

Abducens Nerve Palsy in a Patient with Multiple Myeloma: A Case Report

Multipl Miyelomlu Bir Hastada Altıncı Sinir Parezisi: Bir Olgu Sunumu

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ÖZET

Multipl miyelomun komplikasyonlarından birisi santral sinir sistemi tutulumudur. İntrakraniyal plazmasitomalar nadirdir ve hemen her zaman kafadaki miyelomatöz lezyonlar veya klivus ve kafa kaidesini tutan plazmasitomalardan kaynaklanır. Bu makalede 55 yaşında, baş ağrısı ve çift görme ile başvuran ve klivus komşuluğunda kafa kaidesinde kitle lezyonu saptanan erkek bir hasta multipl miyelomun nadir bir belirtisi olarak sunulmaktadır.

Anahtar Kelimeler: Multipl miyelom, diplopi, plazmasitoma.

ABSTRACT

Abducens Nerve Palsy in a Patient with Multiple Myeloma: A Case Report

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One of the complications of multiple myeloma (MM) is central nervous system (CNS) involvement. Intracranial plasmacytomas are rare and almost always originate from myelomatous lesions of the skull or plasmacytomas involving the clivus or base of the skull. In this study, a 55-year-old male MM patient with headache and diplopia due to skull base mass lesion near the clivus is presented as a rare presentation of MM.

Key Words: Multiple myeloma, diplopia, plasmacytoma.

INTRODUCTION

Multiple myeloma (MM) is determined by the neoplastic proliferation of a single clone of plasma cells that produce a monoclonal immunoglobulin (1). This malignancy accounts for about 1% of all malignant diseases and somewhat more than 10% of hematologic malignancies, and is seen among all races and in all geographic regions (2,3). It is slightly more frequent in men than in women (4).

One of the complications of this disease is central nervous system (CNS) involvement. Intracranial plasmacytomas are rare and almost always originate from myelomatous lesions of the skull or plasmacytomas involving the clivus or base of the skull. Leptomeningeal myelomatosis alongside abnormal cerebrospinal fluid findings is infrequent but is being recognized more frequently, especially in advanced stages of the disease (5-9). This type of the malignancy has a poor prognosis, with a survival of a few months (10).

In this study, a 55-year-old male MM patient with headache and diplopia due to skull base mass lesion near the clivus is presented as a rare presentation of MM.

CASE

A 55-year-old right-handed man was admitted to Alzahra Hospital, Isfahan University of Medical Sciences, Isfahan, Iran on 7 October 2010 with the chief complaints of diplopia and headache (the headache was mild, compressive, generalized, non-pulsatile, and sensed especially in the frontal area without nausea, vomiting or photophobia). He had complained of low back pain and bone pain for five months and weight loss for the past three months before admission. The patient was a heavy smoker and had smoked cigarettes for about 20 years. He had no positive family history.

On admission, the physical examination revealed normal vital signs and no lymphadenopathy or palpable mass in his abdomen. No abnormality was found in the EKG or echocardiography. Bilateral fundoscopic examination revealed no abnormalities.

His mental status was normal. In the neurological examination, the findings included signs of sixth nerve palsy on the left, hypoesthesia on the right side of the face and body, and mild right hand weakness (Figure 1).

Other neurological examinations were normal.

Fluid-attenuated inversion recovery (FLAIR) and T2-weighted magnetic resonance (MR) imagings revealed a hyperintense tumor-like lesion at the base of his skull, and in the skull X-ray, multiple punched out lesions were seen (Figure 2,3).



Figure 1. Sixth nerve palsy in the patient's left eye.

Laboratory data revealed an erythrocyte sedimentation rate of 88 mm/hr (normal: < 20). The biochemistry tests results were: BUN (blood urea nitrogen): 33 mg/dL, Cr (creatinine): 2.3 mg/dL, total CPK (creatinine phosphokinase): 123 mg/dL, LDH (lactate dehydrogenase): 731, and ALP (alkaline phosphatase): 316. Calcium was 11.2 mg/dL (normal: 8.6-10.6), phosphorus: 4.6, urine Cr (collected in 24 hours): 840, urine protein: 3664, and urine volume in 24 hours: 1600 cc.

The total serum protein concentration was 8 g/dL (normal: 6.0-8.0), and albumin was 4.5 g/dL (normal: 3.5-5.5). Serum protein electrophoresis showed normal results. Other test results were normal.

