

Isolated XIITH Cranial Nerve Palsy Secondary to Diffuse Large B Cell Lymphoma – A Rare Occurrence

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Authors' contributions

This work was carried out in collaboration between both authors. Author RJ designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author MN managed the analyses of the study and the literature searches. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Isolated XIITH Cranial Nerve Palsy is an uncommon presentation. When it presents in isolation, it can be diagnostically challenging. We report a 43 year old male presenting with Unilateral Hypoglossal Nerve palsy marking the beginning of ongoing metastasis. This case report focusses on the importance of a meticulous approach towards diagnosis and finding the underlying cause.

Keywords: Hypoglossal nerve; neoplasm; mass.

1. INTRODUCTION

The Hypoglossal Nerve is the motor supply to the tongue muscles and may be damaged in its intracranial or extracranial course [1].

Hypoglossal nerve injuries can range from subtle deficits to sequelae with a significant impact on quality of life that can affect swallowing and airway functions [2]. Hypoglossal Nerve Palsy (HNP) is highly uncommon [3]. Among the

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unusual, very few cases of Isolated Hypoglossal nerve damage are reported [3]. The most frequently occurring conditions in which one hypoglossal nerve is damaged are medial medullary infarctions, penetrating neck wounds and nasopharyngeal tumors [3]. Apart from the common differentials, it is important to consider rare possibilities as assessment of clinical status and consideration of the acuity of lesions can help determine the urgency of repair [1].

2. PRESENTATION OF CASE

A 43year old male, chronic smoker, presented to the casualty with history of cough with expectoration since 2 months and Breathlessness on exertion since 2 months. He was taken to a local hospital nearby and was diagnosed with Pleural Effusion. He was admitted and managed for the same. After discharge, he developed slurred speech and deviation of tongue to the left on protrusion (Fig. 1) since one day associated with difficulty in moving food bolus inside the mouth.

General examination was unremarkable with no palpable lymphadenopathy. On Respiratory examination, decreased air entry was observed in Right infra-axillary and inframammary areas. Resonant note was heard over the chest wall. However, dull note was heard from Right 4th to 7th Intercostal spaces favouring Pleural Effusion. On Speech evaluation, patient had slurred speech although Comprehension, Repetition, Reading and Writing functions were intact. Rest neurological examination revealed no abnormal findings. On Cranial Nerve examination, 8th and 9th Cranial nerves were intact. The only abnormal finding found was deviation of tongue to the left on protrusion (12th Cranial Nerve involvement).



Fig. 1. Deviation of tongue to the left on protrusion

Initial workup revealed thrombocytopenia with no other significant findings. Chest X Ray (PA View) was suggestive of Right sided moderate Pleural effusion (Fig. 2). USG Guided Pleural tapping was done. The Pleural fluid analysis revealed no malignant cells and no evidence of Tuberculosis.

However, post tap Chest X Ray (PA View) did not illustrate complete resolution of the Pleural Effusion even though complete fluid was drained therapeutically (Fig. 3). This led to the suspicion of any mass in the chest causing compression of the Hypoglossal Nerve.



Fig. 2. Right sided pleural effusion (CXR – PA)



Fig. 3. Post tap CXR – PA

On Computed Tomography (CT) Neck and Chest (Plain & Contrast),

- 1) A solid lesion in the soft palate, left vallecula and left lateral pharyngeal wall s/o neoplastic etiology was present.

- 2) Cervical, mediastinal and abdominal lymphadenopathy (Fig. 4) was described.
- 3) An ill defined soft tissue density mildly enhancing lesion in superior and anterior mediastinum (Right > Left). Right sided mild to moderate pleural effusion with underlying collapse of Right Lower Lobe.

