Burkitt lymphoma presenting as cardiac tamponade in a patient infected with HIV: a case report

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Abstract

Febrile illness has a broad differential diagnosis, particularly among persons infected with human immunodeficiency virus (HIV). Infectious complications of immunodeficiency must always be high on this differential, but clinicians must also consider HIV-associated malignancies as an explanation for fever in this population. We present the case of a 48-year-old man with HIV initially thought to have osteomyelitis who was subsequently diagnosed with Burkitt lymphoma presenting as cardiac tamponade.

Keywords

Osteomyelitis; lymphoma; HIV; illicit drug use; cardiac tamponade; pericardial effusion.

Introduction

Febrile illness has a broad differential diagnosis, particularly among persons infected with human immunodeficiency virus (HIV). Infectious complications of immunodeficiency must always be high on this differential, but clinicians must also consider HIV-associated malignancies as an explanation for fever in this population[^1^,^2^]. We present the case of a 48-year-old man infected with HIV thought to have osteomyelitis who was subsequently diagnosed with Burkitt lymphoma presenting as cardiac tamponade.

Case history

The patient was a 48-year-old man who was diagnosed with HIV in 2000 and was on highly active antiretroviral therapy with an undetectable plasma viral load and CD4 cell count at admission of...
400 cells/mm³. He had a long history of polysubstance abuse, with complications related to intravenous use of heroin and cocaine, including remote endocarditis, right hip osteomyelitis, and hepatitis C. His past medical history included a history of chronic obstructive pulmonary disease, depression, cellulitis, and gastroesophageal reflux disease. The patient also had a 30 pack-year smoking history.

The patient was admitted to St. Paul’s Hospital in Vancouver, British Columbia, in July 2009 with a 1-month history of fever, night sweats, fatigue and weight loss of 4.5 kg. His only localizing sign was hip pain in the distribution of his past right hip osteomyelitis (treated in 1996). At presentation, he had a temperature of 36.8°C, blood pressure of 118/75 mmHg, a respiratory rate of 18 breaths/min, and a heart rate of 111 beats/min. A cardiovascular examination revealed audible first and second heart sounds with no additional sounds or murmurs. His respiratory examination was unremarkable.

At presentation his complete blood count revealed a hemoglobin of 148 g/L, a white blood cell count of 7.4 × 10⁹ cells/L, with 5.0 × 10⁹ cells/L neutrophils, 4 × 10⁹ cells/L lymphocytes and platelet count of 233 × 10⁹ cells/L. Blood cultures performed on multiple occasions after admission were persistently negative. Computed tomography scan of the right hip demonstrated bony changes consistent with past or current osteomyelitis, and a radiology-guided hip biopsy revealed necrotic tissue but without any neutrophils. In the absence of any other localizing signs, the presentation was felt to be consistent with recurrent hip osteomyelitis, and the patient was initiated on empiric broad-spectrum antibiotic therapy with intravenous vancomycin and ceftriaxone. Throughout the 18-day course of antibiotic therapy, the patient was documented to have recurrent fevers, which resulted in a change and then cessation of his antibiotic regimen. The persistence of fever despite antibiotic therapy raised obvious concern of an alternative diagnosis.

After 24 days of admission, the patient experienced an acute episode of tachycardia and subsequent hypotension, and demonstrated pulsus paradoxus of 12 mmHg on physical examination. Echocardiography demonstrated a moderate pericardial effusion, unusual epicardial deposits consistent with tumor or thrombus overlying much of the right ventricle and right atrium, and diastolic collapse of the right ventricle consistent with cardiac tamponade (Fig. 1).

**Clinical evidence and diagnosis**

A pericardiocentesis and subsequent catheter drainage of the pericardium were performed with prompt improvement in symptoms and hemodynamics. Fluid analysis showed increased white blood cells and atypical large cells consistent with high-grade B-cell lymphoma. Flow cytometry of the pericardial fluid showed CD20 positive, CD10 negative, kappa clonal B mature B cell
lymphoma. This was felt to be in keeping with Burkitt lymphoma, which was subsequently treated with chemotherapy.

**Discussion**

Burkitt lymphoma accounts for 30–40% of non-Hodgkin type lymphomas in patients who are HIV positive\[3-5\]. It often presents as extra-nodal disease, with the abdomen and pelvis frequently involved\[4\].

One previous report found pericardial effusion to be the presenting symptom of malignant lymphomas in 6 patients (some of whom were HIV positive) that presented over the course of 8 years\[6\]; none of these were cases of Burkitt lymphoma. Another report\[7\] described cardiac effusion as the first sign of a T-cell lymphoma. Two cases describe Burkitt lymphoma presenting as a pericardial effusion: one in an adult in remission from a large diffuse B-cell lymphoma\[8\] and another in a child\[9\], both of whom were immunocompetent. It appears rare to have Burkitt lymphoma present as cardiac tamponade in a patient infected with HIV.

In retrospect, the lack of inflammatory process on the bone biopsy was suggestive that acute osteomyelitis was an incorrect diagnosis. However, the lack of neutrophils in this specimen was believed to be due to inadequate sampling of the actively infected area rather than a result ruling out the diagnosis of osteomyelitis, and it is noteworthy that the consultant radiologist felt that repeat biopsy was inappropriate when no organisms were grown from the first biopsy specimen.

**Teaching point**

This case highlights the importance of maintaining a broad differential diagnosis in febrile patients infected with HIV with a presumed infectious process but who do not respond to an initial course of antibiotic therapy.

**References**