Osteolytic areas in several bones were detected. Roentgenograms revealed multiple lytic lesions of the skull and right and left ribs. In abdominal sonography, there were two cystic lesions in the anterior and posterior parts of the right lobe of the liver. The bone marrow biopsy showed increased cellularity (> 30%), and more than 30% of these cells were plasmocytes (Figure 4).



Figure 2. Lateral skull X-ray shows multiple punch out lesions.

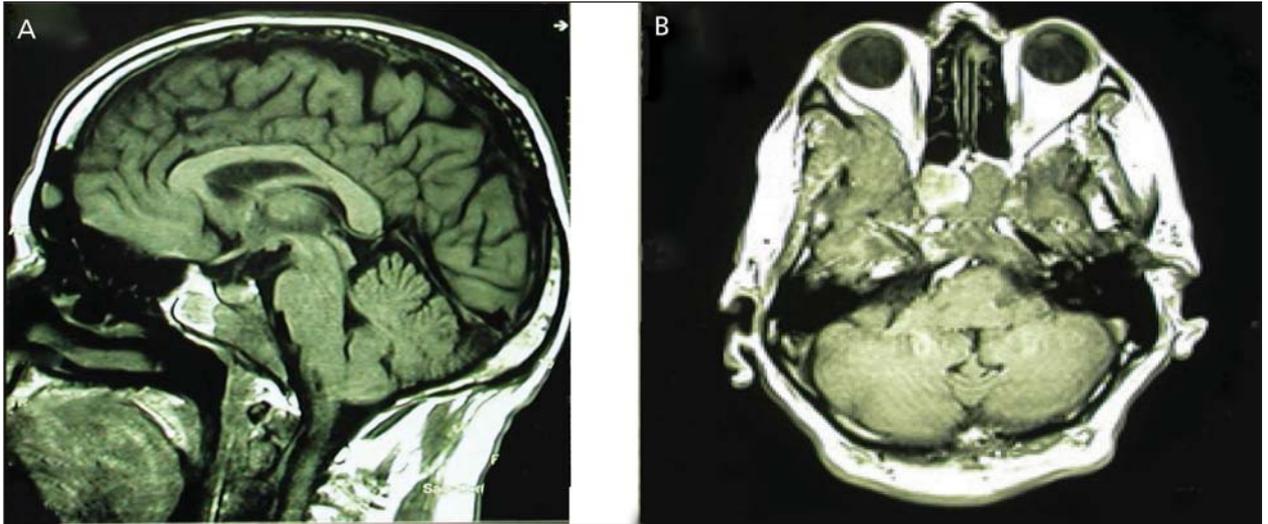


Figure 3. MRI scans show skull base and clivus tumor [sagittal (A) and axial (B) view].

The patient was admitted for about two weeks. Consultation to neurosurgery determined that the mass was nonoperable due to the large size and the high risk of resection. He was thus discharged from the hospital for follow-up with radiotherapy.

DISCUSSION

As mentioned above, MM is known as an important hematologic malignancy. Movement-induced bone pain, mainly in the back or chest and sometimes in the extremities, is present at the time of diagnosis in approximately 60% of patients (1).

On the other hand, radiculopathy, usually in the thoracic or lumbosacral area, is the most common neurologic complication of MM. It can result from compression of the nerve by a paravertebral plasmacytoma or rarely by the collapsed bone itself. Peripheral neuropathy is uncommon in MM and, when present, is usually due to amyloidosis.

The case presented in this study suffered from diplopia, which was caused by the rare intracranial plasmacy-

toma involving the base of his skull. These lesions are rare and almost always represent extensions of myelomatous lesions of the skull or plasmacytomas involving the clivus or base of the skull (5-8).

Sixth nerve palsy alongside long tract lesion (presented with hand paresis and right-side hypoesthesia) in this patient might have been due to the compressive effects of the mass or ischemic lesions of the brainstem. Some of the rare complications of MM are ischemic stroke and cerebral infarction, which result from some conditions, especially hyperviscosity, in MM (11,12). On the other hand, hypercalcemia could be a cause of the weakness in these patients (13).

Sixth nerve palsy in this patient could also have been due to amyloid infiltration or the mass effect. Peripheral nerve infiltration by amyloid can be an origin for carpal tunnel syndrome and other sensorimotor mono- and polyneuropathies in these patients (14).

In conclusion, one of the possible causes of acute diplopia in middle-aged patients could be metastatic lesions



Figure 4. X400-Bone marrow biopsy is diffusely positive for Lambda chain staining (IHC).

of the skull base. In this case, plasmacytoma of the clivus was the main cause of the disease.

CONSENT

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

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