Teaching NeuroImages: Optic radiation hemorrhage

A rare complication of extracorporeal membrane oxygenation

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Figure 1 Axial susceptibility-weighted image (SWI) and fused SWI and fractional anisotropy image

(A) Axial SWI: multifocal petechial SWI-hypointense hemorrhages are identified along the course of the optic radiation bilaterally. (B) Fused SWI and fractional anisotropy (FA) image confirms that the SWI hypointense hemorrhages are located within the course of the FA-bright optic radiations bilaterally.

A 14-year-old girl with a history of epilepsy had ventricular fibrillation, requiring 59 minutes of cardiopulmonary resuscitation. Spontaneous circulation was achieved and extracorporeal membrane oxygenation (ECMO) was initiated. Intact pupillary reflex, gross blink to threat, and normal fundoscopic examination were noted. Formal visual testing was not feasible with sedation. A prognostic brain MRI revealed bilateral optic radiation microhemorrhages (figure 1), not present on prior imaging (figure 2).

Intracranial hemorrhage is a complication of ECMO but is rarely seen along the optic radiations.^{1,2} It may be due to hypoxic ischemic injury becoming hemorrhagic with prophylactic anticoagulation on ECMO.

AUTHOR CONTRIBUTIONS

Richa Sharma: writing the manuscript. Thierry Huisman: creating the figures and writing the figure captions.

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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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Figure 2 Axial T2 image of the patient's brain 1 year prior to cardiac arrest shows no abnormal densities along the optic radiations

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