Giant petrosal aneurysm of the internal carotid artery causing stroke in a young man

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DESCRIPTION

A 22-year-old man was referred to our centre after an acute infarction in the right insula and basal ganglia region had been revealed by diffusion MRI performed for left hemiparesis. Carotid Doppler ultrasonography was normal; however, imaging of the cervical and cranial arteries with CT angiography revealed a 2.2×2.7 cm aneurysm in the petrous portion of the right internal carotid artery (ICA) with a peripheral thrombus (figure 1). The patient was referred to the interventional radiology for treatment.

The patient underwent emergency angiography that showed an aneurysm involving the petrous portion of the right ICA (figure 1). Endovascular stent was deployed successfully without any neurological deficit. Follow-up digital subtraction angiography, 3 months later, demonstrated complete obliteration of the aneurysm without parent artery occlusion.

Petrosal carotid aneurysms are rare lesions that are likely to be in congenital origin.¹ Petrosal carotid aneurysms are usually large, and fusiform in shape and they may contain chronic thrombus.

They produce various signs and symptoms like headache, nasal congestion and midfaces pain and otological manifestations like conductive and sensorineural hearing loss and tinnitus. Further, rupture as an initial manifestation can occur in approximately 25% of cases.²

Petrosal aneurysms can be visualised in CT and MRI. They usually appear as destructing the petrous bone oriented along the carotid canal with well-corticated expansion of it. The relevant differential diagnosis would comprise glomus jugulare or a high-riding jugular bulb. Finally, these lesions can be treated effectively by endovascular or surgical occlusive procedures.

Learning point

Petrosal aneurysms appear as enhancing vascular lesions expanding the petrous bone oriented along the carotid canal. The relevant differential diagnosis would comprise glomus jugulare or a high-riding jugular bulb.

Figure 1 Axial (A), coronal (B) and sagittal (C) reformatted and coloured three-dimensional volume rendered CT angiography images show a wide-necked saccular aneurysm arising from the anterior curve of the petrous segment of the carotid artery. Follow-up digital subtraction angiography image (E) shows complete thrombosis of aneurysm 3 months later.

To cite: Akgun V, Sari S, Verim S, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-009593

Contributors OF was involved in conception, design, analysis, interpretation of data and drafting of the manuscript. NF acquired the data, analysed and interpreted the data. SD was involved in acquisition of data and critical revision of manuscript. JB and PB critically reviewed and edited the manuscript. VP was involved in conception, design, analysis and interpretation of data and drafting of the manuscript. All the authors approved the final draft of the manuscript.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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