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Unusual Presentation of A Frontal Arteriovenous Malformation

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Abstract: The intracranial hypertension (ICH) is an unusual consequence of the unruptured arteriovenous malformation (AVM), only 13 cases are described in the literature. We report in this observation a case of unruptured AVM revealed by a spontaneous cerebrospinal fluid (CSF) rhinorrhea due ICH. It is about a 46-year-old patient, presenting a rhinorrhea installed in a progressive way for 2 years associated to occipital headaches. The MRI objectified a wide CSF leakage of the sphenoïdal sinus associated with a voluminous frontal AVM. The arteriography confirmed the diagnosis. The initial therapeutic decision consisted of a ventriculo-peritoneale drainage, and a supervision of the AVM. The evolution was marked by the obstinacy of the rhinorrhea, and the surgical management of the AVM was decided. After the surgery, the patient reports the regression of the rhinorrhea and headache. In the literature, the ICH sees itself at young patient with broadband AVM with deep sinus drainage. The mechanism is unknown, it's not resolved by medical treatment, and the treatment of the AVM by surgery, radiosurgery or embolisation remains the treatment of choice.

Keywords : intracranial hypertension (ICH), arteriovenous malformation, arteriography.

INTRODUCTION

Spontaneous rhinorrhea is an unusual consequence of unruptured arteriovenous malformation (AVM), the rhinorrhea can be the consequence of insidious evolution of intra-cranial hypertension (ICH) caused by the AVM. Only 13 cases are described in the literature of unruptured AVM revealed by ICH syndrome [1]. We report in this observation a case of spontaneous rhinorrhée revealing an unruptured AVM.

OBSERVATION

It is about à 46-year-old patient, presenting a rhinorrhea installed in a progressive way for 2 years associated to occipital headaches. He has no medical history of craniofaciale trauma.

Clinical examination did not find any fever or meningeal syndrome. The MRI objectified a wide CSF leakage of the sphenoïdal sinus with meningeal and temporal parenchyme herniation in the sinus (figure 1) associated with a voluminous frontal AVM (figure 2).

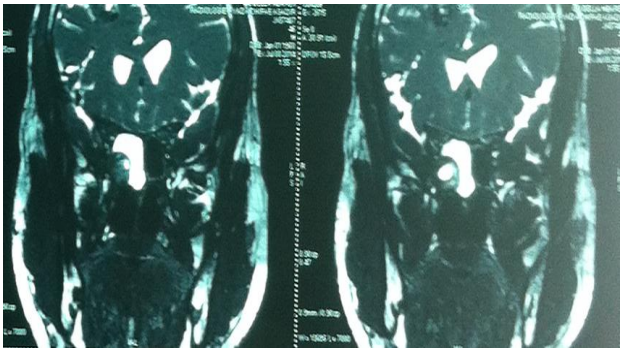

Fig-1: Coronale T2 section of brain MRI showing a CSF leakage in the side wall of the right sphenoidal sinus

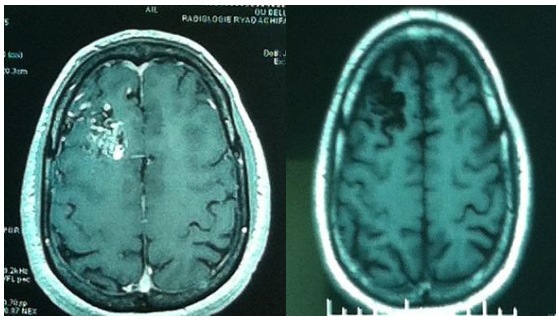

Fig-2: Axial T1 section of brain MRI with (left) and without (right) contrast objetifying a large frontale AVM

The arteriography confirmed the diagnosis, the nidus measures 40*25 mm, fed by several superficial branches of the sylvian artery, its drainage is assured by two big veins which throws itself into the superior sagital sinus (SSS) and the internal cerbral vein then galien vein and rectus sinus (RS) (figure 3).

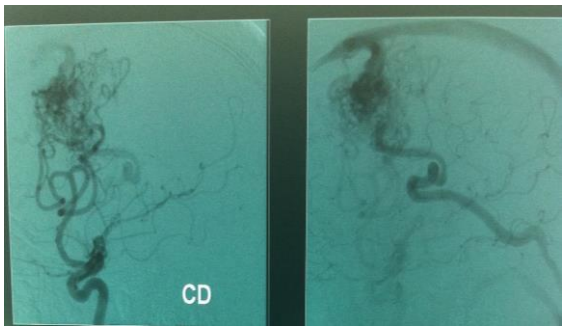

Fig-3: Cerebral arteriography objectifying a large frontal AVM fed by branches of the Sylvian artery and double drainage to the SSS and the RS

The initial therapeutic decision consisted of a ventriculo-peritoneale drainage, and a supervision of the AVM. The evolution was marked by the obstinacy of the rhinorrhea, and the surgical management of the AVM was decided. After the surgery, the patient reports the regression of the rhinorrhea and headache.

DISCUSSION

Arteriovenous malformation (AVM) is a vascular anomaly made up of direct connections between the cerebral arterial system and the venous system forming a parenchymal vascular network [2-3].

It is a pathology of the third decade [2-3]. The revelation mode of MAV is especially subarachnoid hemorrhage, seizures, headaches, neurological deficits and sometimes they are discovered incidentally [1-2-3].

The ICH is an unusual consequence of unruptured AVM, only 13 cases are described in the literature. the ICH sees itself at young patient with broadband AVM with deep sinus drainage [1-4], the exact mechanism is unknown, however several factors are incriminated: the increase of the cerebral blood volume, the disturbance of the absorption of the CSF and the cerebral oedema [5-6].

The ICH associeted to unruptured AVM is not resolved by medical treatment, and the treatment of the AVM by surgery, radiosurgery or embolisation remains the treatment of choice [1-7-8].

CONCLUSION

The exact mechanism of the ICH causing rhinorrhea associated with unruptured AVM remain unknown. The management of the unruptured AVM stays a subject of controversies however the surgical treatment every time it is possible is the treatment of choice and leads to the normalization of the ICH and the resolution of these consequences (spontaneous rhinorhea, headaches and visual disorders).

Contributions of the authors

All the authors contributed to the medical care of the patient, as well as the writing this article they approved.

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