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Trigeminal Sensory Neuropathy Associated with a Solitary Pontine Lesion: A Case Report

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Abstract: ***Trigeminal neuropathies are characterised by skin and mucosal numbness in the region innervated by trigeminal nerve. Isolated trigeminal sensory neuropathy resulting from brain stem lesions has been reported rarely. We present a case of young lady with isolated trigeminal sensory neuropathy with solitary pontine lesion.***

Keywords: Isolated trigeminal sensory neuropathy, brainstem lesions

1. Introduction

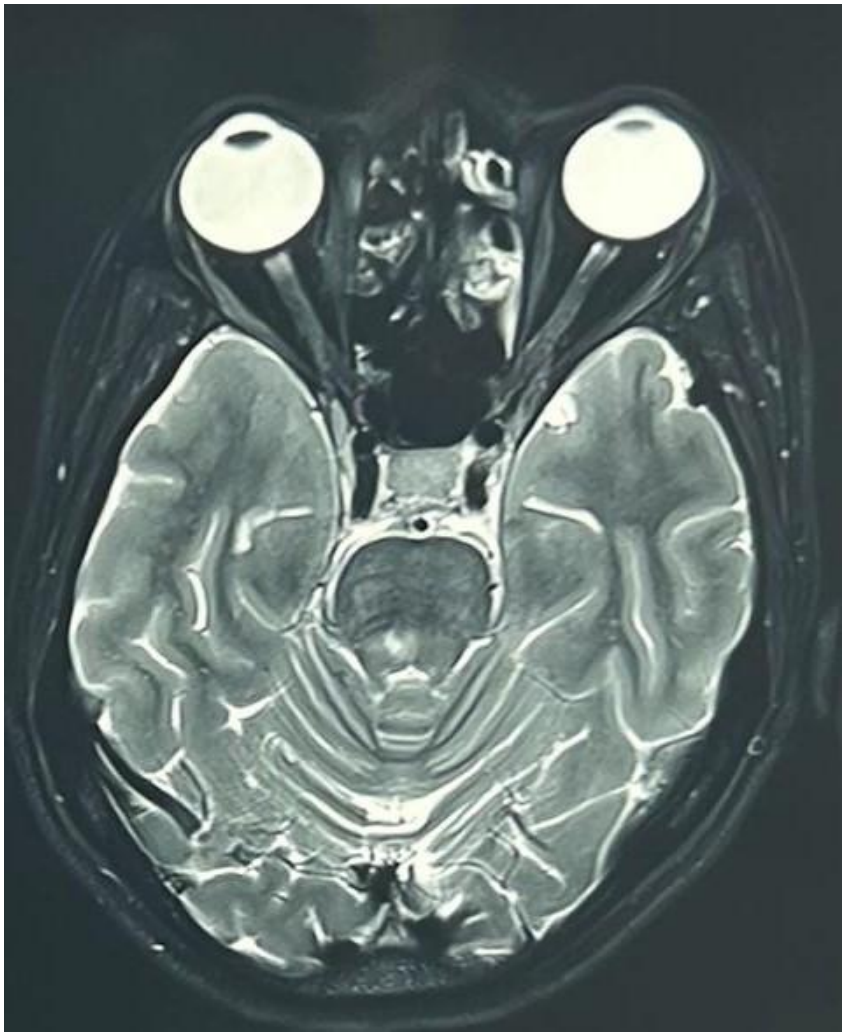
Trigeminal neuropathy refers to dysfunction in sensory or motor functions involving cranial nerve V, the trigeminal nerve.1 Trigeminal neuropathy (TNO) typically presents with numbness in the region innervated by the trigeminal nerve, sometimes associated with paraesthesia's, pain, or masticatory weakness. TNO can present from the involvement of the fifth cranial nerve (CN V) anywhere in its course, from the nuclei in the brain stem to its peripheral branches.

Isolated trigeminal sensory neuropathy is a rare entity accounting for 11.2% cases of facial numbness. This entity has two clinical subgroups. Acute idiopathic is characterised by rapid painless onset of facial numbness without other clinical features with excellent prognosis. Chronic TSN are painful progressive disorders commonly affecting 2nd and 3rd divisions of trigeminal nerve. Connective tissue disorders like scleroderma and Sjogren's syndrome (2) are the most common cause of chronic trigeminal neuropathy. However isolated sensory trigeminal neuropathy with brain stem lesions is reported rarely.

2. Case Report

A 32 - year - old female patient presented with numbness over the nose, philtrum of lip and tongue and buccal mucosa of one week duration. On examination there was decreased touch, pain and temperature in same region. Corneal reflex was normal and muscles of mastication were strong.

