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Case Report

Aggressive plasmablastic lymphoma of the thoracic spine presenting as acute spinal cord compression in a case of asymptomatic undiagnosed human immunodeficiency virus infection

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Abstract

BACKGROUND CONTEXT: Plasmablastic lymphoma (PBL) is a rare aggressive variant of diffuse large B-cell lymphoma.

PURPOSE: We describe a rare case of an aggressive PBL presenting as acute spinal cord compression requiring thoracic decompression and fusion, in a case of previously undiagnosed human immunodeficiency virus (HIV) infection.

STUDY DESIGN: A case report.

PATIENT SAMPLE: A patient with PBL of the thoracic spine.

OUTCOME MEASURES: Preoperative magnetic resonance imaging, pathologic findings from the operative specimen, and serum HIV testing confirmed the diagnosis.

METHODS: We present the case of a 33-year-old Caucasian woman with a 10-day history of thoracic back pain and a 1-day history of sudden-onset bilateral lower limb weakness and paresthesia from below the level of the umbilicus (American Spinal Injury Association [ASIA] Grade C). Magnetic resonance imaging demonstrated an extradural mass extending from T3 to T6 within the left posterior canal, resulting in significant cord compression. A complete debulking of the tumor mass and an instrumented posterior thoracic fusion was performed.

RESULTS: Histopathologic examination of the specimen revealed tumor cells of PBL, and subsequent HIV testing was positive. She was treated with intravenous and intrathecal chemotherapy to prevent recurrence. Her lower limb neurologic status improved to ASIA Grade D over the subsequent 2 weeks.

CONCLUSIONS: We report the case of an aggressive PBL presenting as acute spinal cord compression requiring urgent surgical intervention, on a background of undiagnosed HIV infection.

Keywords: Spinal cord; Spinal cord compression; Human immunodeficiency virus (HIV); Acquired immunodeficiency syndrome (AIDS); Non-Hodgkin lymphoma (NHL); Plasmablastic lymphoma (PBL)

Introduction

Human immunodeficiency virus (HIV)–associated lymphoma is one of the most common and frequently fatal AIDS-defining illnesses [1]. Plasmablastic lymphoma (PBL) accounts for approximately 2.6% of all AIDS-related lymphomas. Because of its rarity, the exact incidence is unknown. The incidence of HIV in Ireland is 7 per 100,000 population. Approximately 320 new cases are diagnosed each year, predominantly (73%) in men. Approximately a third of new cases are acquired through heterosexual contact. The number of people living with undiagnosed HIV in Ireland is unknown [2]. Human immunodeficiency virus presents in many different ways, most commonly with fever, lymphadenopathy, pharyngitis, rash, myalgia, and headache. A first presentation of HIV with spinal cord compression is extremely rare.

FDA device/drug status: Not applicable.

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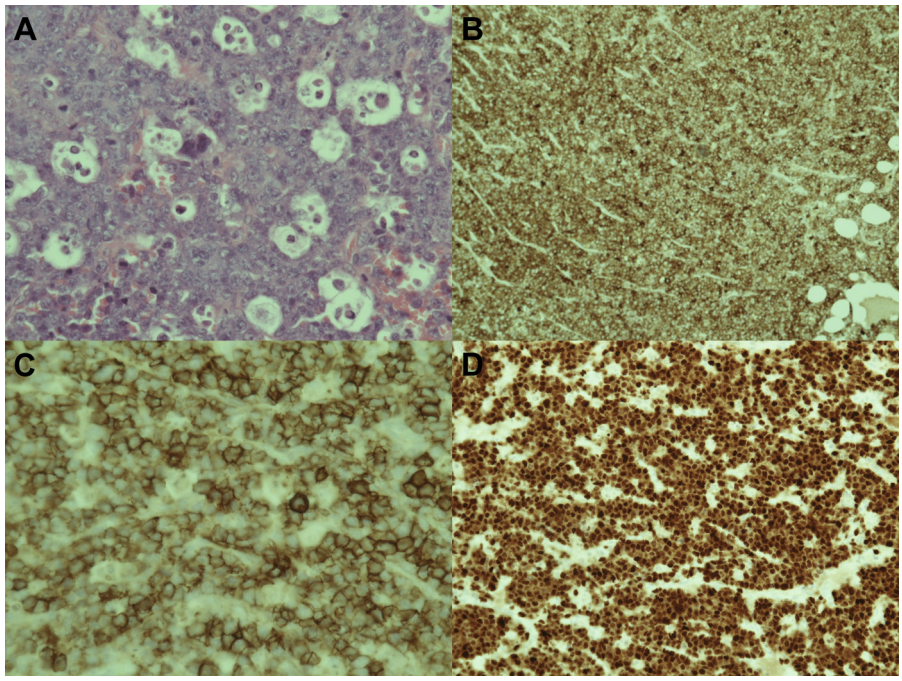

