

## Spinal Burkitt lymphoma as an uncommon first manifestation of AIDS: A case report

Maryam Ansari Chaharsoughi<sup>\*1</sup>, Farzin Khorvash<sup>2</sup>, Mohammad Reza Yazdani<sup>1</sup>

<sup>1</sup> Department of Infectious Disease, Alzahra Hospital, Isfahan University of Medical Sciences, Isfahan, Iran

<sup>2</sup> Infectious Diseases and Tropical Medicine Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

**Corresponding author and reprints:** Maryam Ansari Chaharsoughi. Department of Infectious Disease, Alzahra Hospital, Isfahan University of Medical Sciences, Isfahan, Iran.

**Email:** m4ansari@yahoo.com

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### Abstract

**Background:** Patients struggling with AIDS are significantly at higher risk of developing lymphoma. Lymphoma usually occurs in uncommon extra-nodal sites in immune deficient patients. In current study, we have aimed to introduce a case with spinal Burkitt lymphoma (BL) as the first manifestation of HIV.

**Presentation of case:** A 36-year-old drug addicted, the married male was free of drug abuse since 10 years ago, referred to Al-Zahra Hospital with a complaint of back pain that radiated to lower limb. Lower limb force was 4.5. He did not have any sensory deficiency. Intervertebral disk protrusion at the L5-S1 level and paravertebral abscess at T10-T11 levels were found in MRI. The symptoms were not relieved by usual painkillers. The patient was ill at admission and he had nausea and also oral candidiasis. Due to the history of IV-drug using, HIV tests were sent for him and viral load was 52107 copies/ml and genotype indicated infection of HIV-1. Number of CD4 cells was checked as well. The number equaled 24. After necessary consultants, he underwent decompressive laminectomy and fixation and sample biopsy in order of infection/neoplasm ruling-out was sent. Results of biopsy showed histological and immunohistochemical findings in favor of Burkitt lymphoma.

**Conclusion:** BL can be the first manifestation of HIV, as a result, uncommon site of BL can act as a clue to the early diagnosis of HIV/AIDS.

**Keywords:** Acquired Immunodeficiency Syndrome; Burkitt lymphoma; HIV

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### Introduction

Patients struggling with acquired immune deficiency syndrome (AIDS) are significantly at higher risk of developing lymphoma (1). AIDS-associated lymphomas are well-known with high aggression, poor prognosis and extra-nodal location. Extra-nodal lymphoma involvement accounts for about 3% of HIV affected patients (1).

Burkitt lymphoma (BL) is the second prevalent non-Hodgkin's lymphoma

(NHL) of HIV affected patients. All tumors with a diagnosis of BL regardless of underlying disease have similar immunohistochemical, morphological and genetic characteristics (2). This B-cell lymphoma is severely aggressive in immune deficient patients and mostly located in abdomen, head and neck (3).

In current study we aimed to introduce a case with spinal BL as the first manifestation of HIV.

**Case presentation**

center affiliated to Isfahan University of Medical Sciences).

He used to be an intravenous drug user that quitted drug abuse since 10 years ago. The patient was complaining from a low back and lower limb muscular pain at the first presentation of disease. Thus he underwent muscle cramp therapy for a month. Thereafter his pain deteriorated and also started to radiate to lower limbs. Next diagnosis was vertebral disk protrusion, but disk herniation was not documented using spine magnetic resonance imaging (MRI) and the patient was recommended to have complete bed rest for 3 months. In this duration, not only he was not healed but also the back pain worsened. At the end of this three months, the patient was complaining of nocturnal fever and also nocturnal dyspnea. At the time of admission, the patient was oriented but ill. His oral temperature was 38. A Tattoo was seen on the left shoulder. He had white lesions on both lateral sides of the tongue that could be indicated as candidacies. Heart, lung and abdominal examinations were normal. Organomegaly was not detected. Examination of limb forces was 5/5 in upper limbs and 4/5 in lower ones. He did not have a sensory level and even numbness in limbs. Other examinations were normal and no other signs/symptoms were found. Thus the patient was referred to Al-Zahra Hospital to a neurosurgeon and underwent spine MRI.

Intervertebral disk protrusion at L5-S1 level and paravertebral abscess at T10-T11 levels were found in MRI. Regarding these findings, doctors had been suspected to spinal tuberculosis. Laboratory findings at the time of admission are illustrated in Table 1.

The Mantoux test was negative and three sputum smears which were sent for TB detection was negative as well. Computed tomography (CT) of the chest was sent as well and no hilar or mediastinal

A 36-year-old married male, born in Khorram-Shahr, living in Najaf-Abad referred to Al-Zahra Hospital (Sub special lymphadenopathy was detected. Also, a CT guided biopsy was taken and TB-PCR was sent. There was not any finding of TB.

