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Teaching NeuroImage: Traumatic Dissection of Lenticulostriate Arteries Within an Enlarged Perivascular Space

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CASE

A 33-year-old woman was admitted with right side hemiplegia after head trauma. Brain MRI revealed an acute ischemic stroke in the left lenticulostriate territory and a parenchymal hematoma (Figure 1). The hematoma occurred within an enlarged perivascular space (PVS) which had been incidentally discovered ten years prior. It was suspected that a traumatic dissection of lenticulostriate arteries within the PVS was responsible for both ischemic and hemorrhagic events (Figure 1). Healing of the hematoma and disappearance of the PVS and the lenticulostriate arteries were observed 2 months later (Figure 2). Excessive mobility of lenticulostriate arteries

within an enlarged PVS may explain the mechanism of traumatic dissection in this case.

LEGEND

Figure 1: MRI images acquired 10 years before the head injury (A, B) and at the time of admission (C, D) immediately following head trauma.

Time-of-flight (TOF) imaging showed an enlarged perivascular space (PVS) centered by lenticulostriate arteries (arrow, A). Imaging after the trauma revealed bleeding within the PVS on T2 FLAIR (C) and ischemia of the caudate nucleus (D).

Figure 2: MRI images and catheter angiogram performed two months following hospital admission.

On 2 months angiography (A), lenticulostriate arteries were no longer visible (arrows, A, B). Shrinkage of both PVS and hematoma were observed on TOF and T2 (B, C).

Teaching Slides-<http://links.lww.com/WNL/B698>

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