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Interstitial keratitis in patients with Cogan's Syndrome

Ceratite intersticial em paciente com Síndrome de Cogan

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ABSTRACT

Cogan's syndrome is characterized by interstitial keratitis non-syphilis associated with vertigo, tinnitus and sensorineural hearing loss. We report a case that illustrates a model of multidisciplinary intervention in the diagnosis and treatment of disease.

Keywords: *Eye manifestations/diagnosis; Syndrome; Vasculitis; Deafness; Vertigo, keratitis; Corneal opacity; Case reports*

RESUMO

A Síndrome de Cogan é caracterizada pela ceratite intersticial não luética associada à vertigem, tinnitus e disacusia neurossensorial. Relatamos um caso que ilustra um modelo da intervenção multidisciplinar no diagnóstico e tratamento da doença.

Descritores: Manifestações oculares/diagnóstico; Síndrome; Vasculite; Surdez; Vertigem; Ceratite; Opacidade da córnea; Relatos de casos

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Introduction

Cogan's Syndrome was first described by Morgan and Baungartner in 1934 as an audio-vestibular dysfunction associated to non-syphilitic interstitial keratitis, being later classified as a clinical entity by Cogan in 1945[1]. The classic form of the disease is characterized by non-lucitic interstitial keratitis associated to vertigo, tinnitus and sensorineural hearing loss. In its development, it leads to the loss of hearing acuity in a few months, and this loss may be permanent in case the diagnosis is delayed, thus depriving the patient from the treatment. The atypical form usually involves the entire ocular structure, leading to recurrent episodes of conjunctivitis, episcleritis, uveitis, optic disc edema and retinal vasculitis[2-5]. Evidence of systemic vasculitis are found in 50% of patients, leading to a worse prognosis from the systemic point of view[3,6]. The atypical form evolves with ocular or orbital inflammation associated to audio-vestibular dysfunction[1] and higher incidence of systemic symptoms, mostly related to vasculitis[7].

There is disagreement in the literature regarding the presence of corneal involvement in atypical form of the syndrome[1,7]. The etiology and pathophysiology of this entity remain unknown; however, there is association with infection of upper airways preceding the condition[7] and hypotheses of probable viral agents[1]. Others believe that this is a systemic autoimmune condition[4] associated to findings as leukocytosis with neutrophilia, variations of serum levels of immunoglobulin and complement, increased levels of T and B lymphocytes, as well as evidence of inflammatory involvement of the skin, muscles, liver[1] and great vessels (aorta)[1,4].

Case Report

White female patient, 12 years old, single, born and resident in São Paulo, referred to the ophthalmology service for investigation of loss of visual acuity and progressive hearing. The eye examination measured the visual acuity with correction of 20/80 in the right eye and 20/50 in the left eye. Symmetrical and bilateral photoreal reflections shown. Extrinsic ocular motility without changes. Biomicroscopy showed bilateral interstitial corneal infiltrates associated to reactive conjunctival hyperemia and deep lesion-related corneal vascularization. (Figure 1). It showed intraocular pressure of 12 mmHg in both eyes. It is not possible to make the eye fundus exam due to opacity. Ultrasonography revealed applied retina and non-detectable digging.

In the laboratory tests, the patient presented erythrocyte sedimentation rate (ESR) of 30 mm (normal up to 20 mm), complement C4 below the reference values, anti-nucleus negative factor, C3 complement above normal (205 mg/dl; reference from 90 to 180 mg/dl), normal total complement, anti-cardiolipin negative (IgG and IgM) antibodies, anti-cytoplasmic antibodies (ANCA) negative (P and C ANCA), non-reactive anti-ENA antibodies (RNP), tuberculin test (PPD) of 5 mm , HIV-negative serologies for types 1 and 2, herpes, measles, chlamydia and syphilis (VDRL and FTABS), normal blood count, normal chest x-ray. The otorhinolaryngologic examination with audiometry showed bilateral sensorineural hearing loss, brainstem evoked response audiometry (BERA) within the normal range.

The patient was treated with dexamethasone 0.1% topical 4 x/day There was no improvement of the ocular condition after 2 months of treatment, and a penetrating ocular transplant of the right eye was indicated. She presented improvement of the vision after 2 months of follow-up, having vision of 20/40 and 20/50 with the best correction. After one year of follow-up, she returned to the service with complaint of low visual acuity of the operated eye. At the ophthalmological examination, she presented vision with correction of finger counting in the right eye and 20/50 in the left eye. The biomicroscopy examination presented ocular hyperemia of the right eye with anterior chamber reaction (2+/4+), inferior stromal edema with presence of Kodadoust line. The left eye showed interstitial corneal infiltrates associated to reactive conjunctival hyperemia and deep corneal vascularization (Figures 1 and 2). Due to suspicion of corneal transplant rejection, the patient was referred to the rheumatology service for treatment with prednisone 1mg/kg/day and introduced cyclosporine 1% every 6h and prednisone acetate 1% every hour. A corneal retransplant was prescribed after clinical treatment. A follow-up along with the rheumatology sector was necessary to avoid a new rejection situation.

