

Aneurysmal Malformation of the Vein of Galen in Adults in Bamako: A Case Report

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ABSTRACT

Aneurysmal malformation of the vein of Galen (AVG) is a rare congenital vascular malformation, characterized by the dilation of an embryonic vein precursor of the vein of Galen. It is more common in boys. We report the case of an observation of AVG collected in the radiology and medical imaging department of the Medical Clinic in Bamako, Mali. CT scan was used to make the diagnosis. It was a 28-year-old young man with epileptic seizures and severe headache whose cerebral CT angiography had shown aneurysmal dilation of the vein of Galen and venous sinuses. In light of this observation, we bring you the contribution of CT angiography in the management of this pathology.

Keywords

Aneurysm of the vein of Galen, CT angiography, Vascular malformation, Adult.

Introduction

Aneurysmal malformation of the vein of Galen (AVG) is a congenital vascular malformation, it is rare characterized by the dilation of an embryonic vein precursor of the vein of Galen [1,2]. It is a pathology more frequent in male subjects diagnosed in the antenatal and neonatal period and the discovery in adulthood is exceptional [2,3]. Cerebral CT angiography allows to make the positive diagnosis. The aneurysm of the ampulla of Galen is serious especially in the newborn with probable death or with neurological sequelae. The treatment involves surgery and interventional radiology. The latter like endovascular embolization remains the treatment of choice [4,5]. We bring the case of an AVG in order to study the contribution of imaging in particular CT angiography in the management of this pathology.

Observation

This was a 28-year-old male patient admitted with a picture of epileptic seizure with severe headache on clinical examination. A brain CT angiography was performed with a general electrical device of the OPTIMA type, 16 bars. An acquisition after injection of bolus contrast agent had objectified: a mass of the pineal region of liquid density, intensely enhanced after injection of the contrast agent in relation to a large aneurysmal dilatation of the great vein of Galen. It measured 63 x 50 x 49 mm, associated with a dilatation of the right sinus and numerous perianeurysmal venous derivations (Figures 1,2).

The patient had not received treatment because he had disappeared after the CT scan was performed.

Discussion

The malformation of the vein of Galen is a complex arteriovenous fistula caused by multiple abnormal communications between the venous system of Galen and the cerebral arteries [2]. It is a rare

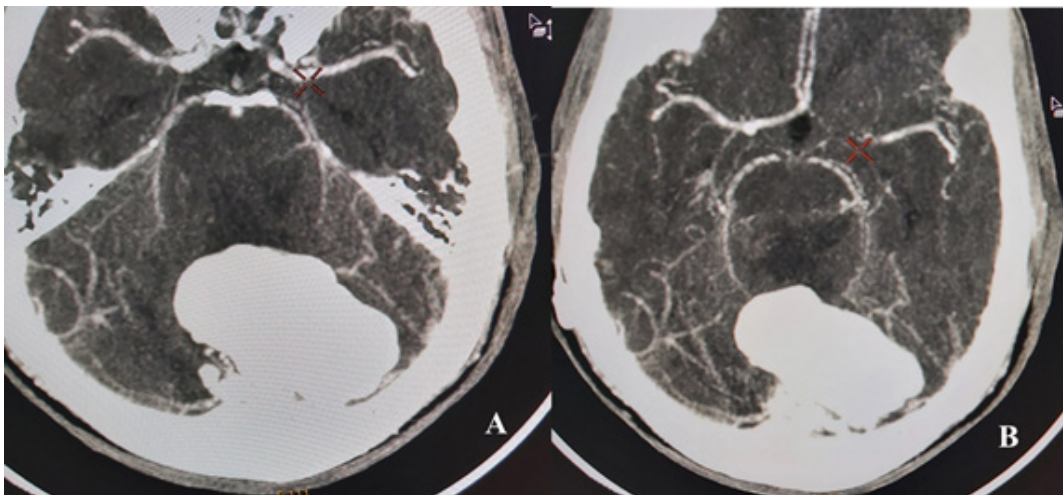


Figure 1: (A and B): Brain CT angiography with axial reconstruction revealed an aneurysmal dilation of the vein of Galen with numerous peripheral derivations.

