Knee arthritis in an HIV positive patient - not associated with antiretroviral therapy

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Human immunodeficiency virus (HIV)-associated arthritis is an oligoarthritis which predominantly affect the knees and ankles. It tends to be self-limited and to last less than six weeks. However, some patients with HIV-associated arthritis have been reported to have a disease course of more than six weeks with joint destruction. Synovial fluid cultures are typically sterile and radiographs of the affected joints are usually normal except in those rare patients with a prolonged duration of symptoms in whom joint-space narrowing can occur.[1,2] The pathophysiology of HIV specific arthritis types is not fully understood but drugs of the highly active antiretroviral therapy, in particular indinavir, are supposed to cause arthritis or rheumatological complaints.[3] However, recently both human T-lymphotropic virus (HTLV) type I and HTLV-II have been suggested to induce inflammatory or autoimmune reactions which can increase significantly the incidence of arthritis.[4] We report a patient with HIV infection presenting as knee arthritis which was apparently not associated with antiretroviral therapy.

CASE REPORT

A 32 year-old man came to the Rheumatology Policlinic of Cipto Mangunkusumo Hospital with the chief complaint of pain and swelling of the left knee since two weeks ago. He had suffered from HIV and Hepatitis C since a year ago. He also had lung tuberculosis since eight months ago and was treated with anti tuberculosis drugs, but as he was allergic to isoniazid and ethambutol, he was given a combination of rifampicine, pyrazinamide and ofloxacine. He was given antiretroviral therapy, that is, a combination of duviral (zidovudine + lamivudine) and efavirenz for two months. He had a history of drug abuse five years ago.

The examination revealed swelling, minimal tender joint, and limited range of motion of the left knee (figure 1). The right knee was normal. Cardiopulmonary and neurological examination did not find abnormality. Small macular hyperpigmentations were found on the skin and spread all over his body. This may be caused by an allergic reaction to anti tuberculosis drugs.

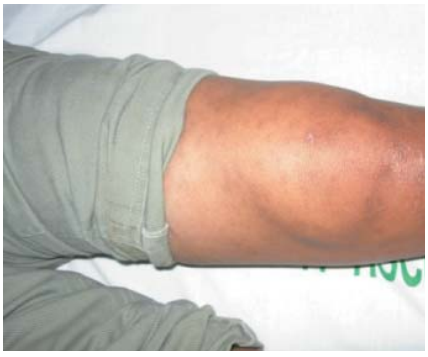

Figure 1 A 32- year old man with arthritis and effusion of the left knee

Haemogram showed haemoglobin of 15.1 gr/dl, total leucocyte count of 4800/µL), lymphocyte of 40%, thrombocyte count of 222,000/µL, ESR of 25mm/1st hr, AST of 22 U/L, ALT of 17 U/L, urea level of 6.87 mg/dl, creatinine level of (1.06 mg/dl), serum albumin level of 3.9 g/L, CRP of 3.74 mg/dl, and CD4 count of 48/mm^3. No data of knee x-ray and synovial fluid analysis were available.

Athrocentesis was performed to heal knee effusion. Culture of synovial fluid did not reveal aerobic and acid fast bacilli microorganism. The patient was treated with duviral (zidovudine 300 mg + lamivudine 150 mg) b.i.d, efavirenz 200 mg t.i.d, cotrimoxazole 480 mg two tablets daily and paracetamol 500 mg t.i.d. Anti tuberculosis drugs of rifampicin 150 mg t.i.d, pyrazynamide 500 mg t.i.d and ofloxacine 200 mg b.i.d were administered. Pain or effusion in both knees was not found a week after aspiration of knee effusion.

DISCUSSION

Human immunodeficiency virus infection is a global health problem. The clinical spectrum of diseases associated with HIV infection is wide. Prevalence of rheumatic manifestations in HIV infected patients has been reported ranging from less than 1% to more than 60% depending on the study method.[5,6] The number of CD4+ T cells as a predisposing factor for the different

musculoskeletal manifestations has not been fully elucidated. The exact incidence of manifestation of arthritis in patients with HIV remains unclear.[7] Even though musculoskeletal complications are seen throughout the course of infection, they are more common during this later stage. About 75% of HIV infected individuals will experience musculoskeletal complications during the course of the disease. The majority of musculoskeletal manifestations in HIV disease are reactive in nature, whether secondary to HIV infection itself, or reactive to opportunistic infections elsewhere.[8]

There are two proposed theories about its origin: that it is a reaction to immune complexes within the synovium and that it is a direct HIV infection of the synovial tissues. An HIV-positive assay of an affected patient's synovial fluid culture supports the theory that direct HIV infection of the synovial tissues is responsible for this condition.[9] HIV-associated arthritis has an overall male preponderance and is characterized by an acute onset of severe pain and disability, predominantly in the knees and ankles. It is self-limited, usually lasting a few weeks to 6 months. The synovial fluid commonly contains only 50 to 2600 white blood cells/μL.[9,10] There were no data of synovial fluid analysis from our patient.

Apart from these types of arthritis, it has to be taken into account that treatment with protease inhibitors, in particular indinavir, is associated with rheumatic disorders as well as other side effects such as renal calculi, nail disorders, and lipodystrophy. A multicentre survey concluded that non-specific joint pain was more often reported by patients on a treatment regimen with a protease inhibitor (indinavir, nelfinavir, ritonavir-saquinavir combination) than by patients with a non-protease inhibitor.[3]

A case of an acute monoarthritis of the left knee resulting from a 6 week course of indinavir was reported by Brooks et al.[11] As no bacterial, viral (apart from HIV infection),or fungal cause of arthritis could be demonstrated, intra-articular indinavir levels were measured. Although the intra-articular indinavir concentration of 1.36 μl/ml was within the serum range of 0.2-7.4 μg/ml, they assumed that indinavir crystals, analogous to ureate crystals, may occur in the synovial fluid because of the poor solubility of indinavir which varies inversely with pH. In our case, a protease inhibitor was not given, so that arthritis may be not associated with antiretroviral therapy.

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