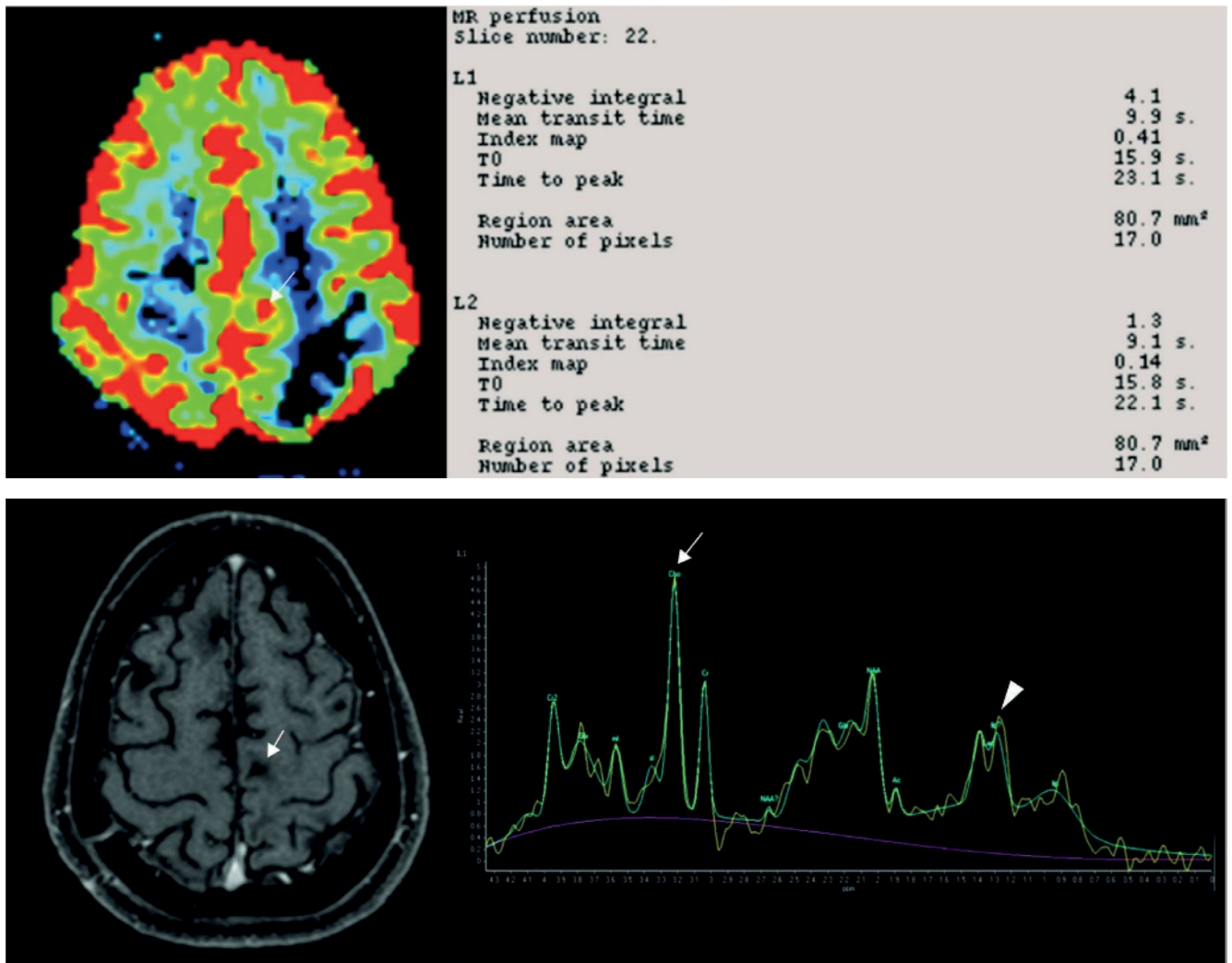
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**Figure 2.** A somewhat high relative cerebral blood volume (rCBV map) can be seen in the left parietal lesion (arrow) and is represented in red (top left). Perfusion color maps derived from dynamic susceptibility contrast-enhanced perfusion weighted imaging show that the visual increase is elevated 3.1 times relative to the contralateral parenchyma (top right). One month after treatment, the lesion is reduced and there is no enhancement (bottom left). Magnetic resonance spectroscopy shows a significant elevation of the choline peak in 3.2 ppm (arrow) and in the choline/creatine ratio. The choline signal results from several different choline-containing compounds, which are involved in membrane synthesis, and degradation and elevation of this peak is more often seen in neoplasms. There is also an elevation in lipid-lactate peaks, in 1.3 ppm (arrowhead), which indicate necrosis and tissue damage with liberation of membrane lipids (bottom right).

## References

1. Honda M, Koga M, Kanda T. [Primary central nervous system post-transplant lymphoproliferative disorders]. *Brain Nerve*. 2014;66(8):947-54. Japanese.
2. Pedroso JL, Dutra LA, Braga-Neto P, Abrahão A, Andrade JBC et al. Neurological complications of solid organ transplantation. *Arq Neuro-Psiquiatr*. 2017;75(10):736-47. <https://doi.org/10.1590/0004-282x20170132>
3. Lake W, Chang JE, Kennedy T, Morgan A, Salamat S, Başkaya M. A case series of primary central nervous system post-transplant lymphoproliferative disorder: imaging and clinical characteristics. *Neurosurgery*. 2013;72(6):960-70. <https://doi.org/10.1227/NEU.0b013e31828cf619>