Short communication

Horner syndrome as a manifestation of carotid artery dissection☆,☆☆

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ABSTRACT

Clinical case: A 42-year-old man presented with ptosis and miosis in his left eye and a history of headache over the last 20 days. An angioresonance showed dissection of internal carotid artery.

Discussion: “Painful Horner’s Syndrome” is considered to be a medical emergency due possible onset of an internal carotid artery dissection. We consider that awareness of neuro-ophthalmologic emergencies is very important in the clinical praxis of an ophthalmologist. Multidisciplinary treatment and follow-up of these patients are required.

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Síndrome de Horner como manifestación de disección carotídea

RESUMEN

Caso clínico: Un varón de 42 años se presenta con ptosis y miosis izquierda después de una historia de cefalea homolateral de 20 días de evolución, que empeora progresivamente durante los últimos días. Una angioresonancia revela disección de la arteria carótida interna.

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Introduction

An interruption in any point of the sympathetic pathway in its path from the central nervous system to the ocular globe could cause a Horner syndrome. When the syndrome is complete, affected patients exhibit a triad consisting in miosis which becomes more evident in low lighting, upper eyelid ptosis due to involvement of the Müller muscle enervating fibers and a facial anhidrosis in the affected side.\(^1\)

The Horner syndrome can be congenital or acquired. Among the latter, the «painful Horner syndrome» is noteworthy as it constitutes a medical emergency. This paper presents the case of a patient with painful Horner syndrome as an expression of a spontaneous carotid dissection.

Clinic case

Male, 42 years old, was presented with a homolateral headache history with an evolution of 20 days and the pain was becoming progressively worse in the past few days. His personal history comprises arterial hypertension with years of evolution, during the treatment by his family doctor. Upon exploration the patient exhibited an uncorrected visual acuity of 20/20 in both eyes with intraocular pressure of 12 mm Hg in the right eye (RE) and 15 mm Hg in the left eye (LE). Extrinsic ocular movements are maintained, but left upper eyelid ptosis of 3 mm with adequate function of the elevator muscle is worthy of note (Fig. 1). In addition, the patient exhibited anisochoria with the pupil diameter of 5 mm in RE and 3 mm in LE (Fig. 2). The cocaine test was performed, instilling 4% cocaine once in each eye. The absence of pupil dilatation of the left eye and adequate dilatation in the right one 45 min after administering the eyedrops confirmed the Horner syndrome diagnostic because, under normal conditions, cocaine inhibits the recapturing of noradrenaline in nervous endings, causing miosis. In addition to the absence of pupil dilatation, the ptosis of the affected eye is not modified with the cocaine test, and this result also points towards the Horner syndrome. Angioresonance (ARM) revealed a dissection of the intrapetrous left carotid with significant vascular stenosis 1.5 cm long (Figs. 3 and 4). On the basis of the clinical findings with compromise of the left carotid artery and the results

![Fig. 1 – Upper left eyelid ptosis.](image1)

![Fig. 2 – Infrared photograph showing the miosis in the left eye.](image2)

![Fig. 3 – Magnetic resonance showing stenosis of the intrapetrous left carotid lumen with the intramural thrombus.](image3)
of supplementary studies, the diagnostic was spontaneous carotid dissection. Systemic hypotensor treatment was pre-
scribed together with anticoagulation with acenocumarole, analgesia and absolute rest. Despite adequate blood pressure
control and hematostatic values remaining within the therapeu-
tic range, the patient evolved without changes in what
concerns the neurological assessment. At week 3, a control
angiography (ARM) evidenced a worsening of the radi-
ological condition with extension of the vascular stenosis to
3 cm together with an 80% reduction of the blood flow in the
affected vessel. It was decided to maintain the same treat-
ment because it was considered to be the most appropriate,
maintaining the patient with regular checkups. In subsequent
weeks the patient exhibited progressive improvements. Five
months after the first visit, a new angiography revealed that the thrombus had reabsorbed considerably and at present
the blood flow reduction is of 20% and the Horner syndrome
has disappeared.

Discussion

The clinical case presented here is of great medical interest
due to the infrequent finding and the need of the ophthalm-
ologist to recognize the described pathology because otherwise
the patient’s life can be compromised. The suspected diag-
nostic of carotid dissection was initially based in the finding
of a Horner syndrome associated to homolateral headache, a
combination of clinical signs that can be called for an ade-
quately imaging test to confirm or discard said pathology. In addition
to the headache and the Horner syndrome, the appearance
of brain or retinal ischemia signs has been described in the
context of carotid dissection, making a complete triad unnec-
essary to reach a clinical diagnostic.2

A spontaneous carotid dissection was suspected in said
patient due to the absence of a traumatic event or personal his-
tory other than arterial hypertension. The exact mechanism
that gives rise to a spontaneous arterial dissection is not fully
understood. Schievink et al. described as a possible patho-
genesis the formation of one intramural hematoma that goes
from the core of the artery towards the medial region, causing
a dissection with subsequent stenosis of the artery patency
as in this case.2 Alternatively, the hematoma can penetrate
into the subadventitial space forming an aneurysmatic dilata-
tion, another presentation of an arterial dissection.2 However,
the factors which determine the dissection remain unknown,
even though some theories propose a possible association
with connective tissue defects, hereditary mechanisms, minor
cervical traumatism, physical efforts or arterial hypertension
as in the case described herein.2,3

In the diagnostic of carotid dissection, an echography of
the neck vessels is a highly useful option as an initial screening,
with digitalis obstruction angiography being the technique of
choice, even though angiography of neck vessels is a highly
satisfactory diagnostic alternative with a specificity of 99% and
sensitivity of 85%.4,5

Treatment is usually conservative. However, there is a
lack of large scale randomized studies supporting anticoag-
ulation treatment. The prognosis depends on the severity
and extension of possible cerebral ischemia with a recur-
rence risk of 2% during the first month and of 1% in the first
year.7

The authors consider that an adequate knowledge of these
neuro-ophthalmological emergencies is very necessary for the
ophthalmologist and requires multidisciplinary attention in
order to ensure adequate treatment and follow-up.

Conflict of interest

The authors have no conflict of interests to declare.

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