

When it matters that a 'Stroke' is not a stroke

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DESCRIPTION

An 81-year-old right-handed woman developed right-sided headache, focal motor seizures and left hemiparesis 10 days postendarterectomy for 80% stenosis of the right internal carotid artery. She was admitted to a local hospital. Her background history included newly diagnosed lung cancer, hypertension, hypercholesterolaemia, chronic obstructive airways disease, chronic kidney disease with baseline creatinine approximately 120 mmol/L and transient ischaemic attack.

Examination showed uncontrolled hypertension at 202/100 and dense left-sided hemiplegia.

An urgent CT of the brain showed extensive low attenuation affecting the right hemisphere (figure 1), and the working diagnosis was of total anterior circulation stroke and symptomatic seizures.

Four days later MRI of the brain showed high signal change in the right hemisphere (figure 2). There was no restricted diffusion. Subsequently, brain perfusion CT demonstrated increased relative blood flow in the area supplied by the right internal carotid artery consistent with the diagnosis of cerebral hyperperfusion syndrome (CHS; figure 3).

The patient was managed with a labetalol infusion to control the blood pressure. Management was complex as she had a contralateral high-grade carotid stenosis. However, despite significant improvement she has residual frontal syndrome and a weak left upper extremity.

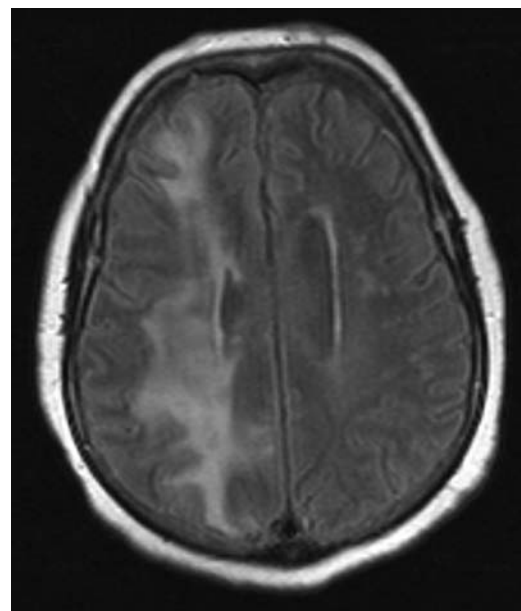


Figure 2 Axial fluid-attenuated inversion recovery MRI showing extensive high-signal change affecting the right side of the brain.

CHS is uncommon, complicating an estimated 3% of patients undergoing carotid endarterectomy, and can cause severe neurological deficits.¹ The risk factors include: high-grade stenosis, perioperative hypertension, contralateral carotid stenosis, a recent ischaemic event or recent contralateral carotid endarterectomy. The syndrome is characterised by headache ipsilateral to the revascularised vessel, focal motor seizure and neurological deficits.

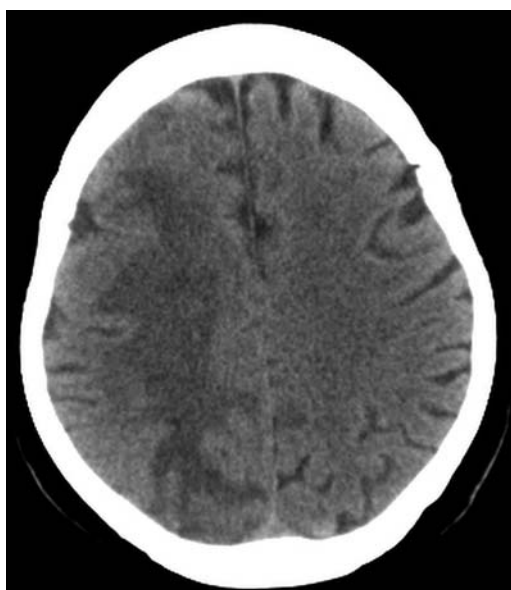


Figure 1 CT of the brain showing extensive low attenuation affecting the right hemisphere.

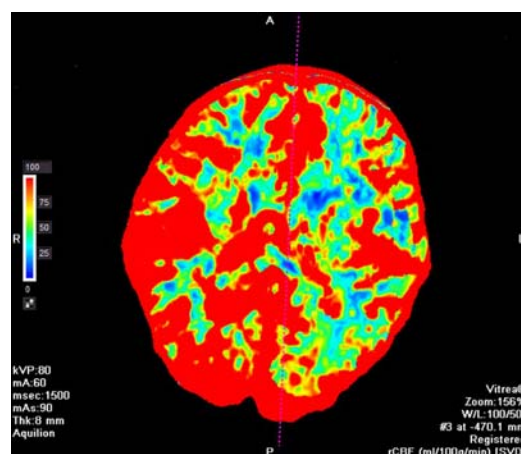


Figure 3 Brain perfusion CT demonstrates increased relative blood flow in the area supplied by the right internal carotid artery.



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Learning points

- ▶ Cerebral hyperperfusion syndrome is a neurological emergency characterised by a triad of headache, seizures and neurological deficit, developing after cerebral revascularisation.
- ▶ It should be considered early in the differential of patients presenting with apparent stroke after endarterectomy.
- ▶ Strict control of postoperative hypertension is important in preventing this condition.

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Competing interests None.

Patient consent Obtained.

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