Temporomandibular Joint Disorders During HIV Infection: A Case Report

Paolo M. Fiorentino, DMD, MS, PhD
Former Fellow
Division of Orthodontics/TMJD
University of Rochester
Rochester, New York
and
Adjunct Professor
Department of Orthodontics/TMD
Faculty of Medicine and Surgery
University of Turin
Turin, Italy

Maria G. Piancino, MD, DMD, PhD
Internal Fellow and Adjunct Professor

Cesare Debernardi, MD, DMD
Full Professor

Department of Orthodontics/TMD
Faculty of Medicine and Surgery
University of Turin
Turin, Italy

Nikolai Attard, DDS, MS, PhD
Assistant Dean
Faculty of Dentistry
University of Malta

Correspondence to:
Dr P.M. Fiorentino
520 Elmwood Street
Eastman Dental Center
University of Rochester
Rochester, NY 14620
Email: paolo05@yahoo.com

Temporomandibular disorders (TMD) is a term reflecting chronic, painful, craniofacial conditions usually of unclear etiology with impaired jaw function. Human immunodeficiency virus (HIV)-infected patients often report chronic pain and pathologies targeting body joints during retroviral therapy. Although both conditions may share similar secondary disorders, no conclusive cause-effect relationship has been found linking the TMD to the HIV-antiviral treatment. This report describes a case of TMD associated with HIV infection during active retroviral therapy. Clinicians should be aware that treatment of an HIV-infected patient with TMD requires an interdisciplinary team approach.
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Temporomandibular disorders (TMD) is a term reflecting clinical conditions usually of unclear etiology encompassing an array of signs and symptoms related to the temporomandibular joint (TMJ) or the masticatory muscles.[1,2] Patients infected with human immunodeficiency virus (HIV) frequently complain of musculoskeletal pain such as myalgia, arthralgia, and arthritis, as well as neuropathic chronic pain.[3,4,5] In addition, the intake of protease inhibitors used to manage the HIV infection may elicit pain and joint pathology.[3,6,7]

This report describes the case of an HIV-infected adult patient complaining of TMD during active antiretroviral treatment.

Case Report

A 36-year-old HIV-positive male was referred to the Orthodontic/TMD department because of bilateral persistent pain in the TMJ region and chewing impairment lasting about 15 months. The patient reported a 2-year history of intake of protease inhibitors (lopinavir, 400mg/daily) and nucleoside reverse transcriptase (NRT) inhibitors (tenofovir, 300mg/daily) to control the HIV infection. The TMJ pain, that had started about 8 to 9 months after initiation of the HIV therapy, was very intense and reached a value of 10 on a visual analog scale (VAS) where 0 indicated "no pain" and 10 "the most severe pain possible." The use of analgesics had been

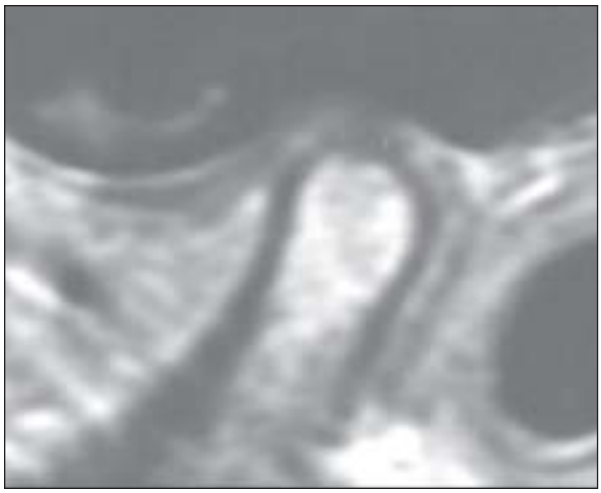

Fig 1 T1-weighted MRI of the TMJ taken with the teeth in maximum intercuspation. The sagittal cut of the TMJ shows a lack of discernible joint space between the condyle and the glenoid fossa. The disc is not clearly visible.

without significant beneficial effect. The patient wore an acrylic flat occlusal splint for 24 hours a day, made by a dentist 2 months previously, that did not improve the TMD pain. The general history was negative for craniofacial trauma, persistent pain in other body joints, and the presence of additional systemic diseases.

