Teaching NeuroImages: Starry-sky appearance in Rocky Mountain spotted fever

Marinos Kontzialis, MD
Carlos A. Zamora, MD,
PhD

Correspondence to
Dr. Zamora:
czamora2@jhmi.edu

Figure CNS MRI findings in Rocky Mountain spotted fever

Axial T2 (A), fluid-attenuated inversion recovery (B), and diffusion-weighted (C) images demonstrate punctate hyperintensities in the bilateral centrum semiovale in a starry sky pattern consistent with multiple acute infarcts in the setting of Rocky Mountain spotted fever. Notice the perivascular distribution of the infarcts.

A 7-year-old previously healthy girl presented with high fever, headache, and a diffuse petechial rash. Serology confirmed Rocky Mountain spotted fever, a tick-borne disease caused by *Rickettsia rickettsii*. The organisms disseminate hematogenously to the CNS and invade arterioles and capillaries, leading to inflammation and disruption of the blood–brain barrier. Typical findings on MRI include periventricular and subcortical infarcts secondary to vasculitis, which tend to occur in a perivascular distribution, resulting in a starry sky appearance (figure). Although highly suggestive in the appropriate clinical setting, similar imaging findings have been described in other viral, bacterial, fungal, and parasitic infections.¹

AUTHOR CONTRIBUTIONS

Marinos Kontzialis: study concept, analysis of MRI data, revising the manuscript, and final approval. Carlos Zamora: analysis of MRI data, drafting and revising the manuscript, and final approval.

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DISCLOSURE

The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

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