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NEUROLOGICAL PICTURE

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Bilateral caudate nucleus infarction associated with variant in circle of Willis

Figure 1 Axial FLAIR MR image shows bilateral high signal intensity of the head of the caudate nuclei, the genu of the corpus callosum and the fornices, consistent with acute infarction.

A 76-year-old woman presented with syncope. The next day she had disorientation, confabulations, slight dyspraxia of the left hand and bilateral Babinski signs. A fluid attenuated inversion recovery MR scan showed high signal intensity of the head of the caudate nuclei, the anterior part of the corpus callosum and the fornices, consistent with bilateral infarction (fig 1). The vascular territory comprised bilaterally the recurrent artery of Heubner and the medial lenticulostriate artery, both branches of the anterior cerebral artery. The fornices and part of the genu of the corpus callosum are vascularised by proximal perforating branches of the anterior cerebral artery or the anterior communicating artery.¹ Magnetic resonance angiography of the circle of Willis performed within 1 week showed absence of the A1 segment of the anterior cerebral artery on the left side (fig 2). Echo Doppler of the carotid arteries showed moderate stenosis. Her Mini-Mental State Examination score 3 weeks later was 23/30. Verbal working memory and delayed recall were low, with normal recognition and no aphasia, apraxia or fluency problems.

Figure 2 Magnetic resonance angiography of the circle of Willis shows an absent A1 segment of the left anterior cerebral artery (arrow).

Bilateral caudate nucleus infarctions are rare.² Neurobehavioral consequences of caudate nucleus infarctions include abulia,^{2,3} dysarthria,² aphasia,² confabulations⁴ and global dementia.⁴ Left caudate nucleus infarction can lead to verbal memory dysfunction with intact recognition, in line with our findings.⁵ Involvement of the fornices may contribute to amnesia.¹

Our finding is the first description of bilateral cerebral infarctions associated with the absence of the left A1 segment. In this case, the right A1 segment provided bilaterally the recurrent artery of Heubner and the anterior circulation.

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