


Anterior choroidal artery infarct presenting as right hemichoreoathetosis

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DESCRIPTION

A 90-year-old woman presented with choreoathetosis ([video 1](#)) involving her right upper and lower extremities beginning 3 days prior to presentation. Her choreoathetosis worsened with distraction but improved with purposeful movements (eg, writing her name). Further neurological examination revealed mild dysarthria and right upper motor neuron facial palsy. A brain MRI showed an infarction involving the left internal capsule and the basal ganglia ([figure 1](#)) in the anterior choroidal artery (AchA) territory with a Trial of Org 10172 in Acute Stroke Treatment (TOAST) classification of stroke of undetermined aetiology.

The prevalence of AchA ischaemic stroke is low, accounting for approximately 3% of all ischaemic strokes.¹ The AchA is a direct branch arising from the internal carotid artery and infarcts in this territory raise the suspicion of a possible cardioembolic event. Its deep branches typically supply the posterior limb of the internal capsule, optic radiations and portions of the caudate and globus pallidus ([figure 2](#)).^{1,2} AchA strokes most commonly present as a triad of hemiparesis, hemianaesthesia and hemianopia but a wide variety of other clinical manifestations have been reported including abnormal movements presenting as new-onset parkinsonism, one example of tonic spasms, and a recent report

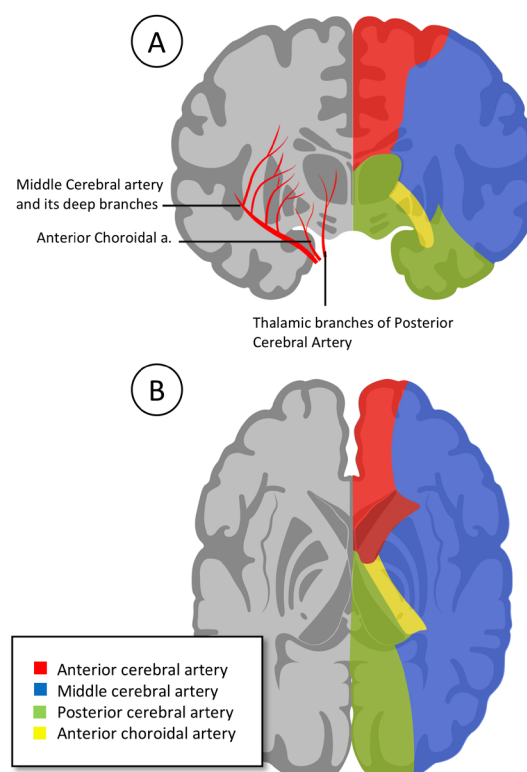


Figure 2 (A) Vascular supply (coronal view). (B) Vascular supply (axial view). This is a commissioned artwork by Azam S Tolla and retains the rights to it.

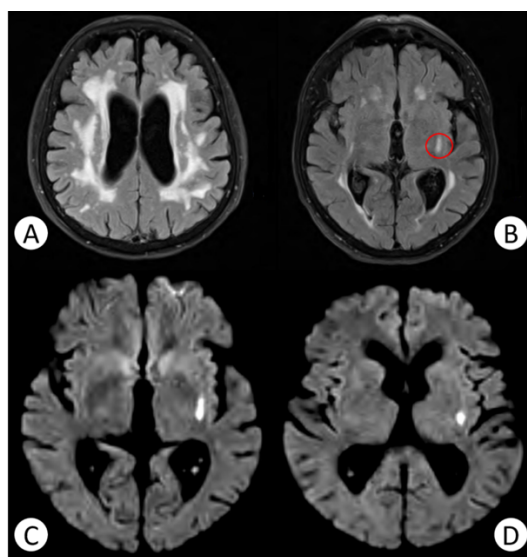


Figure 1 (A) Fluid-attenuated inversion recovery (FLAIR) sequence showing significant leukoaraiosis. (B) FLAIR sequence revealing infarct lesion (red oval). (C) and (D) Diffusion weighted imaging sequence showing restricted diffusion involving the left internal capsule and the basal ganglia.

of a posterior variant of alien limb syndrome.^{3–5} To our knowledge, our patient is the first example of choreoathetosis in the setting of AchA ischaemic stroke.

Movement disorders are a rare complication of both ischaemic and haemorrhagic strokes, which can present as either hyperkinetic or hypokinetic movements depending on the region of brain involved and the individual's age.⁶ Dystonia, hemichorea, hemiballismus, tremor, myoclonus, athetosis, asterix and parkinsonism have all been described.⁶ Overall, the basal ganglia is the most common location causing stroke-related movement disorders. Post-stroke movement disorders generally resolve within 2 weeks in 50% of the population.⁷ Infarcts within the deep thalamic branches arising from the posterior cerebral artery (PCA) as well as the deep branches from the middle cerebral artery (MCA) are typically implicated in these stroke presentations. However, it may be possible that AchA infarcts are an under-recognised cause, which raises important clinical questions regarding the actual stroke aetiology, whether it is small-vessel



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video 1 Right hemichoreoathetosis secondary to anterior choroidal artery infarct.

Learning points

- ▶ Movement disorders are a rare complication of stroke accounting for less than 1% of all cases.
- ▶ Half of such cases spontaneously resolve within 2 weeks of presentation.
- ▶ Anterior choroidal artery infarct may be an under-recognised cause of stroke-related movement disorders.
- ▶ Dopamine antagonists may be used for symptomatic management.

disease (as would be the case of deep branch involvement of MCA or PCA) or a cardioembolic event (AchA involvement). So, paying close attention to infarct territory is essential in making

the proper diagnosis. Treatment with dopamine antagonists can provide symptomatic relief to patients if spontaneous resolution is not achieved. In the acute setting, our patient was started taking risperidone. At 1-month follow-up, she still had persistent symptoms and was switched to deutetrabenazine. Unfortunately, the patient has only achieved minimal relief to date.

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