

# High-resolution vessel wall imaging in human neurocysticercosis with leptomeningitis

## *Imagens de alta resolução das paredes dos vasos na neurocisticercose humana, com leptomeningite*

Luiz Fernando Monte Borella<sup>1</sup> Dafny Soares Leitao<sup>2</sup> Eduardo de Oliveira Narvaez<sup>3</sup>  
Marcelo de Carvalho Ramos<sup>2</sup> Fabiano Reis<sup>1</sup>

<sup>1</sup> Universidade Estadual de Campinas, Faculdade de Ciências Médicas, Departamento de Radiologia, Campinas SP, Brazil.

<sup>2</sup> Universidade Estadual de Campinas, Faculdade de Ciências Médicas, Departamento de Infectologia, Campinas SP, Brazil.

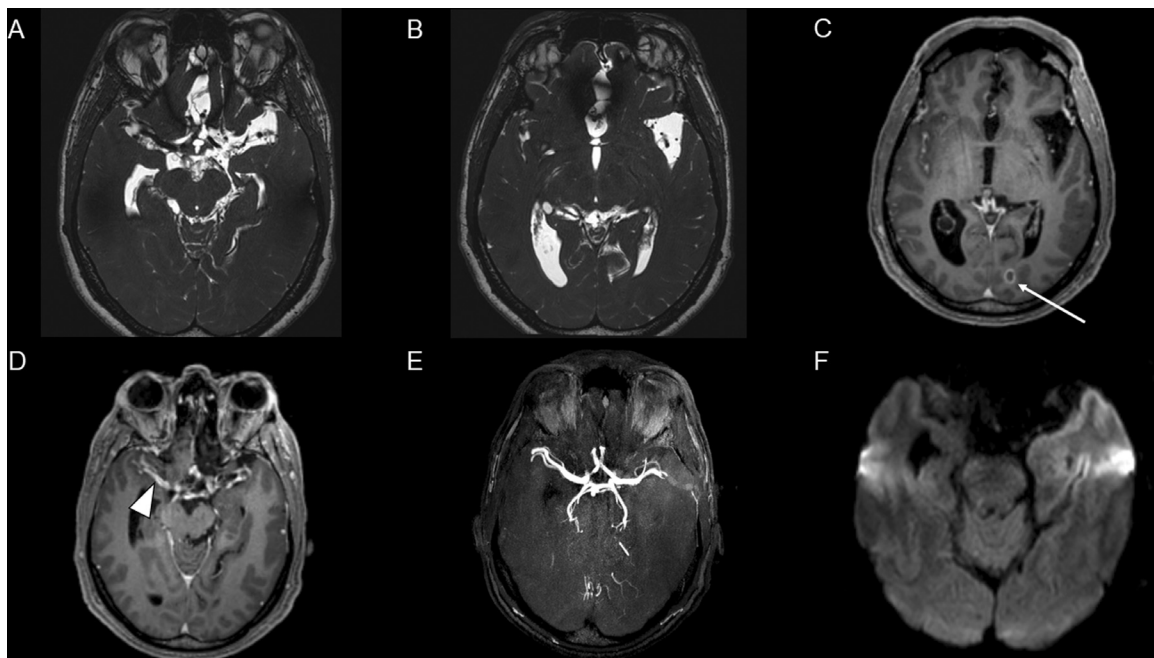
<sup>3</sup> Hospital Beneficência Portuguesa de São Paulo, Departamento de Radiologia, São Paulo SP, Brazil.

Address for correspondence Luiz Fernando Monte Borella (e-mail: borella.luiz@gmail.com).

Arq. Neuropsiquiatr. 2022;80(7):765–766.

The high-resolution vessel wall imaging (HR-VWI) is a millimetric technique that demonstrates vessel wall inflammation, which can occur simultaneously with leptomenin-

gitis. Encephalic infarction may be observed in less than 50% of the cases.<sup>1–3</sup>

