Mental Neuropathy in Patients with AIDS-Associated Malignant Lymphoma

Cranial neuropathy associated with a malignancy is unusual, but when this condition is present, most reported cases have involved patients with lymphoma [1]. Williams et al. [2] described an incidence of ~1.2% for isolated cranial nerve involvement in their review of 5,778 cases of lymphoma and leukemia. Therefore, the incidence of neuropathic involvement of one cranial nerve subdivision, the mental nerve, should be uncommon. Despite its rarity, involvement of the mental nerve can be of clinical importance. Nobler [1] described eight cases of mental nerve palsy in patients with malignant lymphoma, which he found was a hallmark of rapidly progressive, fatal disease.

The incidence of malignant lymphoma related to HIV infection is increasing [3]. We describe two cases of HIV-associated lymphoma and mental neuropathy, a complication that has been described only once before [4].

Case 1. A 27-year-old female presented to the emergency department with a 1-month history of a left neck mass and a 2-day history of horizontal diplopia, paresthesias, and bilateral numbness of the chin and lower lip. She was found to have a right sixth cranial nerve palsy and bilateral mental neuropathy. MRI of the head showed an enhanced soft-tissue thickening of the falx (figure 1). CT of the neck showed extensive bilateral cervical adenopathy (figure 2). Serological testing showed the presence of antibodies to HIV and Epstein-Barr virus (EBV), and examination of lymph node biopsy specimens confirmed the diagnosis of AIDS-related lymphoma (small noncleaved cell type B).

Treatment with methotrexate, bleomycin, doxorubicin, cyclophosphamide, vincristine, and dexamethasone (m-BACOD) and with intrathecal cytosine arabinoside resulted in resolution of her mental neuropathy; however, her highly aggressive disease relapsed, and she died 2.5 months after initial presentation.

Case 2. A 45-year-old male with a distant history of transverse myelitis and mononucleosis antibodies to EBV and was found to be positive for HIV in May 1987 and was treated with zidovudine monotherapy. In August 1994, he developed chills and fever, and examination of a biopsy specimen from a rapidly enlarging axillary lymph node revealed B cell–type, immunoblastic lymphoma. One month after therapy with cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP) was initiated, he returned to the hospital with bilateral mental neuropathy, with numbness over the chin and anterior jaw, which spontaneously resolved in 2 weeks. Three months after it had initially regressed, the tumor recurred...
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In 1989, the Centers for Disease Control and Prevention (CDC) published guidelines recommending that all HIV-infected adults with CNS involvement. The patient then developed compression of the spinal cord and right central facial nerve palsy secondary to a relapse of his lymphoma in the CNS. He died 1 month later.

The sensory root of the trigeminal (fifth cranial) nerve has three major branches, one of which (the mandibular nerve) further divides into three branches. The mental nerve is one of the mandibular nerve's terminal branches; it emerges from the mental foramen of the mandible and supplies sensation to the skin of the lower lip and chin. Mental neuropathy is primarily perceived as numbness and/or paresthesias of the skin of the chin and lower lip and the mucous membrane of the buccal surface of the lower lip.

Various mechanisms (both central and peripheral) have been described to explain how lymphoma can involve the mental nerve. When the mechanism is central, multiple cranial nerve involvement can occur, and CT or MRI often reveals abnormalities in the corresponding area of the brain or meninges. When the mechanism is peripheral, potential causes include local pressure on the nerve in soft tissues or in the mental nerve foramen of the mandible induced by enlarged lymph nodes or the tumor; lymphomatous infiltration of the nerve or perineurial tissue; or a paraneoplastic phenomenon in the absence of gross or radiological evidence of pathology [5]. The findings in the cases described herein and in previous reports in the literature [1] do not uniformly conform to any one of the described mechanisms.

Malignant lymphoma is an increasingly common complication and an AIDS-defining illness in patients with HIV infection. These malignancies tend to be highly aggressive, B cell non-Hodgkin's lymphoma of intermediate-grade or high-grade types [6, 7]. Both of our patients had AIDS-associated lymphoma, mental neuropathy, CNS involvement, and a rapidly progressive fatal course.

Clinicians should be aware that the seemingly trivial symptom of lower lip and chin numbness due to mental nerve dysfunction often heralds the development of non-Hodgkin's lymphoma with a very poor prognosis in HIV-infected patients.

References


Figure 2. CT scan of the neck of the patient in figure 1 shows extensive bilateral cervical adenopathy (arrows).