

## Percheron's Occlusion: Difficulty of Clinical Diagnosis about One Case in the Teaching Hospital of Cocody (Abidjan-RCI)

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### ABSTRACT

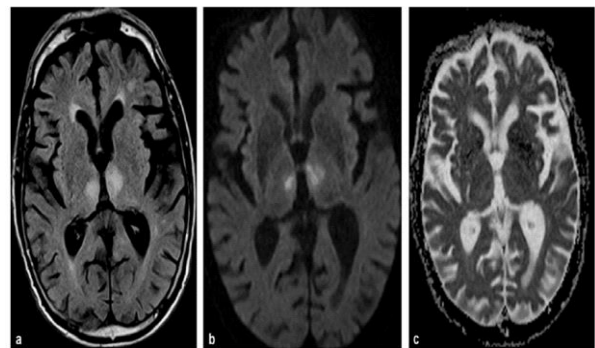
Ischemic strokes have varying etiologies and multiple locations. Some locations are much rarer than others and just as difficult to diagnose. This is the case of the ischemic bi-thalamic stroke, attributable to the Percheron artery occlusion that we report in a 33-year-old woman with a history of taking estrogen-progestin. The lesion diagnosis could only be possible thanks to the performance of brain MRI, thus testifying to the diagnostic difficulties observed. Etiological research has shown dyslipidemia. The length of stay was 88 days. At the end of intensive care, the patient was conscious, not deficient and did not present memory disorders.

**M**s. X, aged 30, with a notion of taking estrogen-progestogens for contraceptive purposes, reportedly presented a week before her admission to intensive care with headaches, insomnia, dizziness and epistaxis. The sudden onset of a vigilance disorder (Glasgow score of 9) without motor deficit prompted his admission to intensive care. The aetiological biological assessment was not helpful. It consisted of a complete blood count, a blood ionogram, blood sugar, blood urea, serum creatinine and urine toxicology research. The brain scan carried out two hours after his admission returned to normal, motivating in the aftermath, the realization of a brain MRI which made it possible to make the diagnosis of a bi-thalamic ischemia with obstruction of the percheron artery (Figure 1)

The search for risk factors revealed dyslipidemia. Treatment was based on statins combined with symptomatic treatment. During hospitalization, the patient developed pressure ulcers and pneumonia acquired under mechanical ventilation. The germ that was identified was *Staphylococcus aureus* susceptible to imipenem and amikacyn. The pressure ulcers were treated in the operating room with a stripping and flap.

Bi-antibiotic therapy (imipenem and amikacyne) guided by an antibiogram has been instituted for the treatment of pneumonia acquired under mechanical ventilation. The patient was tracheostomized following prolonged intubation. The length of stay was 88 days. At the end of the intensive care unit, the patient was conscious, not deficient and did not present memory disorders.

**Figure 1- Brain MRI in axial FLAIR section (a) and diffusion (b, c) with bilateral paramedial thalamic cytotoxic edema**



The authors declare no conflicts of interest.

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## Discussion

The vascularization of the thalamus is dependent on the vertebrobasilar system. Four vascular territories are defined: tubero-thalamic, infero-lateral, paramedian and posterior choroid. The paramedian territory is perfused through a posterior thalamo-subthalamic paramedian artery (paramedian artery) originating from the P1 portion of the posterior cerebral artery, called the communicating basilar artery. The anatomical variants of thalamic perfusion have been studied by Percheron; the latter described three types of vascularization, starting from the P1 segment of the posterior cerebral artery [1-2]. Arteries can arise on either side of P1 (type I); they can also come from the same artery (type IIA) or come from a common trunk (type 2B) which will supply the middle part of the two thalami. This common core thus bears the eponym of the Percheron artery.

Although many publications have been made on the occlusion of the Percheron artery, many difficulties persist in making the diagnosis [3-4]. The semiology in relation to this affection is polymorphic as evidenced by the numerous writings [3]. In the case which we report, the symptomatology consisted of headache, insomnia, dizziness, epistaxis and alertness disorder such as sudden onset coma (Glasgow score 9) without motor deficit. The identification of six cases of Percheron artery occlusion confirmed the clinical polymorphism of this condition but made it possible to identify the most frequently encountered signs. These were disturbances of consciousness, cognitive impairment and oculomotor disturbances. Coma and hypersomnia are found in 47% and 29% of cases, respectively. For cognitive impairment, memory disorders (anterograde and retrograde) are present in 63% of cases, confusion and behavioral disorders in 55% and 29% of cases. Oculomotor disorders involve the verticality of the gaze with Parinaud's syndrome in 61% of cases. Motor disorders and dysarthria are rarer (13% and 29%) [5].

Faced with this clinical picture, the emergency cranio-encephalic tomodensitometry returned to normal. All the biological examinations performed, looking for a metabolic etiology, were all found to be non-contributory, thus confirming the diagnostic difficulty observed by Lamboley JL [4]. Etiological research led us to perform a brain MRI. The latter made it possible to objectify a bi thalamic ischemia with obstruction of the Percheron artery.

The complexity and diversity of the clinical presentation of Percheron artery occlusion explains the difficulty in making the diagnosis on the basis of physical examination data alone. The often confusing presentation of the elements of the clinical and paraclinical picture is a source of diagnostic vagueness and therapeutic delay. Complementary radiological examinations, in particular brain MRI, make it possible to correct the diagnosis, in

particular thanks to diffusion imaging which is the technique with the best sensitivity in the early diagnosis of ischemic strokes [6]. A recent study identified four different patterns in MRI in the event of Percheron artery occlusion: bilateral paramedian thalamic involvement alone, paramedian bilateral thalamic involvement with mesencephalic lesion, paramedian and anterior bilateral thalamic involvement and finally thalamic involvement bilateral paramedian and anterior associated with a mesencephalic lesion [7]. In our current practice, few hospital structures have a brain MRI and its cost is high, making it inaccessible to the majority of our populations who do not have health insurance. The scarcity of cerebral MRI, the exorbitant cost of carrying it out and the pauperization of our populations are all factors which increase the diagnostic difficulties.

The length of stay was 88 days. During her hospitalization in intensive care, the patient was tracheotomized following prolonged intubation. During hospitalization, she developed pressure ulcers and pneumonia acquired under mechanical ventilation. The germ that was identified was multidrug-resistant staphylococcus aureus but susceptible to imipenem and amikacin. At the end of the intensive care unit, the patient was conscious, not deficient and did not present memory disorders.

## Conclusion

Obtaining an emergency brain MRI is still difficult. However, in a pathology as puzzling as the occlusion of the Percheron artery, MRI plays an important role in avoiding diagnostic error, especially since the scanner can be falsely reassuring.

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