

Burkitt's lymphoma presenting with vestibulo-cochlear nerve involvement

Case Report

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Abbreviations: central nervous system, (CNS); magnetic resonance imaging, (MRI); white blood cells (WBC)

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Summary

Most patients with Burkitt's lymphoma present with peripheral lymphadenopathy or an intra-abdominal mass. The disease is rapidly progressive and has a propensity to metastasize to the central nervous system (CNS). In this article, we report a case of Burkitt's lymphoma that presented with focal deficit involving the eighth cranial nerve. To our knowledge, this is the first case of eighth cranial nerve involvement as the presenting sign of Burkitt's lymphoma.

I. Case report

A 67-year-old male HIV (human immunodeficiency virus) negative ex-smoker patient was admitted with chief complaint of vertigo, uncontrolled blood pressure, dyspnea, and bilateral decreased hearing of few days duration. His past medical history included diabetes mellitus (type II), hypertension, and ischemic heart disease. His daily medication profile included: doxazocin 2 mg, losartan 50 mg, lansoprazole 30 mg, ticlopidine 250 mg, and chlorpropamide 125 mg combined with fenformin 30 mg.

The physical exam was significant for elevated blood pressure (190/100 mmHg), slurred and slow speech and bilateral markedly decreased hearing. There was no lymphadenopathy , hepatosplenomegaly , or neck stiffness. Laboratory studies showed thrombocytopenia (95,000/mm³;normal 150,000-400,000/mm³), elevated (white blood cells) WBC (13,750/ mm³ ;normal 5,000-10,000/ mm³), abnormal peripheral smear (nucleated red blood cells, metamyelocytes), hyperuricemia (16 mg/dl, normal levels 2.4-7.5 mg/dl), increased lactate dehydrogenase (9,430 U/L; normal levels 50-240 U/L) , and elevated serum creatinine (1.9 mg/dl; normal levels 0.8-1.2 mg/dl). CT-scan (computed tomography) and MRI (magnetic resonance imaging) of the brain, chest x-ray and ultrasound of abdomen were all normal. Echocardiography demonstrated mitral and aortic regurgitation along with

apical dyskinesia with a left ventricular ejection fraction of 38%.

Two days after admission, the patient's blood pressure was controlled. However, his hearing deteriorated dramatically and he became totally deaf. Also, his platelet count decreased precipitously to 11,000/mm³. Medical investigation was directed to explain the rapidly progressive changes in clinical and laboratory findings. Initially, drug induced hearing damage was suspected, but none of his medications was found to cause hearing loss. The laboratory findings of low platelet count, increased LDH and abnormal peripheral smear triggered his physician to recommend bone marrow aspirate and biopsy to rule out a malignant process. Biopsy showed diffuse infiltration of marrow spaces by monomorphous cell population with one or two conspicuous nucleoli and deeply basophilic cytoplasm with abundant vacuolization; mitosis was frequent. Morphology and immunohistochemical staining were consistent with Burkitt's lymphoma. The diagnosis of Burkitt's lymphoma with CNS (particularly vestibulo-cochlear cranial nerve) involvement was suspected. However, no lumbar puncture was done since the patient had severe thrombocytopenia and could develop epidural hemorrhage. The patient was provided with supportive care and flew back home for further management of his malignant hematologic disorder. Two weeks later the patient passed away, after receiving an unknown chemotherapy.

II. Discussion

In 1958, Burkitt described a mandibular malignancy in African children that later proved to be non-cleaved B cell lymphoma (Magrath, 1990). The increasing frequency of AIDS and immunosuppressive therapy has led to increase incidence of nonendemic Burkitt's lymphoma (Ziemler et al, 1982). In such cases, extranodal involvement with ultimate CNS involvement is common (Bomfim da paz and Kolmel, 1992).

Literature review showed that many cases of Burkitt's lymphoma with optic nerve involvement were reported. In such cases, diplopia was found to be the initial manifestation (Grassi and Lee, 2002). In some cases, patients presented with multiple cranial nerve palsies (Pal et al, 1995). Bone marrow involvement, initial CNS manifestation and older age at diagnosis all speak for a poor prognosis (Michael et al, 1990). All these factors were present in our patient. Our case illustrates that abrupt change in cranial nerve function and other neurologic findings indicate the need for vigorous investigation.

To our knowledge, this is the first case of Burkitt's lymphoma to be reported with suspected eighth cranial nerve involvement. The early diagnosis of Burkitt's lymphoma is crucial since it is the most rapidly progressive human tumor and any delay in initiating therapy can adversely affect the patient's outcome.

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