Bilateral Hyperdense Middle Cerebral Artery Sign

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History

A 54-year-old man with a one-year history of Broca’s aphasia and atrial fibrillation who was receiving warfarin sodium therapy 5mg daily presented to the emergency department of our hospital complaining of right hemiparesis, which had begun to improve 3 hours earlier. The impression was transient ischemic attack. Computed tomography (CT) of the head revealed encephalomalacia changes in the left temporal lobe (Figure 1). Twenty yhours later, the patient had a tonic-clonic seizure with sudden loss of consciousness. Repeat unenhanced head CT revealed increased density over the bilateral middle cerebral arteries with mild effacement of the cortical sulci (Figure 2).

Comments

A hyperdense artery sign in the middle cerebral artery (MCA) in acute cerebral infarction

Fig. 1 Unenhanced head CT scan showing encephalomalacial changes in the left temporal lobe (white arrow)
stronely indicates thromboembolic MCA occlusion, which carries a poor prognosis\(^1\). This is one of the early markers of acute ischemic stroke on CT scan and it is indicated when attenuation values are higher than the contralateral ones\(^2\). However, hyperattenuating arteries are more likely to be false-positive when seen bilaterally on CT, especially in patients presenting with seizures and loss of consciousness, such as in this case. Therefore, in addition to checking clinical neurological symptoms, measuring the Hounsfield units (HU) on CT scan, which are usually 40HU for flowing blood and 80HU for a thrombus, helps in the diagnosis\(^3,4\). A cardiac origin of a massive embolic stroke such as the one described in our case could thus be impressed.

**References**