Case	(087) Subarachnoid hemorrhage secondary to arteriovenous malformation with flow related aneurysm
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CASE PRESENTATION

58-year-old woman with history of dyslipemia, who attended the emergency department for cervicalgia, dizziness and vomiting of recent onset. Clinical signs of meningeal irritation were detected, with no evidence of focal neurological deficits.

Non enhanced computed tomography (NECT) and computed tomography angiography (CTA) showed subarachnoid hemorrhage in the occipitocervical junction with extension to the prepotine and perimesencephalic cisterns, as well as in left cerebellar folia, with small intraparenchymal haematoma in the left hemicerebellum. A bilateral subdural haematoma in the posterior fossa convexity was found, without signs of sinus thrombosis.

No vascular lesions were identified. In digital substraction angiography (DSA) an early arteriovenous shunt was observed, compatible with superficial arteriovenous malformation (AVM) in the left hemicerebellum, with flow input from the distal ipsilateral posteroinferior cerebellar artery (PICA). Dependent on this vessel, a flow-related aneurysm of approximately 1.5 mm was observed near the nidus.

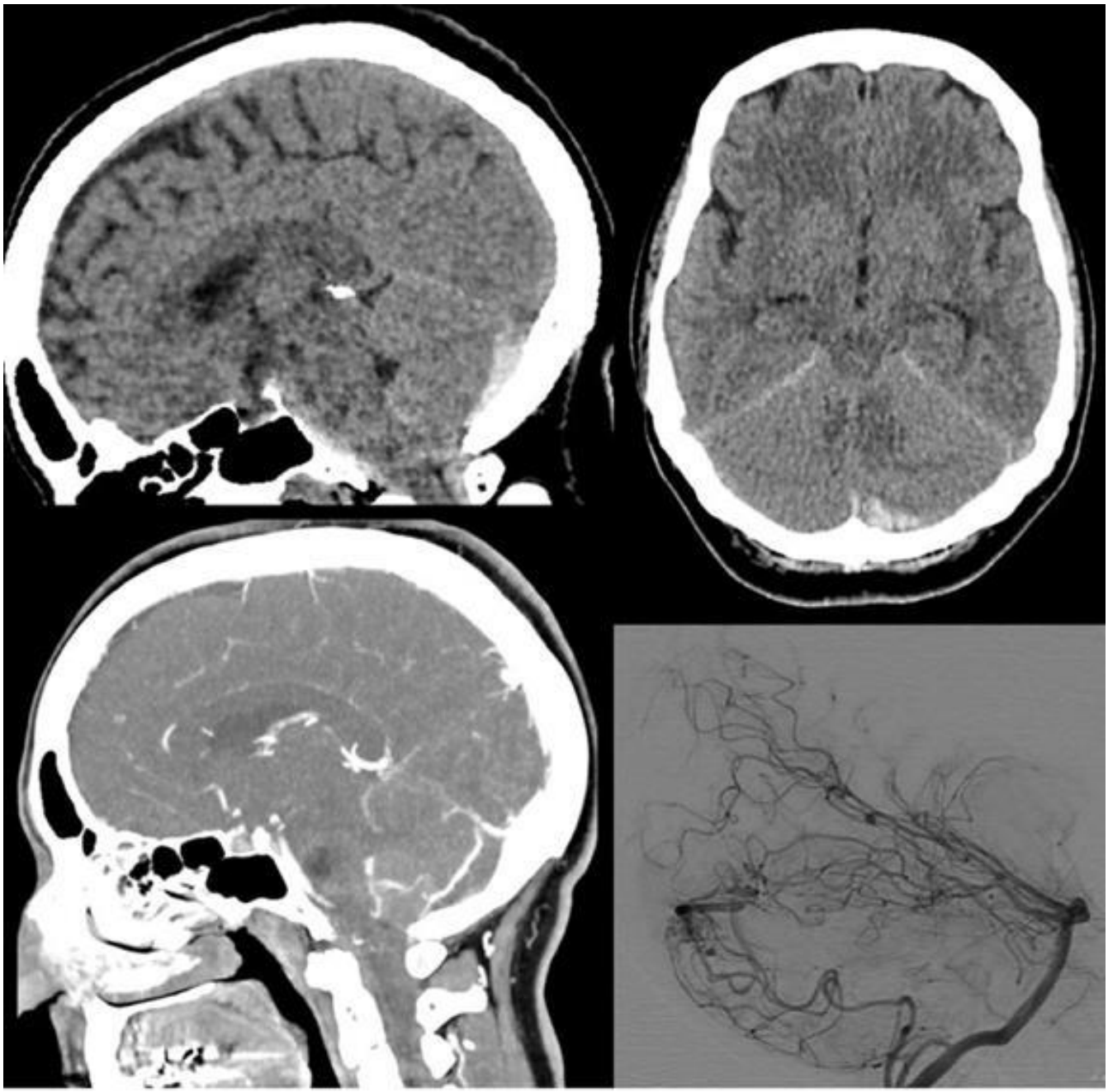
DISCUSSION

The distribution of the hemorrhage around the brainstem raises the differential diagnosis between venous bleeding, vertebrobasilar aneurysm, cervical spinal AVM or dural arteriovenous fistula (DAF), however, the presence of blood in the posterior fossa and the small cerebellar hematoma, suggest the existence of a vascular lesion or malformation in this location.

The diagnostic criteria for classic type AVM include the presence of a nidus embedded within the brain parenchyma and early venous drainage, best seen on dynamic studies. Aneurysms in the feeding vessels of a AVM are thought to occur as a result of hyperdynamic flow and increased shear stress.

CONCLUSION

The distribution of blood in a spontaneous HSA can guide us to the location and etiology of the bleeding. In case of negative TC, it is useful to perform a DSA which continues to be the standard of reference for the neurovascular study, especially in cases with high suspicion of a vascular anomaly.



NECT presenting subarachnoid hemorrhage in the posterior fossa, prepotine and perimesencephalic cisterns and occipitocervical junction (top left) and small intraparenchymal haematoma in the left hemicerebellum (top right). Maximum intensity proyection CTA reconstruction with no evidence of vascular anomaly (bottom left). DSA showing left cerebellar AVM with input from the ipsilateral PICA, with a flow-related aneurysm dependent on this vessel (bottom right).

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