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Case Report

Hiccups of Neurological Origin: A Case Report

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Abstract

Hiccups are most often benign and short-lived, but they can also be persistent (> 48h) or even refractory (> 1 month). In these cases, it impairs qualitý of life and can have serious health consequences. We report the case of a patient who consulted for chronic hiccups with absences and in whom the neurological origin was confirmed on brain MRI.

Keywords: Chronic hiccups, Absences, phytosanitary products, Chlorpromazine.

INTRODUCTION

Hiccups are a physiological phenomenon resulting from a coordinated abrupt contraction of all inspiratory muscles, rapidly followed by abrupt closure of the hiccupping glottis. Hiccups can be transient and benign, or chronic, in which case they are a symptom of an underlying pathology. Only in the case of chronic hiccups is an etiological investigation required for therapeutic management.

In this article, we report the case of a patient whose hiccups were of central neurological origin.

OBSERVATION

Mr E.L, aged 65, distributor of phytosanitary products, with a history of arterial hypertension on amlodipine and a prostate adenoma on medical treatment.

Consulted for chronic hiccups for 14 years associated with postprandial regurgitation and vomiting, the evolution was marked by the onset of absences for 2 years.

The oeso-gastroduodenal fibroscopy (EGDF) showed hyperplastic polyps with the presence of Helicobacter Pylori (HP) and no signs of dysplasia. Manometry showed ineffective esophageal motricity, which may be consistent with gastroesophageal reflux disease.

Medical treatment to eradicate HP was taken with a negative urea breath test. Despite HP eradication and reflux treatment, there was no improvement in hiccups. A thoracoabdominal CT scan was unremarkable.

The patient underwent an electroencephalogram, which showed normal background activity with no epileptic abnormalities on the tracing.

A cerebral MRI was ordered, revealing bi-pallidal signal abnormalities and white matter in the posterior cerebral fossa (Figure 1), suggesting a toxic cause (methanol, CO, organophosphates, etc.), chronic vascular leukoencephalopathy, and asymmetrical intra-orbital parietal thickening of the left superior ophthalmic vein, which was dilated and permeable, suggesting a cavernous hemangioma and asymmetric intra-orbital parietal thickening of the dilated, permeable left superior ophthalmic vein, suggestive of cavernous hemangioma.

