



BMH Med. J. 2023;11(1):6-8. **Case Report**

## Wallenberg/Lateral Medullary Syndrome - A Case Report

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### Abstract

Wallenberg syndrome or lateral medullary syndrome is due to acute stroke affecting the lateral medulla, most commonly due to the occlusion of the intracranial portion of the vertebral artery or the posterior inferior cerebellar artery. The infarcted segment is the lateral medulla, posterior to the inferior olivary nucleus. Even though it was first described in the year 1808 by Gaspard Vieusseux, a more detailed and vivid description of the disease was given by Adolf Wallenberg, in the year 1895.

**Keywords:** Wallenberg Syndrome, Intracranial vertebral artery, and posterior inferior cerebellar artery.

### Introduction

Wallenberg syndrome or lateral medullary syndrome is a stroke in the lateral medulla due to acute vascular occlusion in the posterior circulation. The affected vessels are the intracranial portion vertebral artery or the posterior inferior cerebellar artery. It is also called as posterior inferior cerebellar artery syndrome.

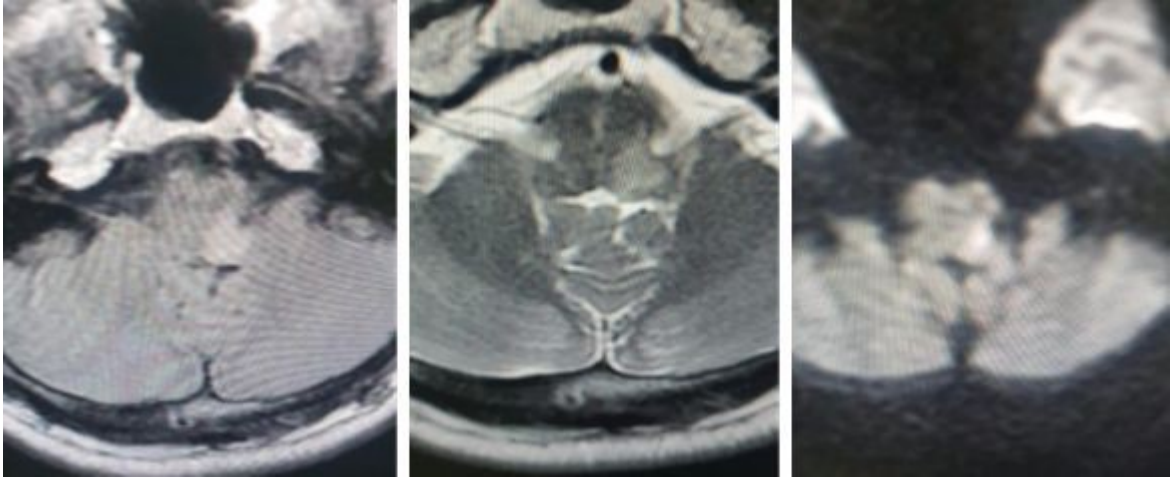
Predisposing factors for stroke include smoking, hypertension, and diabetes mellitus. Among the three hypertensives have more prevalence of lateral medullary syndrome. It is mentioned as the commonest stroke in the posterior circulation [1], and in the United States, 20% of all cerebrovascular accidents are in the posterior circulation.

### Clinical History

An elderly male person with diabetes and hypertension presented to emergency department following a history of right-side weakness, ataxia, and dysphagia. Clinically he had signs of absent gag reflex, dysarthria, and dysphonia. In addition he had ipsilateral Horner's syndrome (enophthalmos, blepharoptosis, facial anhidrosis, and pupillary miosis).

Blood parameters indicated diabetic status, with FBS 270 mg/dL and PPBS 337 mg/dL. Hb1Ac was 7.7%. WBC count was elevated and pus cells were noted on urine routine examination. CRP levels were elevated, at 97. Creatinine, Urea, Liver enzymes, and TSH levels were within the normal limits.

Initial magnetic resonance imaging (MRI) was normal. As his condition was deteriorating, repeat MRI scan was done. It showed T2/Flair hyperintense focus in the lateral aspect of the medulla and it was shining bright in Diffusion Weighted Imaging (DWI) (**Figure 1**). MRI with diffusion weighted study or images is considered to be the gold standard for diagnosing the disease [2]. However in 30% of cases diffusion weighted images need not contribute any positive findings pointing to Wallenberg syndrome [3].



**Figure 1**

MRA was not able to document any obstruction or thrombus in the intracranial portion of the vertebral or posterior inferior cerebellar artery.

### **Discussion**

Lateral medullary syndrome, as its name implies affects the lateral part of the medulla oblongata. It is a rare type of ischemic stroke but this disease has been well-studied and documented due to its involvement in multiple tracts and nuclei. It is usually termed as the disease of sixth decade. The risk factors of the disease are common to any other stroke mechanisms like hypertension, diabetes, smoking, and atrial fibrillation. It is due to thrombosis involving the intracranial portion of vertebral artery in majority of cases.

The pathological factors that contribute to the disease are atherosclerosis, arterial dissection, cardiogenic emboli, and small vessel diseases or cerebral microangiopathy. Ehlers Danlos syndrome and Marfan's syndrome are rare causes [4]. The presentation of disease is due to involvement of many vital tracts and nuclei assembled in the small area of involvement. Ipsilateral ataxia is due to involvement of the inferior cerebellar peduncle. Ipsilateral vertigo and dizziness are due to the involvement of the vestibular nucleus [5,6]. Ipsilateral Horner's syndrome due to its involvement of the descending hypothalamic tract. Spinal nucleus V and spinothalamic tract involvement leads to the loss of sensation (pain and temperature) in the ipsilateral part of face and contralateral body. Nucleus ambiguus involvement leads to dysphagia and hoarseness.

Lateral medullary syndromes also have certain subtypes based on the area of affection like rostrocaudal or the dorsoventral plane. The rostrocaudal part of involvement creates flacid dysphagia and hoarseness, while caudolateral involvement leads to ataxia and nystagmus. Horner's syndrome, nausea, and vomiting occur regardless of the site of involvement.

### **Conclusion**

It is a disease of posterior circulation, and presents with an array of symptoms and MRI with DWI is considered to be the gold standard for diagnosing the disease. It would show as a bright shining

intense area in the posterolateral aspect of medulla.

In 30% of cases, initial MRI is not fruitful in diagnosing the disease. High degree of clinical suspicion still helps to manage this life threatening disease. Here I am presenting a rare case of Wallenberg syndrome in which initial MRI was negative.

### **References**

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