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Swelling of inguinal lymph nodes in a patient with HIV: a case report

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Abstract

Lymphogranuloma venereum (LGV) is a sexually transmitted infection caused by the L1, L2, and L3 serotypes of *Chlamydia trachomatis* (CT). It primarily affects regional lymph nodes. Although it is not endemic in Europe and North America, recent reports indicate an increasing prevalence among men who have sex with men, with proctocolitis as the most frequently reported symptom. We report the case of a homosexual male that presented to our department with a nodular lesion on the shaft of the penis and tender, enlarged inguinal lymph nodes. Throat, urethral, and rectal swabs were collected for CT testing using real-time polymerase chain reaction. The urethral swab was positive for CT, whereas the throat and rectal swabs were negative. Subsequent testing detected the presence of LGV DNA. The patient was treated with a prolonged course of doxycycline. After 6 weeks, the urethral swab for CT returned a negative result. The patient reported complete remission 7 weeks after the start of treatment.

Keywords: *Chlamydia trachomatis*, lymphogranuloma venereum, lymphadenopathy

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Introduction

Lymphogranuloma venereum (LGV) is caused by the L1, L2, and L3 serotypes of *Chlamydia trachomatis* (CT). These serotypes can invade and reproduce within regional lymph nodes, leading to infections that vary from asymptomatic cases to severe lymphadenopathy characterized by the formation of enlarged lymph clusters referred to as buboes and fistulas. Although the disease is endemic in several regions, including parts of Africa, South America, Southeast Asia, and India, its prevalence is on the rise in Europe and North America, particularly among men who have sex with men (MSM) (1). The majority of cases encountered at the Ljubljana University Medical Center are asymptomatic, with the second most common clinical presentation being proctocolitis. This report presents the case of a male Slovenian patient with a nodular lesion on the shaft of the penis and tender, enlarged inguinal lymph nodes.

Case report

A 50-year-old person with HIV residing in Slovenia that belongs to the MSM demographic developed a painless nodular lesion on the shaft of his penis. Initially, he sought medical advice from a general practitioner and received a prescription for local antifungal therapy with clotrimazole, which yielded no improvement. Within a 5-day period, he also developed swelling in the inguinal lymph nodes, accompanied by tenderness, chills, night sweats, and a general sense of malaise. The patient denied observing any changes on the glans of his penis, discharge, or elevated body temperature. Ten months prior to his visit to our department, he had undergone treatment for a syphilis infection.

The patient was first examined at the Ljubljana University Medical Center's Clinic for Infectious Diseases, where serology for *Treponema pallidum* (TP) was performed on the grounds of a suspected reinfection with syphilis; however, the results proved negative and, approximately 2 weeks after the onset of initial symptoms, he was referred to the Ljubljana University Medical Center's Dermatology Department for further diagnostics of other sexually transmitted infections.

Although the patient claimed to have been in a monogamous relationship for 1 year, his sexual history was doubtful. Approximately a month and a half before the patient's visit to our clinic, his partner had experienced a similar inguinal lymph node enlargement that spontaneously resolved over the course of a week, during which he experienced general malaise. A biopsy performed at the Ljubljana Institute of Oncology revealed reactive lymphadenopathy.

Upon admission to our clinic, the patient displayed a clinical presentation characterized by a slightly swollen nodular cord on the penile shaft. In addition, we observed enlarged lymph clusters measuring 5 × 5 cm in the left inguinal region and 3 × 1 cm in the right inguinal region. The overlying skin exhibited no observable pathological alterations (Fig. 1).

Serology for syphilis affirmed a previous resolved infection with a negative rapid plasma reagin assay result and a TP particle

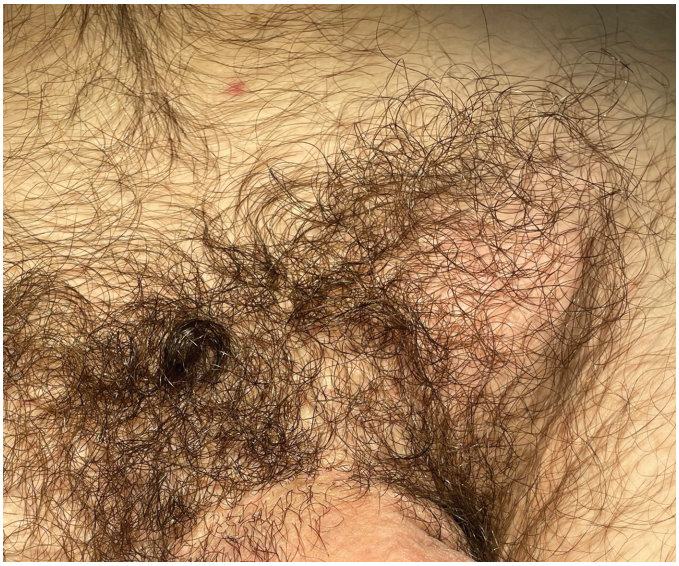

Figure 1 | Enlarged lymph node cluster in the left inguinal region.

