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Case Report

Neurosensory Loss Hearing of Syphilitic Etiology in a Patient with Human Immunodeficiency Virus Infection

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Abstract

Syphilis is a systemic infection, of chronic evolution with brief symptomatic periods and prolonged asymptomatic periods. In HIV patients, it has been seen that the neurological manifestations of syphilis may appear early and with a higher incidence of atypical manifestations. We showed a clinical case of our Infectious Disease Unit. A man, 34 years old, with history of beta lactam allergy, diagnosed with HIV infection to consultation for acute bilateral hearing loss and tinnitus without other associated symptoms. He is diagnosed of acute bilateral neurosensorial hearing loss without improvement after corticosteroid treatment. He received doxycycline and one month later presented clinical improvement with resolution of hearing loss and occasional tinnitus. Cochleovestibular dysfunction in otosyphilis can occur at any stage of the infection because of direct damage to the cochleovestibular organ. During dissemination spirochetes invade the perilymph of the middle ear leading to inflammation of the labyrinthic structures and the otic capsule. Symptoms include acute or insidious bilateral hearing loss, tinnitus, and vestibular symptoms ranging from dizziness to vertigo. Its diagnosis is based on serological tests and the exclusion of other etiologies. The therapy of choice is high dose intravenous penicillin; however, there are series of cases with successful treatment with doxycycline.

Keywords: *Syphilis; HIV; Tinnitus*

Introduction

Syphilis is a chronic systemic infection with short symptomatic periods and prolonged asymptomatic periods, produced by Treponema pallidum. Its prevalence far from diminishing has increased disproportionately in certain populations as men who have sex with men. The coexistence of HIV/syphilis in this group is high, the primary and secondary syphilis rate being more than 100 times compared to that of heterosexual women and men [1]. In patients with HIV infection, it has been shown that the neurological manifestations of syphilis may appear earlier, occurring in the first 5 years after primary infection, and with a higher incidence of atypical presentations [2]. The serological response to non-treponemal tests may also be altered, with unusual findings of false negatives. We emphasize the following clinical case happened in our service.

A 34-year-old male, Caucasian, with a history of allergy to lactams documented in a hospital setting and who reported having unprotected sex with men. Diagnosis of HIV infection in 2006 and treatment with tenofovir/emtricitabine (TDF/FTC245/200 mg) one tablet every 24h + lopinavir/ritonavir (LPV/r 200/50 mg) 2 tablets every 12h since 2008, Maintaining undetectable viral load and CD4 + T lymphocytes > 500/mm^3.

Consultation for acute bilateral bilateral hearing loss and tinnitus, with no other associated symptoms. General physical examination and neurological examination showed no alterations. An audiometry was performed in which moderate left-handed sensorineural hearing loss (peak of 70 db at a frequency of 1 to 8 KHz) was evidenced with normal otoscopy and tympanometry.

He is diagnosed of acute bilateral neurosensorial hearing loss and receives treatment with systemic steroids (prednisone 50 mg/day), without clinical or audiometric improvement at 7 days. Blood counts and serum biochemistry showed no alterations, CD4 T lymphocytes were 650/mm^3 and HIV viral load < 20 copies / ml. Serological studies were performed with the following results: anti-HCV negative; Ag HBV negative; Ac IgG anti-CMV positive (IgM negative); Ac anti-virus Epstein Barr, IgG-nuclear antigen Epstein Barr) and viral capsid antigen positive; Paul Bun-nell negative; Ac IgG anti-Toxoplasma negative; VDRL negative; TPHA positive; FTA positive (+++); weak positive antinuclear antibodies with mottled pattern; Ac anti-DNA and extractable nuclear antigen negative. An MRI of the posterior fossa and internal auditory ducts found no pathological findings. Without However, we observed that it had routine prior serologies for negative syphilis (one and four years old) with negative VDRL and TPHA.

Given the clinical suspicion of involvement of the cranial nerve by syphilis and the paradoxical results of the current line serology, with non-treponemal negative and positive treponemal tests, the possibility of a "prozone phenomenon" is planned. New serology and the VDRL result after dilution of the serum was positive to a 1/256 titre. The patient refused to undergo a lumbar puncture and underwent desensitization to penicillin.

Treatment was given with doxycycline 100 mg, 1 tablet every 12h for 28 days. One month later, he reported only the presence of occasional tinnitus and complete resolution of bilateral hypoacusis. A new audiometry was performed with normal results. Two and six months after the end of treatment VDRL titers decreased to 1/8 and 1/4, respectively.

Cochleovestibular dysfunction present in otosyphilis can occur at any stage of infection as a result of direct damage to the cochleovestibular apparatus. During design, spirochetes invade perilymph of the inner ear leading to inflammation of the labyrinthine and optic capsule structures, and may occur even though CD4 is high in patients infected with HIV. Its diagnosis is based on an acute or subacute sensorineural hearing loss not explained by other causes and in the serological tests. Autoimmune processes are part of the differential diagnosis. Its symptoms include cochleovestibular involvement with acute or insidious bilateral (but often asymmetric) hearing loss, tinnitus and vestibular symptoms ranging from dizziness to vertigo. Unilateral clinical presentation requires imaging (computed tomography and/or MRI) to exclude non-infectious local processes. The parameters in the CSF are usually normal, but histologically, fibrosis and ischemic necrosis can be seen. Audiometry shows sensorineural hearing loss that classically affects both high and low frequencies, but not the medias [3-6]. False-negative results in non-treponemal tests may occur when the test is performed prior to the immunological response or in patients with marked immunosuppression, and the "prozone phenomenon" is also described, especially during secondary schooling, And which occurs when the antibodies are present in excess by blocking the normal Ag-Ac reaction and showing weak atypical or negative reactivity when the serum is undiluted; With published reports documenting the incidence between 0.2% and 2%, and becoming higher in the HIV-infected population [7].

Without treatment, otosyphilis may progress to pro-found deafness in months or years, with symptoms fluctuating but progressively deteriorating. The first line therapy is penicillin in high doses via intravenous and steroids. However, there are a series of cases of successful doxycycline treatment, which possibility of an attractive alternative treatment given its effectiveness in the early stages of syphilis, its suitability for use, its lower cost and its good distribution in CSF [8].

A high index of suspicion of atypical syphilis should always be considered in the field of HIV coinfection, before being attributed to autoimmune etiologies; The nonspecific positivity of the ANA in this patient without other clinical data on connective disease, the positive finding of the treponemal tests and the good clinical and serological response to the treatment support the diagnosis of early latent syphilis with otological involvement.

Conflict of Interest

I declare, no interest of conflict.

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