

Arterial ischemic stroke as a rare early complication of varicella in children





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INTRODUCTION Post varicella arterial ischemic stroke (AIS) is rare and usually a late complication, although it has been reported within the first week of illness. The anterior cerebral circulation and the basal ganglia are commonly affected. In Portugal, anti-varicella vaccine is commercialized but isn't included in the national vaccination programme.

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CASE REPORT

3 year-old ♂ β-thalassemia major Bone marrow allotransplant previous year Under cyclosporine treatment No varicella immunization before transplant

VARICELLA

Lumbar puncture

Limpid cerebrospinal fluid Normal cytochemical exam (leucocytes 1.6/uL, glucose 76.9 mg/dL, proteins 20.9 mg/dL) Negative culture **Positive PCR for varicella-zoster virus** (VZV)

Transcranial / cervical Doppler – normal

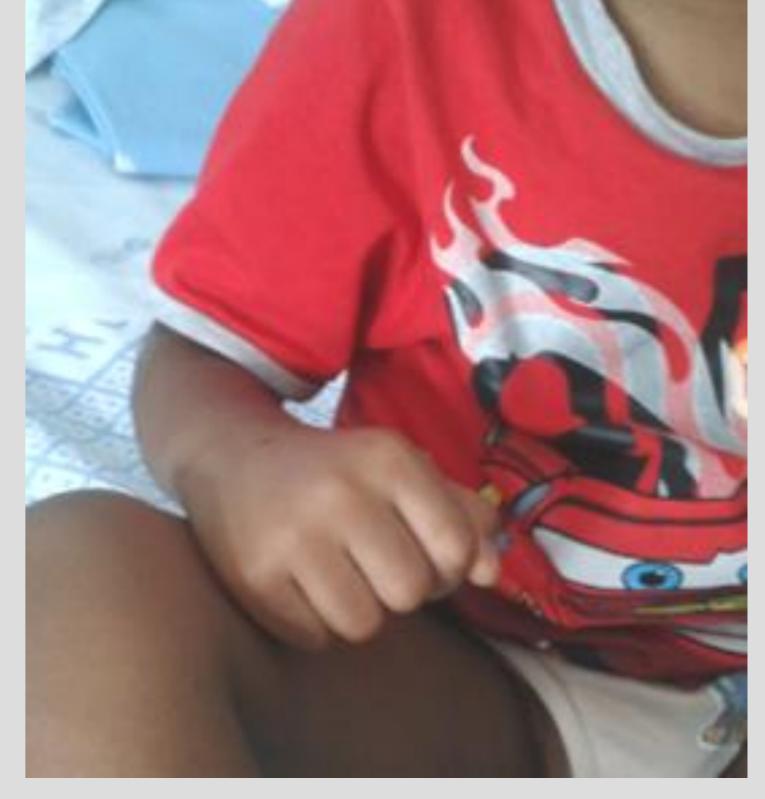
Electroencephalography – normal

► Cardiologic evaluation – normal

Pro-thrombotic study

Anti-β2-glycoprotein1





At <u>day 2:</u>

Ataxia

Speech alterations

Neurological examination:

Acute right hemiparesis Right upper-limb dystonia and hyperreflexia Right-sided central facial paralysis

STROKE

IgG-IgM+(205 U/mL)**Anti-cardiolipin** IgG+(21.4GPL/mL), IgM+ (71.7MPL/mL) Lupus anticoagulant + All negative 12 days later

TRANSIENT ANTIPHOSPHOLIPID SYNDROME

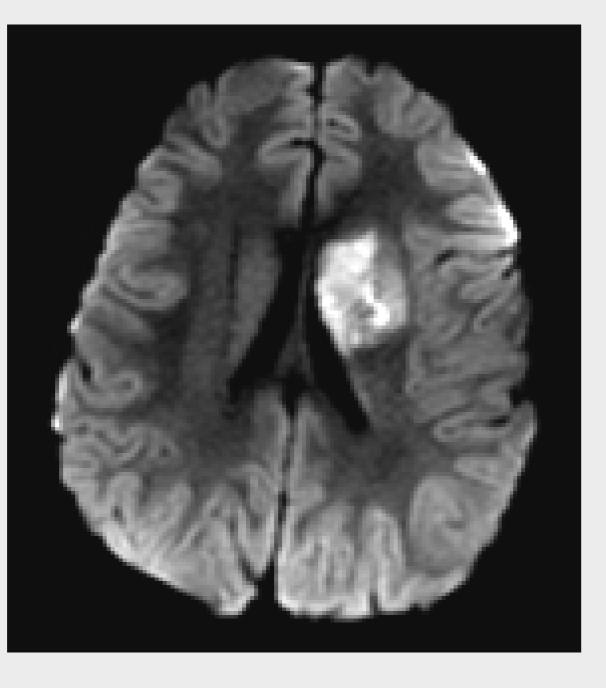
Cranial MRI basal ganglia infarction in the territory of the perforating branches of the left middle cerebral artery

TREATMENT Acyclovir iv 1500 mg/m²/day (21 days) Dipyridamole PO 4mg/kg/day (6 months)

6 MONTH FOLLOW-UP

- Residual right hemiparesis and dystonia, mainly brachial
- Normal Griffiths coefficient
- Normal speech evaluation
- Normal audiological evaluation





EARLY NEUROLOGIC **COMPLICATION OF VARICELLA!**

Acetylsalicylic acid 2,5 mg/Kg/day Physiotherapy Occupational therapy

CONCLUSIONS

- In immunocompromised patients with VZV vasculopathy, the gap between rash and neurological signs may be smaller with positive VZV-DNA in cerebrospinal fluid. Most of these events occur within 12 months after varicella infection.
- The transient antiphospholipid syndrome was secondary to the underlying infection and did not represent a pro-thrombotic risk factor, since it wasn't verified later in the post infection period.
- Hypertonia, hyperreflexia and dystonia are uncommonly symptoms of cerebral infarction in the acute stage; therefore obtaining history of recent varicella and performing a cranial MRI are crucial to the diagnosis.

References: FK Alehan et al, Focal cerebral vasculitis and stroke after chickenpox, European Journal of Paediatric Neurology 2002; 6: 331–333; V Ganesan et al, Mechanisms of ischaemic stroke after chickenpox, Archives of Disease in Childhood 1997;76:522– 525; SL Thomas et al, Chickenpox and Risk of Stroke: A Self-controlled Case Series Analysis, Clinical Infectious Diseases 2014;58(1):61-8; MA Nagel et al, The varicella zoster virus vasculopathies: Clinical, CSF, imaging, and virologic features, Neurology. 2008 March 11; 70(11): 853-860; R Askalan et al, Chickenpox and Stroke in Childhood: A Study of Frequency and Causation, Stroke caused by varicella zoster virus, In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA, 2014; Bulder MMM et al, Unilateral movement disorder as a presenting sign of paediatric post-varicella angiopathy, BMJ Case Rep 2013.