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Tolosa-Hunt Syndrome

Síndrome de Tolosa-Hunt

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Abstract

We present a case study of Tolosa-Hunt syndrome, a rare idiopathic disease, that is characterized by painful ophthalmoplegia of strong intensity, generally affecting the third cranial nerve, and, less frequently, the fourth or the sixth cranial nerves. Usually, there is no visual impairment. The treatment is based on corticosteroids with satisfactory results in most cases although recurrences can occur at intervals from months to years. In our case, the patient presented sudden pain periorbital associated with cranial nerves involvement, which have an excellent outcome after treatment with corticosteroids, with no relapses until today.

Keywords*: Tolosa-Hunt Syndrome; Ophtalmoplegia; Adrenal cortex hormones*

Resumo

Nós apresentamos um caso de Síndrome de Tolosa-Hunt, uma doença idiopática rara, caracterizada por oftalmoplegia dolorosa, de forte intensidade, geralmente afetando o terceiro par craniano, e, menos frequentemente, o quarto e/ou o sexto par. Geralmente, não há acometimento visual. O tratamento é feito com base em corticóides com resultados satisfatórios na maior parte dos casos, embora recorrências possam ocorrer após meses a anos. Relatamos caso de paciente masculino de 36 anos, com diagnóstico prévio de sífilis congênita e esquizofrenia, com dor periocular súbita associada com envolvimento de pares cranianos, que teve melhora total após vigência de corticoterapia, sem recorrências até a presente data.

Descritores: Síndrome de Tolosa-Hunt; Oftalmoplegia; Hormônios do cortex adrenal

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Introduction

In 1954 Tolosa observed a granulomatous inflammation of the intracavernous carotid in a patient with painful ophthalmoplegia.[1] Later, in 1961, Hunt described the association between similar cases and some indolent inflammation of cavernous sinus, which posteriorly would set the Tolosa-Hunt Syndrome.[2] However, even 60 years after the original description, this disease remains poorly comprehended.[3] It is characterized by periorbital pain, along unilateral ophthalmoplegia, possible as a result of a granulomatous inflammatory process of cavernous sinus, which usually has a dramatic response to steroids use, although the recurrence possibility. Spontaneous improvement can occur too.

This report describes a schizophrenic patient, who had congenital syphilis in as a child, complaining about painful ophthalmoplegia, that filled International Headache Society's (IHS) criteria to Tolosa-Hunt Syndrome, despite the different initial hypothesis.

Case Report

M.C.C, 36 years old, went to HFSE's (Hospital Federal dos Servidores do Estado do Rio de Janeiro) Ophthalmology Emergency complaining about sudden right periorbital pain, of moderated intensity, which had started 20 days before. He also referred eventual episodes of holocranial headache, and complete ptosis at the same side of the face for about 10 days. The quality of the information was highly compromised as a result of patient's poorly cognition. He was previously diagnosed with schizophrenia, in use of Chlorpromazine, Olanzapine and Promethazine, and in regular monitoring by a neurologist. Beyond that, when asked about previous illness, he referred congenital syphilis, but could not give any information about previous treatment. FTA-ABS IgG was reactive. VRDL was non reactive.

The ophthalmologic exam showed visual acuity of 0,2 in both eyes, which did not improved with refraction. We also noticed complete ptosis on the right side, and marked hypofunction in five of the six external extraocular muscles at the same side (medial rectus, superior rectus, inferior rectus, inferior oblique and superior oblique), besides, ipsilateral mydriasis was also noticed, indicating simultaneous paralysis of the III and IV cranial nerves in the right side. (Figure 1) Conjointly, there was typical bilateral stromal opacity of congenital syphilis in his cornea. The retina exam did not reveal any abnormality.

Facing a case of painful ophthalmoplegia in a patient with previous story of congenital syphilis, the preliminary evaluations were focused in the possibility of neurosyfilis, however, after the correct serologic and CSF (cerebral spinal fluid) analysis, this hypothesis was discarded. An emergency cranial CT angiography was requested, but did not reveal any expansive lesion or aneurysms. Cranium and orbital MRI (magnetic resonance imaging) was also requested, and revealed thickening of the cavernous sinus law, isosignal in T2, enhancement by gadolinium (Figures 2A and 2B). After the correct investigation and exclusion of other possible diagnosis as vasculitis, infections, granulomatous processes, and especially tuberculosis and sarcoidosis, we initiated pulses of Methylprednisolone 1g for five days, and, after 48 hours the patient exhibited a complete remission of signs and symptoms, only maintaining some mild ptosis. At this time, the patient fulfilled the diagnostic criteria for Tolosa-Hunt Syndrome according to the IHS. (Table 1). Until today the patient had no recurrence of the disease.

Table 1
Differential diagnosis for Tolosa-Hunt Syndrome

1. Trauma
2. Vascular
Intracavernous carotid artery aneurysm ;
Posterior cerebral artery aneurysm;
Carotid-cavernous fystula;
Carotid-cavernous trombosis
3. Neoplasm
Primary intracranial tumor;
Pituitary adenoma;
Meningioma;
Craniopharyngioma;
Sarcoma;
Neurofibroma;
Gasserian ganglion neuroma;
Neurofibroma
Lymphoma
Leukemia
Primary cranial tumor: chordoma, chondroma, giant cell tumor
Metastasis: Nasopharyngeal tumor Cylindroma Adamantinoma
Squamous cell carcinoma, myeloma
4. Others
Bacterial Sinusitis, mucocele, periostitis
Viral: Herpes zoster
Fungal: Mucormycosis
Spirochetal: syphilis
Mycobacterial: tuberculosis
Sarcoidosis
Wegener's granulomatosis
Eosinophilic granuloma
Diabetic ophthalmoplegia
Giant cell arteritis
Ophthalmoplegic migraine