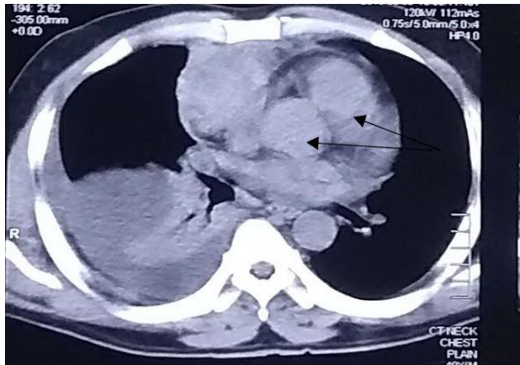


Fig. 4. Computed tomography (CT - Neck & Chest) section S/o lymphadenopathy

Since the neoplastic lesion was inconclusive and patient was unaffordable, Bone Marrow Aspiration and Biopsy was planned instead of a Fluorodeoxyglucose – Positron Emission Tomography (FDG PET) Scan. The lesion was found to be a Non – Hodgkin’s Lymphoma with immunohistochemistry suggestive of Diffuse Large B Cell Lymphoma (Fig. 5). Unfortunately, the patient did not survive as the lesion had already advanced to its final stage.

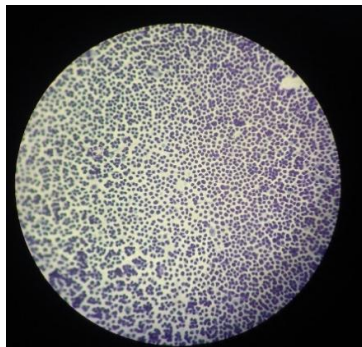


Fig. 5. Histopathology slide image s/o diffuse large B cell lymphoma

3. DISCUSSION

The Hypoglossal Nerve plays a major role in tongue movement and hence, articulation of speech. Any trauma to the nerve may cause

weakening of the tongue muscles, deviation of the tongue to the opposite/same side, slurred speech and various other neurological deficits [4]. It is important to approach a case of HNP in a segmental manner so as to localize the site of lesion [5]. The clinical cues suggesting the involvement of other associated cranial nerves can further shorten the route to diagnosis. However, Isolated HNP can be diagnostically challenging to medical experts, too.

The common causes of unilateral HNP are nasopharyngeal carcinomas, metastasis to the base of skull, carcinomatous meningitis, trauma, dolichoectasia of the vertebral artery, dissection of extracranial internal carotid artery, hypoglossal schwannoma, Epstein Barr virus infection, post vaccination cranial neuritis [6].

Mahadevappa, et al. [7] described an unusual Unilateral HNP due to vertebral artery dissection occurring outside the premedullary cistern.

Commonly reported neoplasms associated with Isolated HNP are breast, prostate and nasopharyngeal cancer [8]. Malignant causes are most common due to metastatic disease.

In the largest series of 100 hypoglossal nerve palsies, Keane JR, et al. without differentiating the truly isolated palsy, nearly half of all cases were caused by tumor, with two-thirds being caused by metastasis, chordoma, nasopharyngeal carcinoma or lymphoma [4].

A study by Emiley, et al. was the only case that reported Isolated HNP secondary to T cell Lymphoma [9]. Another case that reported HNP due to a T cell Lymphoma simultaneously involved cranial nerves III, V, VII, VIII, X, XI in a 57 year old Japanese male [10].

Isolated HNP may manifest at any time, from childhood to old age, although the great majority of reported cases manifest at 20-45 years. Some authors compare isolated and idiopathic HNP with Bell’s palsy [11].

In some cases, no cause is identified and the palsy may resolve on its own spontaneously [11].

4. CONCLUSION

Not many cases of HNP are diagnosed at the first visit to the clinic and requires further assessment. Many such cases remain undiagnosed due to reasons such as financial

constraints, delay in diagnosis and rapid deterioration in the patient's health.

To the best of our knowledge, this is the first case report in India demonstrating Isolated Hypoglossal Nerve Palsy due to Non Hodgkin's Lymphoma.

CONSENT

All authors declare that written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images.

ETHICAL APPROVAL

All authors hereby declare that the study has been examined and approved by the Institutional Ethics committee and has been performed in accordance with the ethical standards laid down by the Institutional Ethics Committee.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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