



Case Report on Vernet Syndrome

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ABSTRACT:

INTRODUCTION: - Vernet's Syndrome is characterized by a constellation of unilateral cranial nerve palsies due the compression or narrowing of the jugular foramen involving the 9th, 10th, and 11th cranial nerves (nerves that travel within the jugular foramen).

PRESENT COMPLAINT AND INVESTIGATION:- A 32-year-old man, who complained of left ear pain, hoarse voice and swallowing difficulty for 5 days, presented at the emergency room. He showed vesicular skin lesions on the left auricle. On neurologic examination, his uvula was deviated to the right side, and weakness was detected in his left shoulder.

MAIN SYMPTOMS AND/OR IMPORTANT CLINICAL FINDINGS: soft palate dropping, deviation of the uvula towards the normal side, dysphagia, loss of sensory function from the posterior 1/3 of the tongue, decrease in the parotid gland secretion, loss of gag reflex, sternocleidomastoid and trapezius muscles paresis, vocal palsy, Weakness.

PAST HISTORY: At examination in the left side of the neck, 10 cm in size, round, without evidence of local skin reaction and without palpable, enlarged lymph nodes in the neck. The lateral left wall of the pharynx was displaced medially, markedly deforming the oropharynx, and floor of the mouth was dislodged frontally and upwards. There was a moderate to severe trismus.

KEY WORDS: Cranial nerves, vernet syndrome, tongue.

INTRODCUTION: -

Anterolateral to the foramen magnum, on either side of the skull base, are the two jugular foramina. The glossopharyngeal (IX), vagus (X), and spinal auxiliary (XI) nerves as well as the internal jugular vein (IJV) are the primary structures that travel through this foramen. A fibro-osseous bridge that joins the jugular process of the occipital bone with the jugular spine of the temporal bone divides the foramen into two sections. The inferior petrosal sinus, the tympanic branch of IX (Jacobson's nerve), and the cranial nerve IX are located in the anteromedial compartment (pars nervosa). The IJV, jugular bulb, cranial nerves X and XI, the auricular branch of vagus (Arnold's nerve), and the posterior meningeal branch of the ascending nerve are all located in the poster lateral component, also known as the pars venosa or vascularis.

PATIENT INFORMATION: A 36-year-old woman was hospitalised to AVBRH citing paralysis, weakness in her right shoulder, and lack of gag reflex.

SYMPTOMS OF PATIENT:- Reduced parotid gland secretion, soft palate lowering, uvula deviation to the normal side, dysphagia, loss of sensory function from the posterior 1/3 of the tongue, loss of gag reflex, and paresis of the sternocleidomastoid and trapezius muscles.

MEDICAL AND PSYCHOLOGY HISTORY:-

A 36-year-old lady had a left parotid tumour removed, and she had experienced right shoulder weakness for six years. It was during upper body-strengthening exercises that she sensed the weakness the most. She spoke of a persistent, chronic weakness that didn't get better or worse. She denied experiencing dysphagia, dysphonia, shortness of breath, swelling in her right arm, weakness in her left shoulder, and chest pain. After looking through her medical records, an MRI of the cervical region was performed.

PAST INTERVENTION AND OUTCOME:-

In the current instance, the varicella-zoster virus is the cause of Vernet syndrome. An electrodiagnostic investigation verified the damage to the spinal accessory nerve, while a neurological examination and laryngoscopy proved the damage to the glossopharyngeal and vagus nerves.

PHYSICAL EXAMINATION AND CLINICAL FINDING:-

A history of right internal auditory canal acoustic neurinoma and well-managed arterial hypertension in the patient. After determining that she had left vocal cord paresis and left side tongue atrophy, the otorhinolaryngology department, where she was seen for a follow-up, sent her to neurology. The patient had hypogeusia in the year prior to her consultation with the neurology department. After six months, she gradually had reduced vocal tone, weakness in the left shoulder, and dysphagia for both solids and liquids. The symptoms become more severe over time. A neurological examination revealed whispering speech, atrophy of the left side of the tongue without fasciculations, and left-sided drooping of the soft palate. Additionally, there was palsy and a noticeable atrophy of the sternocleidomastoid and left trapezius muscles. Every other region of the neurological evaluation revealed normal results. A 2.5 cm by 2 cm tumour was detected by cranial magnetic resonance imaging (MRI) in the internal jugular foramen. The cancer was hypointense in T1-weighted and isointense in T2-weighted images, and it extended caudally along the internal jugular vein's route.

TIMELINE AND PROGNOSIS:- Combining antiviral medication and steroid therapy to treat Vernet syndrome has demonstrated a favourable prognosis, with improved dysphagia and hoarseness as well as regained muscular strength in the shoulder joint abduction.

DIAGNOSTIC EVALUATION:-

If a patient is diagnosed with JFS clinically, the best course of action is to perform a magnetic resonance imaging (MRI) with contrast.