Blood culture ( $\times 3$ ) after five days and urine culture after 48 hours were negative.

HIV viral load and genotyping were done by PCR. The viral load was 52107 copies/ml and genotype indicated infection of HIV-1. Number of CD4 cells was checked as well. The number equaled 24.

A peripheral blood smear was taken and he had hypochromic anemia plus anisopoikilocytosis mostly elliptocytosis and teardrop RBCs.

Table 1. Laboratory findings at admission

Lab data	Finding
WBC ( $\times 10^9/L$ )	5000
Neutrophil ( $\times 10^9/L$ )	77.5%
Lymphocyte ( $\times 10^9/L$ )	18.8%
Hemoglobin (g/L)	11.4
Platelet ( $\times 10^9/L$ )	244000
CRP (mg/L)	99
ESR (mm/h)	76
Blood sugar (mg/dL)	118
BUN (mg/dL)	16
Creatinine (mg/dL)	0.9
Na (mg/dL)	139
K (mg/dL)	4.4
Ca (mg/dL)	8.4
Mg(mg/dL)	2
Total bilirubin (U/L)	0.5
Direct bilirubin (U/L)	0.2
Fe ( $\mu g /dl$ )	30
TIBC ( $\mu g /dl$ )	220
Retic count	0.6
Pb level( $\mu g /l$ )	35.6
Liver function test	Normal
Urine analysis	Normal
HIV 1 and 2	Reactive
HCV antibody	Reactive
HBs antigen	Negative
Brucella antibody (IgG)	Negative
Brucella antibody (IgM)	Negative
Toxoplasma antibody (IgG)	Negative
2-Mercaptoethanol	Negative
Coombs wright	Negative

VDRL

Negative

Based on number of CD4 positive cells and also HIV copies, the patient took antituberculosis regimen consisted of isoniazid, rifampin, ethambutol, and pyrazinamide.

Due to high suspicious of TB, empiric therapy of TB was administrated (5mg/kg isoniazid, 10mg/kg rifampin, 15mg/kg ethambutol, 20 mg/kg pyrazinamide). Due to aforementioned clinical findings, the patient was a candidate of laminectomy. Neurosurgeons recommended thoracic and lumbosacral multi-detector computed scanning (MDCT) and also cardiologist consultant for operation acceptance.

The patient gave us informed consent for all examinations and procedures and treatments.

In echocardiography, a lesion attached to septum with higher mobility of right side was found. As cardiologists were suspicious of myxedema, transesophageal echocardiography was performed. According to transesophageal echocardiography indicated old wedge or clot that did not need any special intervention.

The next assessment for this patient was thoracic and lumbosacral MDCT. Report of MDCT was as following; vertebral bodies, pedicles and laminates were normal with no lytic or blastic lesion/ no spondylolysis or spondylolisthesis was present. But on the MRI, the abscess was clearly seen. Based on the MRI report, the patient was suggested to undergo decompressive laminectomy, fixation and sample biopsy in to rule out infection or neoplasm.

The patient was admitted to the operation room and underwent the above-mentioned procedure. After the operation, they reported epidural mass and sent a biopsy sample for pathology. The patient also had surgery complications including periumbilical sensory level, lower limb force of 0/5 and urinary incontinence.

Pathological findings of spinal mass are illustrated in Table 2.

### Discussion

There are some studies in which it is indicated that BL can be the first manifestation of HIV. They have presented that BL can occur at high levels of CD4 positive cells, thus the patient may not have any particular signs/symptoms leading to a diagnosis of HIV (4, 5). Although the number of CD4 positive cells was few in our patient but the long interval between last intra-venous drug abuse and presentation of BL in this patient is in accordance with previous studies.

Iran as a developing country has a high rate of concurrent diagnosis of HIV and lymphoma while this rate is significantly lower in developed countries (50% in comparison to 10%) (4). This high rate indicates better HIV screening of developed countries and is also a concern because this late diagnosis can be harmful for sexual partners of patients.

Another considerable finding of the current study was the source of the tumor, as in addition to being located extra-nodal, it was not located in common regions such as abdomen, head or neck (2, 3).

BL can be the first manifestation of HIV that uncommon site of it can act as a clue to the early diagnosis of HIV/AIDS.

### *Conflict of interest*

Authors declare no conflict of interests.

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Table 2. Pathological findings of spinal mass

Pathological assessment	Result
LCA	Positive
CD10	Positive
Vimentin	Negative
CD99	Negative
CD3	Negative in tumoral cells
Diagnosis	Medullary mass specimen, histological and immunohistochemical findings are in favor of Burkitt lymphoma