Teaching *NeuroImages*: Combined retinal and cerebral hyperperfusion syndrome after carotid thromboendarterectomy

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Figure 1 Cranial MRI

Cranial MRI reveals white matter edema (A, fluid-attenuated inversion recovery) and local hemorrhage (B, T2*-weighted image) in the territory of the right internal carotid artery.

Figure 2 Fundus photographs

Fundus photographs of the right eye show small retinal hemorrhages in the territory of the inferior temporal retinal artery (A), magnified in (B), which had not been present before surgery.

A 62-year-old man presented with mild left hemiparesis, headache, and blurred vision of his right eye. Ten days before, he had undergone thromboendarterectomy because of subtotal stenosis of his right internal carotid artery. MRI revealed confluent white matter edema together with focal hemorrhage consistent with cerebral hyperperfusion syndrome (CHS; figure 1). Likewise, funduscopy showed small retinal hemorrhages confined to the right eye (figure 2). Under careful blood pressure

control, symptoms and brain edema fully resolved within weeks. CHS occurs in around 3% of patients undergoing carotid thromboendarterectomy and can induce severe neurologic deficits.¹ Rarely, hyperperfusion also involves the ipsilateral eye.²

AUTHOR CONTRIBUTIONS

Simon Ketteler: acquisition of clinical data, manuscript. Yassin Djalali-Talab: acquisition of clinical data, manuscript. Manuel Dafotakis: acquisition and interpretation of clinical data. Martin Wiesmann: acquisition

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