The Diffuse Hyperdense Intracranial Circulation Sign

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A 53-year-old man arrived in our Emergency Department comatose, with a GCS of E1V1M4, with unreactive 4-mm pupils, present corneal reflexes, and absent oculocephalics. His noncontrast head computed tomography (CT) revealed hyperdensity of the bilateral MCAs and basilar artery (Figure, upper left), as well as the sagittal sinus (SS) mimicking a “delta sign” of SS thrombosis (Figure, upper right). The “hyperdense artery sign” is an indicator of poor prognosis in acute stroke.¹ However, it is important to recognize diffuse hyperdensity of the arteries and venous sinuses, which signify either elevated

hematocrit (56% in our patient), polycythemia (smoking or polycythemia vera), or severe dehydration/hemoconcentration.² This finding may create a “false-positive” dense artery sign unrelated to the true occluded vessel(s), which was a vertebrobasilar dissection/embolism in our case (Figure, bottom left, intracranial MRA demonstrating occluded right vertebral artery (V3) and narrowed V4 segment as well as occluded left PCA P1-P2 junction from a distally propagated embolism. Figure, bottom right, intracranial and extracranial MRA (gadolinium bolus) demonstrating an occluded right V3 vertebral artery segment).

Declaration of Conflicting Interests

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