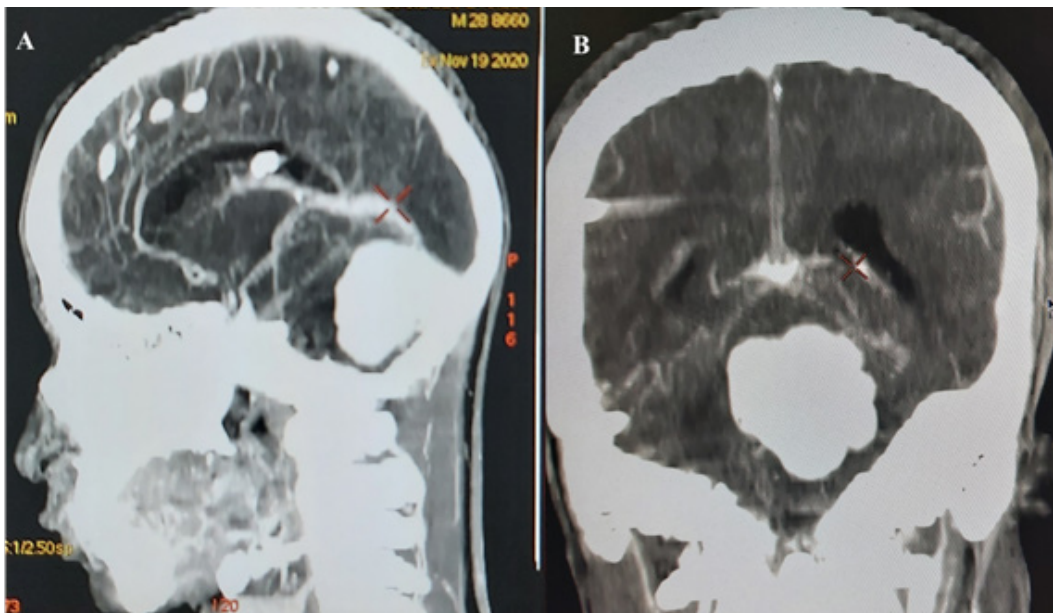


Figure 2: (A and B) : Brain CT angiography with sagittal (A) and coronal (B) reconstruction, showing aneurysmal dilation of the vein of Galen at the level of the pineal region with dilation of the right sinus and intraparenchymal calcifications.

congenital condition that represents less than 1% of intracranial arteriovenous malformations [2,6,7]. It is exceptional in adults [1,3], our case was a young adult of 28 years. The clinical signs of the MAVG vary greatly depending on the age of revelation [2]. Our patient had presented with intense headaches of epileptic seizure. These neurological signs are due to venous congestion and abnormal CSF flow. In children and adults, the symptomatology is much more varied, it can be growth retardation, hypertrophy of the skull vault, mental retardation, the presence of psychiatric signs or intracerebral calcifications linked to chronic venous ischemia [2]. In our observation there was no growth retardation or macrocrania but there were intraparenchymal calcifications. Imaging allows a positive diagnosis to be made, it is crucial in this diagnostic management. Antenatal ultrasound shows a strictly anechoic extraparenchymal image of the midline located

behind the third ventricle with turbulent flow on color Doppler. Transfontanellar ultrasound finds the same semiological elements with Doppler, it allows the study of deep cerebral vessels in the neonatal period [2]. In the adult form, although it is exceptional, CT angiography can be an alternative by showing the spontaneously hypodense aneurysmal sac with intense enhancement and peripheral hyperdense derivations after injection of iodinated contrast product. CT scanning also makes it possible to highlight parenchymal lesions which are essential in the therapeutic decision. The malformed vessels appear as tubular and curvilinear opacities. The deep venous drainage of the malformation is often clearly identifiable in the form of a tubular opacity draining into a dilated Galen ampulla [2]. Our patient had benefited from cerebral CT angiography which had made it possible to make the diagnosis. Magnetic Resonance Imaging (MRI) is still very useful and makes

it possible to eliminate differential diagnoses by specifying the parenchymal lesions as best as possible. It is the most sensitive examination and must be systematically performed [2]. The case of our observation did not benefit from MRI due to lack of means and availability. On MRI, the aneurysmal dilatation, arteries and veins are empty of signal on T1 and T2 sequences. Typically median, the aneurysm is sometimes lateralized retrothalamic, taking a tubular or curvilinear shape, clearly visible in relation to the cerebral parenchyma and cerebrospinal fluid, sequelae of old hemorrhages can be visible in the form of hyper signals [8]. Surgical therapeutic management and embolization are the means of treatment whose prognosis depends on the accuracy of the positive diagnosis [9]. Our did not benefit from treatment because he was lost to view after the CT angiography was performed.

Conclusion

The aneurysm of the ampulla of Galen is a rare congenital vascular malformation. Although it mainly affects newborns and small children, discovery in adults is possible. CT scanning, particularly cerebral CT angiography, is not an insignificant examination for a positive diagnosis and helps with therapeutic management by providing information on the cerebral parenchyma in addition.

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