



## Painful Horner's Syndrome and Its Association with Internal Carotid Artery Dissection

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**Categoria:** Cefaleias Secundárias

### Introduction

Claude Bernard-Horner Syndrome is a medical condition that affects the sympathetic autonomic nervous system. It manifests clinically with eyelid ptosis (drooping of the upper eyelid), miosis (constriction of the pupil) and anhidrosis (decreased sweating) on the hemiface. As part of the disease, Painful Horner Syndrome is characterized by the presence of intense neck pain and pain in the hemiface, with dissection of the internal carotid artery being one of the most common causes of this syndrome.

### Objective

This study aims to deepen the understanding of Painful Horner's Syndrome and analyze the relationship between this syndrome and dissection of the internal carotid artery, highlighting the distinctive symptoms, such as eyelid ptosis, miosis, anhidrosis and intense pain in the neck and face, in order to improve clinical recognition and early diagnosis of this condition.

### Methods

Considering it to be a specific topic, we included articles published from 1987 to 2021, using the descriptor "Painful Horner Syndrome" on the PubMed and Embase platforms; twelve articles were selected from 38 results, removing duplicates and inaccessible ones. The articles were subsequently compiled for the purpose of this review.

### Results

In the analysis, we saw a strong association between Painful Horner's Syndrome and internal carotid artery dissection. Carotid artery dissection occurs when the layers of the artery wall separate due to some kind of trauma or even spontaneously. This can affect the sympathetic fibres that accompany the internal carotid artery, leading to Classic Horner's Syndrome (eyelid ptosis, miosis and anhidrosis) with the addition of intense pain in the neck and face, characterizing Painful Horner's Syndrome. Horner's syndrome associated with carotid dissection should be considered in the differential diagnosis of patients with headache and ipsilateral ocular symptoms (In one of the articles, a study of 90 cases of isolated Horner's Syndrome due to dissection of the internal carotid artery revealed that 91% of these cases were painful). Most ischemic attacks occur within two weeks of carotid dissection. After this period, the risk of an ischemic attack decreases dramatically, which is why early diagnosis and treatment are important. The diagnosis of Painful Horner's Syndrome usually begins with the observation of characteristic symptoms, such as eyelid ptosis, miosis and anhidrosis in the hemiface with the presence of pain. The next step is to perform imaging tests such as ultrasound, magnetic resonance angiography (MRA) or computed tomography (CT) to evaluate the carotid artery and confirm the presence of a dissection. The diagnosis of carotid dissection requires cerebral angiography, which will reveal typical angiographic features such as a long, conical narrowing of the internal carotid artery. Treatment of carotid artery dissection varies depending on the severity of the symptoms and may include anticoagulant therapy, antiplatelet therapy and, in severe cases, surgical intervention. Immediate treatment is necessary to prevent the development of ischemic strokes

### Conclusion

Painful Horner's Syndrome should raise suspicions about the possibility of an underlying carotid dissection. Early diagnosis and appropriate treatment are essential to prevent serious complications. More studies are needed to deepen our understanding of the relationship between Horner's Syndrome and carotid artery dissection.

**Keywords:** Horner's syndrome; Carotid dissection; Painful Headache.