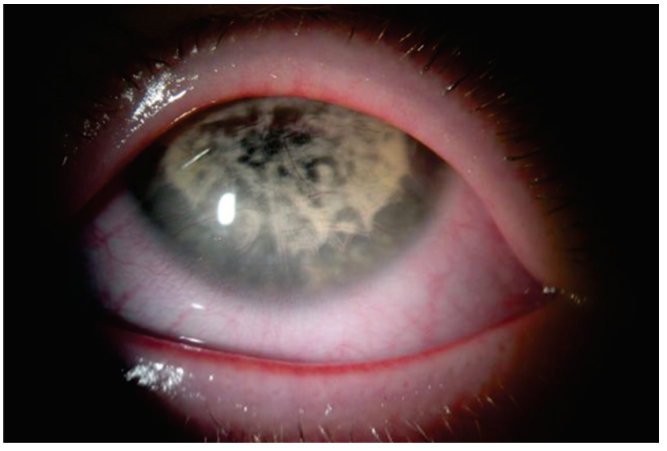

Figure 1: Left eye with interstitial corneal infiltrates associated to reactive conjunctival hyperemia and deep corneal vascularization, similar to that of the right eye before corneal transplant.

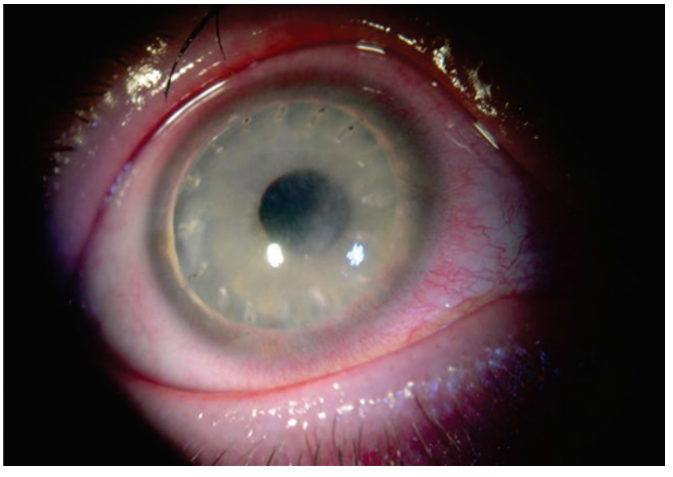

Figure 2: Ocular hyperemia of the right eye with anterior chamber reaction (2+/4+), inferior stromal edema with presence of Kodadoust line.

Discussion

Cogan's syndrome is a rare disease that predominantly affects young, white adults, with no predominance of gender. It is believed that Cogan's syndrome has a background of autoimmunity at its origin and is associated to other diseases that have the same characteristic (Wegener's disease, polyarteritis nodosa, rheumatoid arthritis)[8]. The atypical form of the disease is more related to the systemic commemorative ones, being more aggressive and of worse prognosis[3,6]. Eye symptoms of atypical form (conjunctivitis, episcleritis, optic disc edema, retinal vasculitis) can precede in years the vestibular-auditory symptoms, making the diagnosis of the disease more difficult. The diagnosis is of exclusion and based on the clinical suspicion since there are no specific laboratory tests and there are several pathologies that can mimic it.

The presented condition fits the diagnosis of Cogan syndrome, which is part of the differential diagnosis of non-lutic interstitial ceratites. Tuberculosis and Hansen's disease should also be possible diagnostic suspicion. This syndrome presents as main differential diagnoses syphilis, measles, rubella, herpes zoster and Vogt-Koyanagi-Harada disease. The differential diagnosis with syphilis is made by serology research. In viral diseases, the differential diagnosis is made by its manifestations; and in VogtKoyanagi-Harada disease, there are signs of ulcer meningitis, alopecia and vitiligo. Keratitis associated to sensorineural hearing loss is very characteristic of the disease[1], although auditory-vestibular symptoms are practically indistinguishable from Meniere's disease. Topical and systemic immunosuppressants such as corticosteroid can be used in the treatment of the disease. The patient did not get good response, requiring the indication of corneal transplant, illustrating the need for a joint monitoring with the department of rheumatology to avoid the rejection of the corneal transplant. There are reports of improvement in the ocular condition only with topical and systemic immunosuppression, demonstrating the importance of the correct early diagnosis and multidisciplinary follow-up. [9,10]

Cogan's syndrome does not always manifest initially with all its characteristics, which may hinder the diagnosis that is eminently clinical. Thus, a detailed follow-up of the patient with serial audiometries, multidisciplinary evaluation (otorhinolaryngological, psychological, ophthalmologic and clinical) is essential for the diagnosis. This syndrome becomes a clear model that the multidisciplinary intervention optimizes the early diagnosis, directly influencing the prognosis of the disease[11].

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