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agglutination test titer of 1:5,120. Throat, urethral, and rectal swabs were collected for microbiology testing. Real-time polymerase chain reaction (PCR) with the Cobas 4800 CT/NG assay (Roche, Germany) was used to detect CT and *Neisseria gonorrhoeae* (NG), whereas Allplex STI Essential Assay (Seegene, South Korea) was used to detect the DNA of urogenital mycoplasmas. The throat swab was negative for both CT and NG. However, a rectal swab was negative for CT and NG but positive for *Mycoplasma genitalium* (MG). In addition, a urethral swab was negative for NG but positive for CT, MG, and *Ureaplasma urealyticum* (UU). Subsequent testing identified LGV DNA through specific LGV-PCR, with further *ompA* sequencing confirming the L2 genotype. Serological tests were carried out to screen for hepatitis B virus and C virus. The findings confirmed a prior resolved hepatitis B infection (anti-HBs 12.5 mIU/ml, anti-HBc reactive) while showing no evidence of infection with hepatitis C virus.

The patient's sexual partner underwent testing for the same sexually transmitted infections. Throat swabs revealed negative results, the urethral swab was positive only for MG, and the rectal swab tested positive for UU and CT LGV serotype.

The initial treatment approach for the patient targeted the LGV infection, involving a 21-day regimen of doxycycline at 100 mg twice daily. Subsequently, treatment for MG was initiated, with the patient receiving moxifloxacin at 400 mg for a duration of 10 days.

During the follow-up examination conducted 6 weeks after the onset of treatment, the patient reported significant improvement. Although there remained slight enlargement of the left inguinal lymph nodes, the patient reported an absence of pain. Swabs collected for CT, MG, and UU were all negative. A week later, the patient reported complete remission.

Discussion

LGV is primarily caused by CT serotypes L1, L2, or L3. Unlike the more common CT serotypes A–K, which typically result in mild or often asymptomatic infections, LGV can manifest as an invasive and severe condition, presenting as genital ulcer disease, lymphadenopathy characterized by the formation of enlarged lymph clusters known as buboes, or proctocolitis, which is the most frequent presentation in individuals with rectal exposure (1).

Reports indicate a wide spectrum of presentations for rectal LGV, ranging from severe symptoms such as mucoid or hemorrhagic rectal discharge, anal pain, constipation, and fever leading to the formation of fistulas and strictures, to asymptomatic cases or those with only tender inguinal or femoral lymphadenopathy, typically unilateral (2, 3).

In recent decades, there has been a notable increase in reports of rectal LGV and LGV-related proctocolitis, particularly among HIV-positive MSM (4, 5). The first three potential cases of LGV in Slovenia were reported between April and June 2015, followed by a confirmed case of inguinal LGV isolated from a urethral swab in August 2015, involving an MSM patient that had engaged in unprotected insertive anal intercourse with two male partners in Croatia. Clinical samples revealed the presence of variant L2c of CT (6).

In 2016, Mlakar and Ramšak reported the case of an HIV-positive MSM presenting with an anorectal abscess, discharge, lymphadenopathy, and a positive chlamydial infection test result. Initial treatment with azithromycin was ineffective, leading to suspicions of LGV. Following the commencement of doxycycline therapy, rapid improvement was observed, suggesting successful treatment of LGV. Two similar cases with atypical anorectal presentations and excellent responses to antibiotic therapy for LGV were subsequently identified at the same center. The authors argued that enhanced surveillance and testing guidelines could reveal a concealed LGV epidemic among MSM in Slovenia (7).

In contrast to anorectal LGV, few cases of urogenital LGV have been reported. A study by de Vrieze et al. diagnosed LGV in 0.06% of urethral samples and 0.9% of anorectal samples (8).

LGV-related lymphadenopathy results from the infection spreading through lymphatic drainage pathways. In approximately two-thirds of cases, lymph node enlargement is unilateral (2). Lymphangitis of the dorsal penis may also occur, resembling a string or cord-like structure (9).

According to the Centers for Disease Control and Prevention, the recommended first-line treatment involves a 21-day course of doxycycline at 100 mg twice daily, with an estimated cure rate exceeding 98.5% (10). An alternative treatment option involves the use of azithromycin, administered as 1 g once weekly for 3 weeks, as suggested in a nonrandomized study from Spain involving patients with rectal LGV, which demonstrated cure rates of 97% (11).

Conclusions

The incidence of rectal LGV in Europe has shown an upward trend since 2000. Notably, in Slovenia, reports of rectal LGV in MSM population have emerged in recent years, with cases beginning to surface around 2015. In most instances, these patients remained asymptomatic.

However, it is noteworthy that occurrences of urethral LGV infection in MSM have been exceedingly rare on a global scale. To the best of our knowledge, this is the second reported laboratory-confirmed case of such an infection in Slovenia. It is crucial to recognize that LGV-associated lymphadenopathy can exhibit invasive tendencies, potentially advancing to necrosis, suppuration, fistula formation, strictures, and sinus tracts if not promptly treated. Subsequent to infection resolution, fibrosis may develop, leading to potential lymphatic obstruction and chronic edema.

Given these considerations, physicians should exercise a high degree of vigilance when suspecting LGV cases and conduct necessary diagnostic tests, especially in patients demonstrating suspicious clinical manifestations or in individuals that have had sexual contact with LGV-infected partners.

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