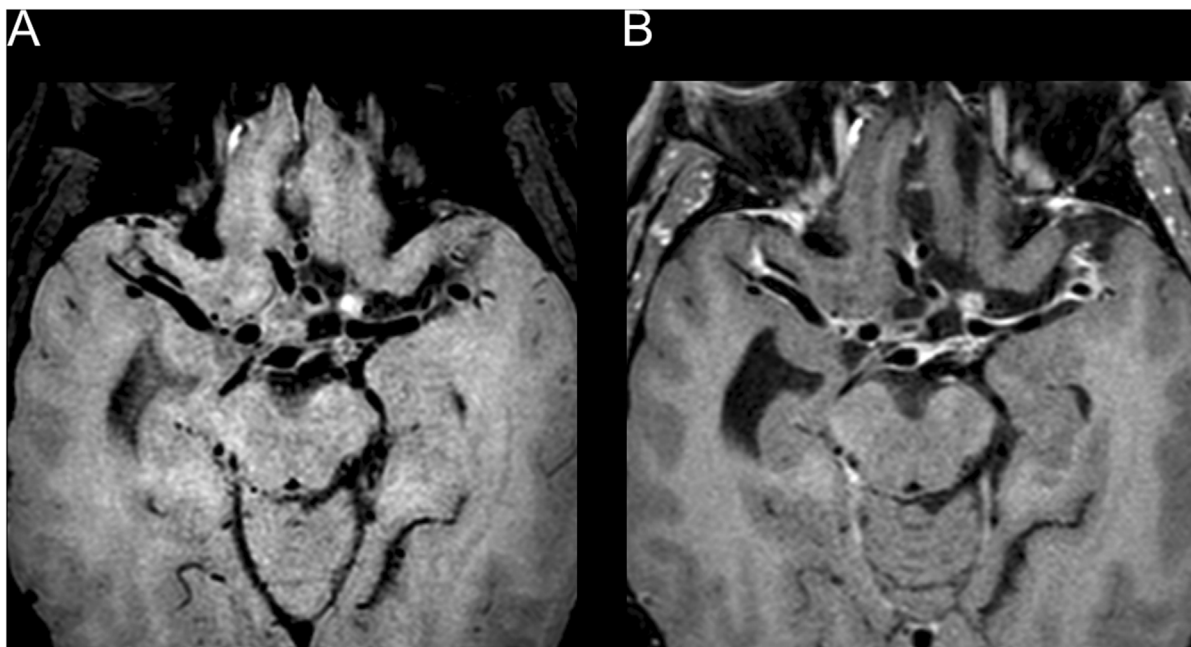


**Figure 1** Axial Fast Imaging Employing Steady-state Acquisition (FIESTA) images (A and B): cystic lesions in the subarachnoid space. Axial T1 post-contrast (C and D): a nodular lesion with peripheral contrast enhancement in the left calcarine region (arrow) and leptomeningeal enhancement (arrowhead). The MIP axial TOF MRA and DWI images (E and F) showed no significant abnormalities. Abbreviations: DWI, Diffusion-weighted imaging; MIP, Maximum Intensity Projection; MRA, Magnetic Resonance Angiography; TOF, Time-Of-Flight.

received  
January 17, 2022  
accepted  
March 7, 2022

DOI <https://doi.org/10.1055/s-0042-1755214>.  
ISSN 0004-282X.

© 2022. Brazilian Academy of Neurology. All rights reserved.  
This is an open access article published by Thieme under the terms of the Creative Commons Attribution-NonDerivative-NonCommercial-License, permitting copying and reproduction so long as the original work is given appropriate credit. Contents may not be used for commercial purposes, or adapted, remixed, transformed or built upon. (<https://creativecommons.org/licenses/by-nc-nd/4.0/>)  
Thieme Revinter Publicações Ltda., Rua do Matoso 170, Rio de Janeiro, RJ, CEP 20270-135, Brazil



**Figure 2** Axial HR-VWI pre (A) and post-contrast (B) demonstrate smooth enhancement in both M1 middle cerebral arteries.

A 42-year-old man with neurocysticercosis, presented headache and visual blurring. Magnetic resonance imaging (MRI) and HR-VWI scans were performed, as demonstrated in **Figures 1** and **2**, respectively. The findings contribute to the pathophysiology of the disease, by demonstrating concentric and irregular wall enhancement (vasculitis). The degree of vessel involvement correlates with the severity of disease stage,<sup>1</sup> and was demonstrated in other infections, such as syphilis,<sup>4</sup> and tuberculosis,<sup>1,5</sup> but not in neurocysticercosis.

#### Authors' Contributions

LFMB: conceptualization, data curation, investigation, writing-original draft; DSL: conceptualization, data curation, investigation; EON: conceptualization, visualization, writing-review & editing; MCR, FR: conceptualization, formal analysis, project administration, visualization, writing-review & editing.

#### Conflict of Interest

The authors have no conflict of interests to declare.

#### References

- 1 Choudhary N, Vyas S, Modi M, et al. MR vessel wall imaging in tubercular meningitis. *Neuroradiology* 2021;63(10):1627–1634
- 2 Pacheco FT, Cruz Junior LCHD, Padilha IG, et al. Current uses of intracranial vessel wall imaging for clinical practice: a high-resolution MR technique recently available. *Arq Neuropsiquiatr* 2020;78(10):642–650
- 3 Mont'Alverne Filho FE, Machado LdosR, Lucato LT, Leite CC. The role of 3D volumetric MR sequences in diagnosing intraventricular neurocysticercosis: preliminar results. *Arq Neuropsiquiatr* 2011;69(01):74–78
- 4 Feitoza LM, Stucchi RSB, Reis F. Neurosyphilis vasculitis manifesting as ischemic stroke. *Rev Soc Bras Med Trop* 2020;53: e20190546
- 5 Feitoza LM, Jarry VM, Ramos MC, Reis F. High-Resolution Vessel Wall MRI as a Complementary Investigation for CNS Tuberculosis. *Can J Neurol Sci* 2021;48(05):717–718