

## Case Report

# ABDUCENS NERVE PALSY AS INITIAL CENTRAL NERVOUS SYSTEM ABNORMALITY IN NON-HODGKIN LYMPHOMA

\*Subrata Chakrabarti, Koushik Pan, Ramita Sarkar, Subrata Halder and Rajdeep Chowdhury

Department of general medicine, IPGMER, Kolkata, India

\*Author for correspondence

## ABSTRACT

Cranial nerve abnormalities including facial nerve palsy are known complications of lymphoma especially Non-Hodgkin Lymphoma (NHL). But abducens nerve palsy as sole intracranial manifestation of NHL due to meningeal involvement is a less common scenario. We present a 34-yr-old lymphoma patient who developed isolated abducens nerve palsy. Brain Magnetic Resonance Imaging (MRI) was normal. Cerebrospinal fluid (CSF) findings revealed presence of malignant lymphomatous cells. Lymph node biopsy revealed Diffuse Large B cell Lymphoma (DLBL). This case suggest that isolated abducens palsy warrants a search for malignancies like NHL as possible etiology in appropriate clinical scenario even in the presence of normal MRI.

**Keywords:** Non-Hodgkin Lymphoma, Abducens Nerve Palsy, Diffuse Large B Cell Lymphoma

## INTRODUCTION

Multiple cranial nerve palsy is common in lymphoma patients especially NHL patients. Usually it occurs with direct central nervous system (CNS) infiltration or due to meningeal deposits or paraneoplastic effects, but isolated nerve abducens palsy is relatively rare. We present here a case of isolated abducens nerve palsy complicated by meningeal deposition of non-Hodgkin's lymphoma

## CASES

A 40-year-old man presented to our hospital complaining of headache for last 20 days and horizontal diplopia which was mainly on distant gaze and increasing on left gaze with no diurnal variation or drooping of eyelids. There was no antecedent head injury, no convulsion, no altered sensorium nor any features of respiratory tract infection or rash on trunk. There was no history of acute or chronic ear discharge, no rash in or behind the ear, no associated speech or hearing impairment. There was no history of vomiting or diarrhoea. His pre-morbid state was normal except for vague weakness, occasional low grade fever for last 2 months. General physical examination revealed a fully conscious patient with axillary temperature of 38°C and blood pressure of 130/86mmHg. Lymph nodes (LN) were palpable in both axillary, cervical, inguinal regions which were firm, mobile, nontender with no fixity. Spleen was palpable 3 cm below left costal region and liver 2 cm below right costal region. Both liver and spleen were firm, nontender and mobile with no bruit or rub. Neurological examination showed left sided abducens nerve palsy. Visual acuity and field, hearing, facial sensations, ocular movements were normal and no other neurologic signs were found. There were no signs of meningeal irritation; power and tone and reflexes in all the limbs were normal. Fundoscopy revealed mild papilledema bilaterally. Examination of the ears, nose and throat showed no abnormality. Cardiovascular and respiratory systems were normal. Laboratory findings were as follows: white blood cell count- 3200/cmm; hemoglobin 7.9 mg/dl; platelet count, 90000/cmm/ $\mu$ l; Serum chemistry values including renal and liver function tests and serum electrolytes were within normal limits. But serum LDH was 1170 U/L (normal 123-345) and uric acid 9.2 mg/dl (normal 3.5-7.2 mg/dl). There were no signs of meningeal irritation; power and tone and reflexes in all the limbs were normal. Examination of the ears, nose and throat showed no abnormality. Cardiovascular and respiratory systems were normal. Brain MRI and MR angiography were normal. Brain magnetic resonance imaging (MRI) with gadolinium enhancement revealed no lesions including basal meninges and pons. Cerebrospinal fluid (CSF) pressure study revealed raised opening pressure with protein content of 243 mg/dl and glucose 24 mg/dl. CSF cytologic study showed lymphomatous cells. LN

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biopsy was done and Histopathology revealed presence of NHL. Flow cytometry confirmed presence of diffuse large B cell lymphoma (CD 3, 19, 20, 45 positivity). Bone marrow biopsy was done which also demonstrated same lymphomatous deposits. Patient was treated with R-CHOP regimen (Rituximab, Cyclophosphamide, doxorubicin, vincristine, and prednisolone). Unfortunately the patient did not respond to treatment and expired 12 days after admission.



Figure 1: Showing Left Sided Abducens Nerve Palsy

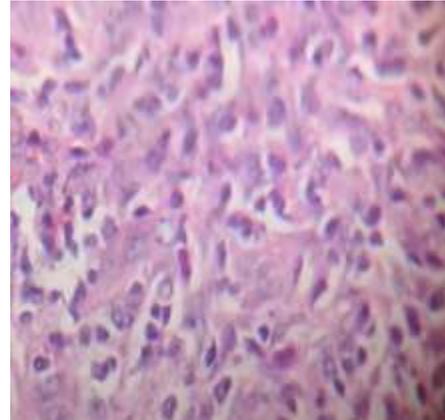


Figure 2: Showing Nhl on Lymph Node Biopsy Histopathology



Figure 3: Showing normal brain Parenchyma in MRI T2 imaging



Figure 4: Showing normal basal meninges in MRI T2 imaging

### DISCUSSION

The most common causes of abducens nerve palsy in adults include vasculopathic processes (diabetes, hypertension, atherosclerosis), increased intracranial pressure, Brain stem Glioblastoma, aneurysms, brainstem metastasis, multiple sclerosis, sarcoidosis, vasculitis, stroke, Hydrocephalus, idiopathic intracranial hypertension. In children, traumatic and neoplastic (most commonly brainstem glioma) etiologies, as well as idiopathic nature are most common. Lymphoma can cause cranial nerve palsy by various mechanisms-direct CNS infiltration, meningeal deposits or paraneoplastic manifestations. Multiple cranial nerves, particularly the sixth and seventh nerves, are commonly involved by lymphoma; however, isolated cranial neuropathy is an uncommon presentation (Mackintosh, 1982). Rubinstein et al reported several cases of isolated cranial neuropathy as the first sign of cranial metastasis, which included isolated hypoglossal and isolated trigeminal neuropathies (Rubinstein, 1969). Lymphomatous involvement of the CNS should be suspected in any patient with lymphoma when cranial nerve signs develop (Manabe *et al.*, 2000). The diagnosis is usually confirmed by MRI brain or CSF study.

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#### **Conclusion**

In a patient developing abducens nerve palsy, an intensive search to rule out underlying haematological malignancies is necessary if other clinical findings point to the same (as in this case generalised lymphadenopathy and hepatosplenomegaly), even if MRI brain is normal.

#### **REFERENCE**

- Mackintosh FR, Colby TV, Prodolsky WJ, Burke JS, Hoppe RT, Rosenfelt FP, Rosenberg SA and Kaplan HS (1982).** Central nervous system involvement in non-Hodgkin's lymphoma: an analysis of 105 cases. *Cancer* **49** 586- 95
- Manabe Y, Kurokawa K, Kashihara K and Abe K (2000).** Isolated oculomotornerve palsy in lymphoma. *Journal of Neurology Research* **22** 347-8.
- Rubinstein MK (1969).** Cranial mononeuropathy as the first sign of intracranial metastasis. *Annals of Internal Medicine* **70** 49-54.
- Vallée L, Guilbert F, Lemaitre JF and Nuyts JP (1990).** Benign paralysis of the 6th cranial nerve in children. *Annales de pédiatrie* **37**(5) 303-5