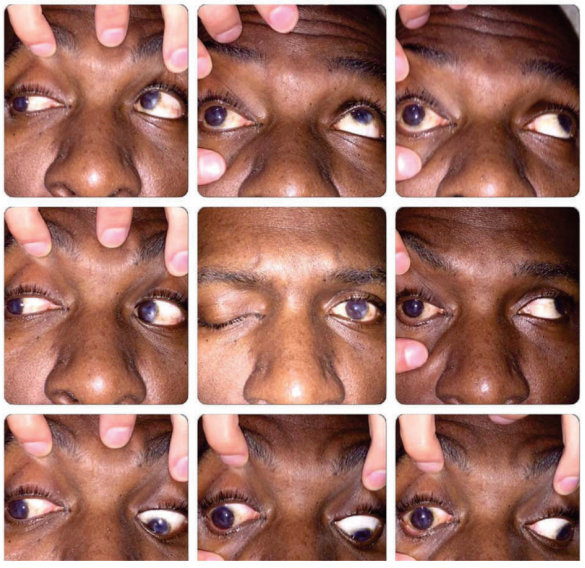
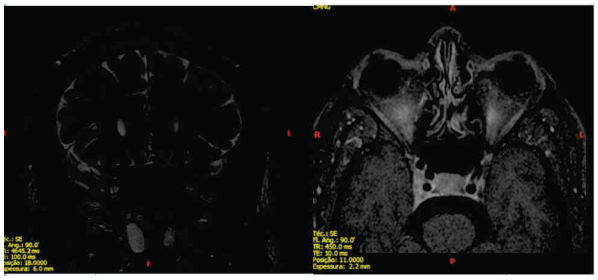


Figure 1 : Simultaneous paralysis of Third and Fourth cranial nerves in the right side. Corneal Stromal opacity due to congenital syphilis is also observed.



Figures 2A and 2B: MRI, showing thickening of the cavernous sinus law, isosignal in T2, enhancement by gadolinium

Discussion

Tolosa-Hunt Syndrome is a rare disease, with an unknown etiology, characterized by hemicranial or periorbital pain, associated with cranial nerves paresis or paralysis as well as granulomatous inflammation of the cavernous sinus. This disease usually has a dramatic response to steroids treatment.

In 1954 Tolosa[1] reported a case of a patient with complete paralysis of third, fourth and sixth cranial nerves on the left side, associated with orbital pain. His first hypothesis was subclinoid carotid aneurysm, however, the angiography only revealed segmentary narrowing at carotid siphon, leading him to perform a transfrontal intradural exploration. Unfortunately, the patient died in the third day after the procedure. A post-mortem evaluation was performed: autopsy and multiple histopathologic studies of the cavernous sinus were done, allowing him to establish the fundamental bases of this previously unknown syndrome. Eduardo Tolosa's macroscopic findings showed granulomatous tissue in intracavernous carotid. His histopathological studies revealed thickening of intracavernous carotid's adventitious layer with non-specific granulation tissue surrounding it, which justified the narrowing, tortuosity and the strong rigidity of this portion of carotid artery. This findings in the index patient can be analyzed in parallel with our patients MRI's abnormalities.

Some years later, in 1961, Hunt[2] described six cases similar to Tolosa's, referring to the disease as "with an unknown etiology". It was just in 1966 when Smith and Taxda[3] published their work that the term Tolosa-Hunt Syndrome was first used. They also highlighted the great improvement of the symptoms after 48 hours of steroids therapy. More recent histopathological studies revealed non-specific granulomatous inflammation on cavernous sinus and orbital apex. [4]

Albeit being described for the first time more than 50 years ago, until present days, there is only little information about the etiology of this syndrome. The diagnosis is based on IHS's 2004 criteria:[4]

A – One or more episodes of unilateral orbital pain persisting for weeks if untreated;

B – Paresis of one or more of the third, fourth, and/or sixth cranial nerves and/or demonstration of granuloma in MRI or biopsy;

C – Paresis coincides with the onset of pain or follows it within 2 weeks;

D – Pain and paresis resolve within 72 hours when treat adequately with steroids;

E – Other causes have been excluded with appropriate evaluation.

Tolosa-Hunt Syndrome can affect people of any age, and has no sex preference. Both sides can be affected, albeit some reports reveal that bilateral involvement can also occur. The patients complain about pain, which can improve spontaneous in a few weeks if it's not treated. The third cranial nerve is the most affected (in 79% of cases), followed by the sixth (45%) and IV (32%). Pupillary reaction can be normal or not. In some rare cases, optic nerve dysfunction can be observed, indicating that the inflammatory process can also occur in the orbital apex(?). In such patients, the optic disc can be normal, swollen or pallid, with variable impairment of visual acuity.[5] More rarely, other cranial nerves, non-located in cavernous sinus or orbital apex can be affected, as the maxillary nerve or mandibular branches of the trigeminal. Although rare, some patients can also refer nausea and vomiting in consequence to pain intensity.

In general, this syndrome remits spontaneous, nonetheless, 50% of these patients can present recurrences (which may be ipsilateral, contralateral, or, in rare cases, bilateral), months or even years after the initial attack. Residual paresis may also persist.

Image exams, in special MRI can reveal abnormalities in cavernous sinus region. The presence of these anomalies contributes to diagnosis, but their absence doesn't exclude it.[6] The mostly frequent differential diagnosis are presented in table 1.

Steroid therapy with oral Prednisone 1 mg/kg/day, or even in pulses is recommended for patients with criteria for Tolosa-Hunt. In cases where there is no response to steroid use, immunosuppressive drugs as Azathioprine and Methotrexate can be beneficial. [7]

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