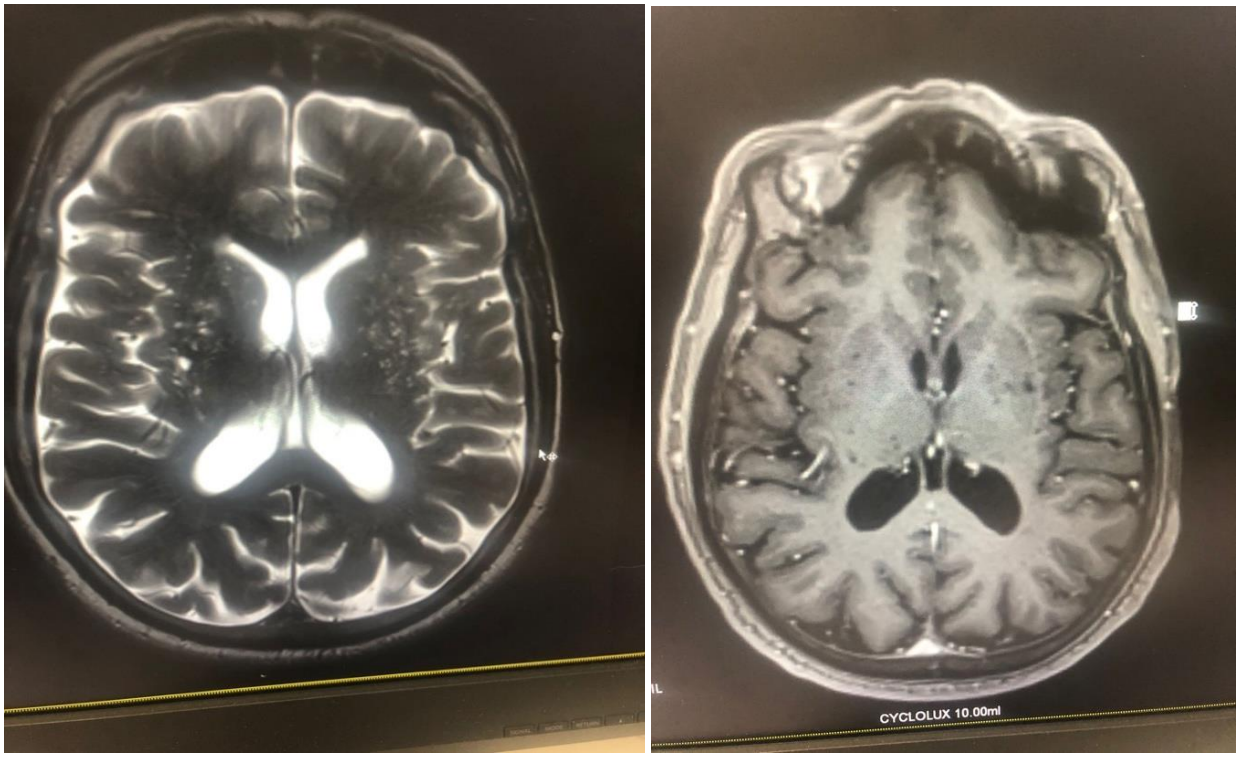

Figure 1: Bi-pallidal signal anomalies and white matter in the posterior cerebral fossa posterior in hypersignal (image on left) in hyposignal (image on right)

Given these results, the neurological origin of the hiccups following prolonged exposure to phytosanitary products was retained.

Chlorpromazine treatment was started, with a good clinical outcome.

DISCUSSION

Hiccups are a complex mechanism involving multiple neurotransmitters [1], (GABA, dopamine, serotonin, glutamate, glycine.... [2]), and anatomical structures representing a reflex arc consisting of afferents (phrenic, vagus and sympathetic nerves [T6-T12]) a central zone involving the periaqueductal gray and subthalamic nuclei, and efferents in motor fibers from the phrenic nerve to the diaphragm and the accessory nerve to the intercostal musculature [3, 4, 2] The mechanism of hiccups is due to irritation of the reflex arc.

Hiccups are classified according to their duration. Most sources define less than 48 hours as an acute attack. Persistent hiccups" last more than 2 days [2, 3, 6].

Persistent hiccups are often a symptom of an underlying disease. It is more common in men (91%) than in women. Most men with refractory hiccups are over 50 [7].

Because of the reflex arc, there are many causes of refractory hiccups. Anything that irritates the afferent, efferent or central zone can trigger hiccups [2, 8, 9] (an intrinsic or extrinsic lesion intrinsic or extrinsic lesion along nerve pathways, or by drugs or systemic conditions).

The search for an esophageal cause should be the priority, given the frequency of esophageal abnormalities that can be responsible for hiccups [4, 5].

Numerous non-esophageal causes of hiccups have also been identified [10]. They may be abdominal, thoracic, cervical or neurological.

Hiccups are more common in diseases of the central nervous system. In neurology, the motor phenomenon of hiccups is best described as myoclonus [11]. A model for clinical research is that of John Newson Davis, published in 1970. It involved three patients with refractory hiccups. One, aged 32, had hiccups secondary to cervical hydromyelia for 10 years; the second, aged 60, had hiccups for several months following an episode of delirium tremens; and the third, aged 52, had hiccups for several days following the introduction of alpha-methyldopa therapy. The hiccups ceased on discontinuation of this antihypertensive [12].

Numerous agents have been reported in the literature to help refractory hiccups, including but not limited to; metoclopramide, phenytoin, diazepam, quinine, droperidol, chlorpromazine, methylamphetamine, baclofen and haloperidol [13].

CONCLUSION

Hiccups are a common problem affecting many disciplines, including neurology, as they involve multiple neurotransmitters and anatomical structures within the central and peripheral nervous system.

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