There was no weakness of limbs. Isolated sensory trigeminal neuropathy made us to localize the lesion to pons. Involvement of touch, pain and temperature made us to localize the lesion to spinal nucleus of trigeminal nerve. MR Imaging of brain was done. There was T1 hypointense, T2 hyperintense lesion involving rostral tegmentum of right hemi pons extending into midline with no contrast enhancement was seen Imaging features are in favour of demyelinating lesion. Further work up was done. VEP and BERA were normal. CSF oligoclonal bands were negative. antibodies to AQP4 and MOG were negative. MRI spine was normal.



T2W MRI image showing a solitary pontine lesion in the rostral tegmentum of Right Hemi Pons

3. Discussion

Facial numbness can indicate dysfunction in various parts of the trigeminal nerve pathway, including the nerve branches, ganglion, roots, sensory nucleus, and cortical areas. Trigeminal neuropathy (TN) presents diagnostic challenges due to its various potential causes, such as trauma, tumours, connective tissue disorders, vascular, infections, `demyelination, or idiopathic factors. (5). Detailed examination and comprehensive evaluation is required to establish the etiology and plan for further management of trigeminal neuropathy. History taking includes onset of numbness; acute numbness has more recovery chances compared to chronic ones. Neurological examination includes testing for corneal reflex, strength in muscles of mastication and temporalis, and sensory examination. Pattern of sensory involvement helps in localizing the lesion

Pattern of Sensory Involvement	Localiztion
Loss of sensation in individual division	Distal to gasserian ganglion
Sensory loss in ipsilateral face	Proximal to or at the level of gasserain ganglion
Onion skin distribution of sensory loss	Brain stem/upper cervical cord

Midline facial areas are represented rostrally in spinal nucleus and lateral facial sensations terminate more in caudal spinal nucleus, Dissociation of sensations on face differentiates lesions affecting spinal nucleus from main sensory nucleus.

In our patient presence of numbness in midline face areas with preserved corneal reflex and normal motor examination made us to localize the lesion to rostral spinal nucleus in pons. Imaging was done. MRI brain revealed a solitary pontine lesion - rostral tegmentum of Right hemi pons isolated trigeminal sensory neuropathy with solitary pontine lesions is rare and only few cases were reported in the literature with aetiologies including Vascular, inflammatory, infective and neoplastic.

Acute pontine infarction presenting as facial numbness due to dorsal trigemino thalamic tract involvement is rare (6). Dorsolateral medullary ischaemia with isolated ipsilateral trigeminal involvement has been reported (7). Space occupying lesion in brainstem with isolated trigeminal neuropathy was found in one patient with primary brainstem lymphoma (8). Demyelinating lesions like MS causing isolated cranial nerve involvement are generally rare and occur in 10.4% cases. Trigeminal sensory neuropathy more commonly effects V2 and V3 divisions. In our patient distribution of numbness in lower midline (nose and mouth) corresponding to pars oralis part of spinal nucleus of trigeminal nerve with solitary pontine lesion was seen. This is rare presentation.

Patient has spontaneously improved making demyelination as a possible diagnosis. She is kept under close follow up.

References

[1] Ghislain B, Rabinstein AA, Braksick SA. Etiologies and Utility of Diagnostic Tests in Trigeminal Neuropathy. Mayo Clin Proc.2022 Jul; 97 (7): 1318 - 1325.
[2] Hagen NA, Stevens JC and Michet Jr CJ. Trigeminalsensory neuropathy associated with connective tissue diseasesNeurology 1990; 40: 891–896
[3] Horowitz SH. Isolated facial numbness. Ann Intern Med 1974; 80: 49 - 53
[4] Blau JN, Harris M, Kennett S. Trigeminal sensory neuropathy. N Engl J Med 1969; 281: 873 – 6
[5] Peñarrocha M, Cervelló MA, Martí E, Bagán JV. Trigeminal neuropathy. Oral Dis.2007 Mar; 13 (2): 141 - 50. doi: 10.1111/j.1601 - 0825.2006.01356. x. PMID: 17305614.
[6] Komiyama M, Fu Y, Yagura H, Yasui T and Khosl VK. Pontine haemorrhages presenting as trigeminal neuropathy– report of three cases. Neurol Med Chir
[7] Holtzman RN, Zablozki V, Yang WC and Leeds NE. Lateral pontine tegmental hemorrhage presenting as isolated trigeminal sensory neuropathy. Neurology 1987; 37: 704–706.
[8] Kuntzer T, Bogousslavsky J, Rilliet B, Uldry PA, dTribolet N and Regli F. Herald facial numbness. EuNeurol 1992; 32: 297–3