

Case	(098) Cerebral hiperperfusion syndrome following
Authors	endarterectomy of left internal carotid artery: a case report.
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CASE PRESENTATION

Male patient, 63 years old, referred from another centre, presenting with focal neurologic symptoms, bronchospasm, hypertension, status epilepticus and impossibility to regain level of consciousness following carotid endarterectomy due to 80% stenosis of left internal carotid artery.

Non-enhanced computerized tomography (CT) demonstrated gyral swelling, cortical effacement and hypodensity affecting left brain hemisphere. Initially, the patient was admitted to the intensive care unit with the diagnosis of ischemic stroke, but follow-up imaging failed to show consistent evolution with the aforementioned pathology.

Thus perfusion-CT was performed on the patient, which showed prominent left brain hemisphere vessels, elevated cerebral flow volume and shortening of mean transit time; findings which were compatible with cerebral hyperperfusion syndrome.

DISCUSSION

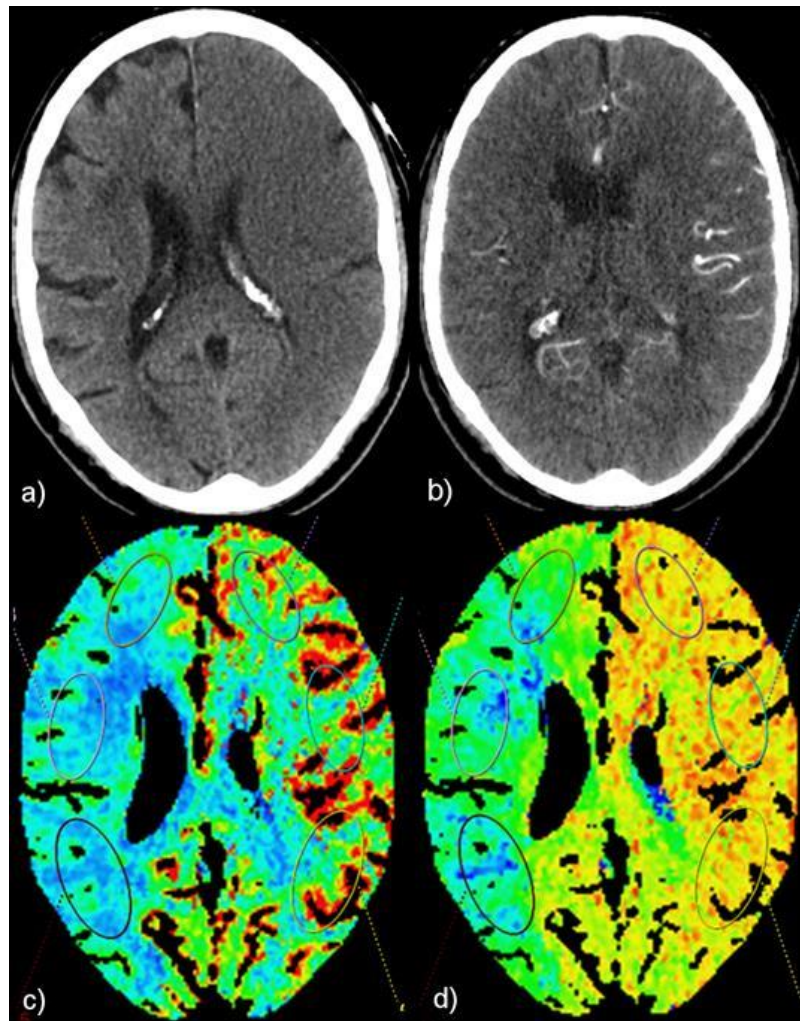
Cerebral hyperperfusion syndrome is a rare postprocedural complication after cerebral revascularization (estimates between 1-3%) (1), in which there is an elevation of cerebral blood flow of at least 100% to the affected hemisphere (2). Pathophysiology is not fully understood, but it is thought to be caused by a dysfunction in the autoregulatory mechanisms that maintain constant intracranial pressure, resulting in cerebral edema after blood flow is restored (2,3). Predisposing factors include hypertension, high grade stenosis, decreased cerebral vasoreactivity, intraoperative ischemia, etc (1,3).

Typical clinical findings consist of headache, seizures and focal neurologic symptoms up to 30 days postprocedure (4). Imaging modalities that can be helpful in establishing the diagnosis are transcranial doppler, CT, magnetic resonance imaging (MRI) and single-photon-emission CT.

Main findings in such studies are ipsilateral hemisphere swelling which follows vascular distribution and increase of cerebral blood flow and cerebral blood volume on perfusion modalities (5). One severe complication, which may or may not be present but must be screened for, is intracranial haemorrhage, which greatly worsens the prognosis (3).

CONCLUSION

In conclusion, cerebral hyperperfusion syndrome is a rare and severe condition which must be remembered when dealing with patients that present morbidity after cerebral revascularization. The best diagnostic tools in our disposition are perfusion-MRI and perfusion-CT, which help measure the cerebral blood flow and establish a differential diagnosis with acute cerebral ischemia.



a) Unenhanced CT showing left hemisphere hypodensity and ipsilateral gyral swelling. b) Perfusion CT demonstrating prominent left hemisphere vessels. c) Elevated cerebral blood flow in left hemisphere. d) Diminished mean transit time in left hemisphere.

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