THE LIMITATIONS:-

These are the case report's contents. Firstly, the patient's temporal bone MRI was not thin enough in section imaging or high enough in resolution, making it impossible to confirm any edema or contrast enhancement in the damaged left lower cranial nerves. Secondly, there was no follow-up electrodiagnostic investigation for left spinal accessory neuropathy with axonopathy confirmed in the prior examination, nor an early electrodiagnostic study for vagus nerves addressing the vocal cord paralysis. Because a bullosa lesion was visible in the external auditory meatus in this instance, an early varicella-zoster virus infection might be assumed. Although in a case report by Hayashi et al., varicella-zoster virus infection was verified although bullosa was not seen. Therefore, varicella-zoster virus infection should be taken into consideration in addition to trauma, tumour, or vascular lesions in patients of suspected jugular foramen syndrome or Vernet syndrome, independent of the existence of rash.

DISCUSSION:-

In the current instance, the varicella-zoster virus is the cause of Vernet syndrome. An electrodiagnostic investigation verified the damage to the spinal accessory nerve, while a neurological examination and laryngoscopy proved the damage to the glossopharyngeal and vagus nerves. Numerous theories have been proposed to explain the pathogenic mechanism of the varicella-zoster virus's simultaneous activation of several sensory ganglia. First, there are multiple physical connections between the upper cervical and lower cranial nerves, which are classified as a highly variable spinal accessory nerve plexus. The simultaneous involvement of the cranial and cervical nerves by reactivation, which propagates the varicella-zoster virus, could be explained by communication between the lower cranial and higher cervical nerves. Second, concurrent reactivation of the varicella-zoster virus in several ganglia and interconnecting nerves is hypothesised to be one of the additional avenues of virus dissemination. Third, the varicella-zoster virus can spread through a shared blood supply, leading to cranial polyneuropathies. Generally speaking, paralysis of one or more of the four distinct cranial nerves is referred to as jugular foramen syndrome. It also includes neurological symptoms pertaining to the vagus, spinal accessory, and glossopharyngeal nerves. Jugular foramen syndrome is therefore referred to as Vernet syndrome by definitional narrowing. The posterolateral sulcus of the medulla oblongata is where the glossopharyngeal nerve, vagus nerve, and spinal accessory nerve emerge. They then travel via the basal cistern before leaving the cranium by the jugular foramen.

Primary tumours such as paraganglioma, meningioma, and schwannoma, metastatic tumours at the base of the skull, inflammation like meningitis and malignant otitis externa, sarcoidosis, Guillain-Barre syndrome, and trauma are the causes of Vernet syndrome. Varicella-zoster virus is an uncommon cause of Vernet syndrome, but there are few case reports of this condition. Two sections make up the jugular foramen? The anterior pars nervosa and the posterior pars venosa are respectively positioned. In a study by Hayashi et al., ipsilateral pars venosa hypoplasia was found utilising cranial helical computed tomography among case reports of varicella-zoster virus-related Vernet syndrome. According to Hayashi et al., ipsilateral hypoplasia-induced physical constriction of the jugular foramen may be a factor in the afflicted nerves becoming trapped as they travel through the overall prognosis for Vernet syndrome is unknown, treating it with antiviral medication and steroids has demonstrated a promising prognosis, resulting in decreased dysphagia and hoarseness as well as recovered muscular strength in the shoulder joint abduction.

CONCLUSION:-

Nerves originating from the brain or brain stem are known as cranial nerves. In contrast, spinal nerves originate from specific regions of the spinal cord. Information is transmitted by cranial nerves from the brain to other body areas, particularly the head and neck region.

REFERENCES:-

1. Park JH, Park IS, Ha JS, Sim JH, Sul SY. Dysphagia associated with jugular foramen syndrome due to traumatic brain injury. *J Korean Acad Rehabil Med.* 2001;25:163–167. [[Google Scholar](#)]
2. Ha SW, Kim JK, Kang SJ, Kim MJ, Yoo BG, Kim KS, et al. A case of Vernet's syndrome caused by non-specific focal inflammation of the neck. *J Korean Soc Clin Neurophysiol.* 2007;9:81–84. [[Google Scholar](#)]
3. Brown H. Anatomy of the spinal accessory nerve plexus: relevance to head and neck cancer and atherosclerosis. *Exp Biol Med (Maywood)* 2002;227:570–578. [[PubMed](#)] [[Google Scholar](#)]
4. Hashemilar M, Ghabili K, Shoja MM, Savadi-Oskouei D, Keyvani H. Varicella-zoster virus reactivation from multiple ganglia: a case report. *J Med Case Rep.* 2009;3:9134. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
5. Kleinschmidt-DeMasters BK, Gilden DH. Varicellazoster virus infections of the nervous system: clinical and pathologic correlates. *Arch Pathol Lab Med.* 2001;125:770–780. [[PubMed](#)] [[Google Scholar](#)]