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Reactive arthritis associated with L2b lymphogranuloma venereum proctitis

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Authors contributions:

K.E.K, F.M., and O.L. were in charge of the patient, and wrote the manuscript.

F.R.D, J.P.V, and M.L. were in charge of the patient, and carefully revised the manuscript.

B.de B. performed the strain serovar identification and carefully revised the manuscript.

Abstract

An ongoing outbreak of lymphogranuloma venereum (LGV) L2b proctitis, predominantly in human immunodeficiency virus (HIV)-positive men who have sex with men (MSM) has been reported in industrialized countries. We describe a case of reactive arthritis after L2b proctitis. This case expands the spectrum of severe complications related to LGV L2b proctitis. Since this infection may be asymptomatic, this organism should be screened for in HIV positive MSM with symptoms consistent with reactive arthritis.

INTRODUCTION

Chlamydia trachomatis (CT) is the etiological agent of major human infections including trachoma (classically serovars A–C), urogenital infections (serovars D–K) and lymphogranuloma venereum (LGV) (serovars L1–L3).

Since 2003, an ongoing LGV proctitis outbreak has been reported in industrialized countries, including France (mainly in Paris).[1] To date, most LGV isolates of the recent outbreak have been identified as L2b.[2] We report a case of a sexually acquired reactive arthritis (SARA) associated with a CT serovar L2b proctitis in an HIV-infected man.

CASE REPORT

A 41-year-old Caucasian homosexual man was admitted in our infectious diseases department for oligoarthritis. HIV-1 infection had been diagnosed 4 years earlier, when he presented with cutaneous secondary syphilis. Antiretroviral therapy had not yet been commenced as he had remained well.

One month after an episode of unprotected anal receptive intercourse, he presented with weight loss, fever, purulent rectal discharge, and tenesmus. Proctitis was clinically diagnosed, and he was successfully treated with oral doxycycline (100 mg twice/day). Polymerase chain reaction (PCR) for *Chlamydia trachomatis* (CT) was positive on taken blind anal sample. The LGV variant L2b was detected by genotyping (PCR-RFLP) of the *omp1* gene encoding the major outer membrane protein (MOMP) and sequencing the variable domain 2 of *omp1* gene. [3]Seven days after the diagnosis of proctitis, he presented with bilateral serous conjunctivitis. A few days later, the patient was hospitalized for investigation of oligoarthritis of the right wrist, right knee and both ankles. Physical examination revealed pain and swelling of right wrist, right knee, both ankles and left metatarso-phalangeal joints, with sausageing of second and third left toes. Laboratory tests were as follows: CD4 lymphocyte count 252/ μ L (21%),

HIV-1 viral load 6200 genome copies/mL (Log 3.8), negative serological tests for *Yersinia*, *Salmonella*, and *Campylobacter*, negative stool culture. HLA B27 testing was positive while search for rheumatoid factor, antinuclear antibodies and anti-cyclic citrullinated peptide antibodies was negative. Analysis of right knee synovial fluid revealed a raised white blood cells of 4900/mL (90% neutrophils) and negative bacterial culture. 16S rRNA gene PCR amplification and CT-specific PCR on synovial fluid were both negative. Cultures for *N. gonorrhoeae*, and *Mycoplasma* species from urethral swab were negative, as well as CT-specific PCR on first void urine sample. X-ray examinations of all involved joints revealed no abnormality.

A diagnosis of SARA complicating CT L2b proctitis was proposed. Oral doxycycline was continued for a total of 30 days (200mg/day). Oral ketoprofen (150mg/day) allowed complete clinical recovery after 2 months, and no relapse occurred after one year of follow-up.

DISCUSSION

Our patient presented with a SARA, 2 weeks after a CT serovar L2b infectious proctitis. Of note, conjunctivis was bilateral and resolved spontaneously, which argues against a direct conjunctive CT infection. Other classic features of SARA, such as balanitis, or sacro-ileitis were absent. However, our patient fulfilled the currently proposed criteria for reactive arthritis (ReA).[4]

The association of urogenital CT (serovars D-K) with SARA is well described. [5, 6] This association, and the strong temporal relationship between SARA and proctitis in our patient argues for a SARA related to CT L2b proctitis. Cases of ReA associated proctitis and CT infection have already been published, but direct evidence of CT infection was not available, co-infection with other ReA associated-microorganisms was not ruled out, and serovar was not determined.[7, 8]

Differential diagnoses, including (i) infection with other ReA triggering microorganisms and (ii) gonococcal arthritis, were ruled out with (i) serological tests, cultures of urethral swab, and (ii) 16S rRNA gene PCR on synovial fluid. ReA has been reported to occur in up to 10% patients with HIV infection. However, there is no direct correlation between ReA and HIV infection *per se*, and this association is thought to be related to the co-infections occurring in HIV-infected patients, as shown in our case.[9]

In the recent outbreak, LGV predominantly caused proctitis or proctocolitis, primarily through unprotected anal receptive or insertive intercourse,[1] a substantial proportion of patients even being asymptomatic.[10] Diagnosis is essential as prolonged treatment (3 weeks) with doxycycline or macrolides is required in LGV (CT serovar L1-3) proctitis, in contrast to infection with other serovars for which short term treatment is possible.[10]

Given the recent outbreak, CT L2b proctitis associated SARA appears to be rare, and less frequent than SARA related to other CT serovars (incidence estimated around 1-3% in CT D-K serovars).[4] Strong local immune response in proctitis could prevent dissemination of infection and subsequent ReA.[4]

In conclusion, SARA may be triggered by epidemic LGV L2b isolate responsible for proctitis in HIV-infected MSM.

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CONFLICT OF INTEREST. None

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KEY MESSAGES

1- LGV L2b, as well as other CT serovars, may trigger SARA in HLAB27-positive HIV-infected men who have sex with men.

2- Given the recent outbreak, LGV L2b infection should be systematically screened for in MSM with reactive arthritis, even though no proctitis symptoms are present.

3- This case adds reactive arthritis to the severe complications of LGV L2b proctitis, and underscores the importance of rapidly diagnose and treat this infection.

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