Figure. Histologic image with (A) Hematoxylin and Eosin, (B) CD 45, (C) CD 138, and (D) MUM1 oncogene staining.

Case report

A 33-year-old Caucasian woman presented to the emergency department with a 1-day history of sudden-onset bilateral lower limb weakness and paresthesia from below the level of the umbilicus. The patient reported a 10-day history of thoracic back pain after a minor lifting injury and a 3-day history of constipation and increasing difficulty passing urine. There was no significant medical history, except a nonspecific viral infection 6 years previously, which resolved spontaneously. On examination, she had incomplete lower limb paraplegia (American Spinal Injury Association, Grade C) with reduced sensation from T7 level. She had cervical lymphadenopathy, but otherwise, her examination was normal. Hemoglobin was 8.6 g/dL. Total white cell counts and platelet count were normal, but white cell differential revealed mild lymphopenia. Liver and renal function, erythrocyte sedimentation rate, and chest radiograph were normal. Magnetic resonance imaging demonstrated an extradural mass extending from T3 to T6 within the left posterior canal, resulting in significant cord compression. This mass extended through the exit foramina at the T4 and T5 levels with a small enhancing paraspinal component. Subsequent computed tomography scanning revealed mild cervical and axillary adenopathy.

In brief, the patient was placed in the prone position under general anesthesia. A vertical midline incision was used to expose the laminae of T3–T8 bilaterally. Bilateral laminectomies were performed from T3 to T8, followed by a complete debulking of the involved tumor mass. An instrumented posterior thoracic fusion was performed using pedicle screws and two contoured titanium rods. Fluoroscopic images were obtained intraoperatively to confirm the levels involved before laminectomy and to assess the final position of instrumentation. Finally, the wound was closed in standard fashion.

Histologic examination of the operative specimen demonstrated tumor cells of PBL with large, eccentrically placed nuclei and abundant basophilic cytoplasm, which was CD45 negative and CD138 and MUM1 oncogene positive (Figure, A–D). A diagnosis of high-grade aggressive PBL was made on the basis of these histologic features. Subsequently, the patient was tested for HIV and found to be positive. Her CD4+ count was 137, indicating advanced immunosuppression or AIDS. Her viral load was 17,800.

She was treated with cyclophosphamide, vincristine, doxorubicin and dexamethasone (hyper-CVAD) chemotherapy regime containing methotrexate, cytarabine, calcium leucovorin, and G-CSF as well as intrathecal chemotherapy with methotrexate and cytarabine to prevent recurrence. Darunavir, ritonavir, famciclovir, and abacavir/lamivudine were commenced to manage her retroviral infection. Her lower limb power and sensation improved to American Spinal Injury Association Grade D over the subsequent 2 weeks, and restaging computer tomographic scan showed resolution of both cervical and axillary adenopathies as well as the T5 mass.

Discussion

Plasmablastic lymphoma is a rare aggressive variant of diffuse large B-cell lymphoma, the most common subtype of non-Hodgkin lymphoma (NHL). Plasmablastic