Teaching *NeuroImages*: Typical neuroimaging features in high-altitude cerebral edema

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Figure Brain MRI

(A) Diffusion-weighted MRI shows hyperintense signal in the corpus callosum. (B) T2-weighted MRI discloses white matter changes caused by vasogenic edema. (C) T1-weighted MRI shows enhancement by contrast in globus pallidus. (D-F) Susceptibility-weighted imaging shows diffuse microhemorrhages. These are brain MRI abnormalities observed in high-altitude cerebral edema.

A 61-year-old man presented with thunderclap headache followed by loss of consciousness, 2 days after arriving in Atacama Desert, Andes Mountains, Chile, at 4,000 meters. Examination showed coma. Mechanical ventilation was necessary. He had progressive improvement after transfer to low altitudes. Brain MRI showed diffuse vasogenic edema and microhemorrhages (figure), and high-altitude cerebral edema (HACE) was diagnosed.

HACE is a high morbidity condition characterized by vasogenic edema, causing acute consciousness impairment, due to physiologic effects of traveling to high altitude.¹ Typical neuroimaging features

encompass white matter changes, corpus callosum involvement, and diffuse microhemorrhages.² Treatment includes supplemental oxygen, descent, and medication such as dexamethasone.¹

AUTHOR CONTRIBUTIONS

Dr. Marussi: case report project conception, organization, and execution; imaging conception, organization, and execution; writing of the first draft, review and critique. Dr. Pedroso: case report project conception, organization, and execution; imaging conception, organization, and execution; writing of the first draft, review and critique. Dr. Piccolo: case report project conception, organization, and execution; imaging conception, organization, and execution; writing of the first draft, review and critique. Dr. Barsottini: imaging conception, organization, and execution; writing of the first draft, review

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