The clinical examination was difficult because any jaw manipulation was painful for the patient. Nevertheless, the examination revealed a restricted maximum opening of 20 mm with a deviation toward the right side and limited right and left laterotrusions of 2 mm. The TMJ areas were tender to palpation; however, the masticatory muscles were not. In addition, there was left TMJ clicking during jaw movements. There were no marked intraoral soft tissue lesions. A panoramic radiograph did not reveal pathological alterations of the condyles and glenoid fossae. The magnetic resonance imaging (MRI) taken with the teeth in maximum intercuspidation showed a lack of discernible joint space with no clearly visible disc (Fig 1).

The working diagnosis was bilateral TMD (TMJ arthralgia). Thus, the possibility of discontinuing or reducing/replacing the intake of protease inhibitors was discussed with the patient's physician (an HIV expert) since previous reports indicated that it could cause TMD.[6] However, such an option was not viable due to the need to control the virus infection load. Since previous physiotherapy and psychological therapy failed to significantly improve the patient's discomfort, he was referred to an oral surgeon for consultation to evaluate the possibility of TMJ surgery. Unfortunately, the patient moved away and was lost for further evaluation.

Discussion

This report describes a case of TMD (TMJ arthralgia) in a patient with HIV infection during an active retroviral therapy with protease and NRT inhibitors. There are four possible explanations for the presence of TMD in a HIV patient. First, the HIV infection may cause rheumatic manifestations such as aspecific myalgia, arthralgia, arthritis, tendonitis, or fibrous capsulitis with the potential for joint space reduction.[3,8,9] TMJ involvement has also been reported.[6] Second, it is known that the proteases and NRT inhibitors may cause rheumatological joint symptoms with pain, stiffness, and movement limitations.[6,9] Protease inhibitors not only crystallize in the urinary tract causing urolithiasis but protease inhibitor crystals have also been found in the joint fluid of patients with a "frozen" shoulder.[6,10,11] These crystals could trigger joint inflammation. In the report by Florence et al, the joint pain improved substantially after a medication switch; this suggests a cause-effect relationship.[6] In the case of the patient reported here, the physician would not discontinue the current retroviral therapy due to the risk of jeopardizing the control over the virus infection load. Thus, it is impossible to know whether the medication was the TMD cause. Third, the TMD could have been triggered by the change in the patient's psychosocial status, possibly leading to parafunction. Fourth, it cannot be excluded that the association was fortuitous since TMD are not rare conditions.

It should also be noted that chronic TMD and HIV infection can be accompanied by similar secondary disorders such as depressive, anxiety-related, and psychiatric disorders.[12,13,14] HIV patients may also complain of neuropathic chronic pain,[15,16] which may be associated with neuroplastic changes within the central nervous system, and central neuroplasticity may be involved in chronic TMD pain.[17] The clinician must therefore be aware that similar secondary pathological conditions may co-exist in patients with chronic TMD and HIV infection, and be careful in inferring a cause-effect relationship.

Drug replacement or reduction of the protease inhibitors intake with or without physiotherapy may improve the pain condition.[6,18] In the present case, the physician did not agree to modifying his current retroviral therapy. However, the patient moved away and no further evaluation could be done. It is not possible to ascertain which treatment should be used for such a patient. None of the previously applied therapies, ie, analgesics, physiotherapy, psychological therapy, and occlusal splint therapy was effective in this specific case. Since painful and limited joint mobility related to internal derangement or adhesive capsulitis may benefit from surgical capsular release,[19,20] the patient was sent for a surgical evaluation.

In conclusion, this clinical report describes an association, but not necessarily a cause-effect relationship, between TMD, HIV, and retroviral therapy. There is a need for more specific investigations to gain a better understanding of a possible link between HIV infection and TMD during active retroviral therapy. Prospective cohort studies could be one approach to address this possibility. However, randomized controlled trials with placebo control groups would pose a medical and ethical conflict due to the life-threatening nature of the HIV disease.

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