Acta Scientific Neurology (ISSN: 2582-1121)

Volume 4 Issue 10 October 2021

Case Report

Lateral Medullary Infarction (Wallenberg Syndrome): A Case Report

Lenis Adriana Zempoaltecatl Cruz*, Liceth Meliza Arrieta Mariotis and María Guadalupe Campos Escoto

Hospital Regional de Alta Especialidad Ciudad Salud, Tapachula Centro, Chiapas, Mexico

***Corresponding Author:** Lenis Adriana Zempoaltecatl Cruz, Hospital Regional de Alta Especialidad Ciudad Salud, Tapachula Centro, Chiapas, Mexico.

Received: August 16, 2021;

Published: September 21, 2021

Abstract

Wallenberg syndrome is a clinical entity characterized by neurological symptoms conditioned by the total or partial occlusion of the basilar artery or one of it's branches, mainly the posterior-inferior cerebellar artery which supplies the lower face of the vermis, central nuclei of the cerebellum, medulla oblongata and choroid plexus of the fourth ventricle, so the symptomatology is closely related to the areas compromised by ischemia, the most frequent symptoms being: ataxia and/or dysmetria - diadochokinesis, nausea, vomiting, vertigo, dysphagia, dysarthria and in extensive cases ipsilateral facial hemihypoesthesia and contralateral hemianesthesia. We present the case of a 67 years old male patient who clinically debut with some of these neurological symptoms, so the diagnostic approach was by means of MRI of the skull.

Keywords: Wallenberg Syndrome, Magnetic Resonance Imaging

Introduction

Stroke is the leading cause of disability in the adult. According to the World health organization (WHO), more than 75% of deaths from stroke occur in low and middle income countries. Stroke can affect people of any age, although the incidence and prevalence increase considerably with age. In all types of strokes, including ischemic, age is the most important unalterable risk factor.

Presentation of the Case

A 67-year-old male patient, diabetic and long standing hypertensive (referred to as more than 10 years), positive smoking with a smoking index of 18, a body mass index of 36, a waist hip index of 1. Negative traumatic and surgical history.

The condition began on July 11, 2020 when she presented vertigo associated with intense headache referred to as 10 out of 10 on the visual analog scale and dysphagia, so she went to a first level care unit where they referred to a third level for protocol approach STROKE. MRI of the skull is performed where a round image is found in the right lateral aspect of the medulla, being hypointense in T1 (blue arrow), Hyperintense in T2 and FLAIR, with T2 effect in diffusion and ADC, without reinforcement in T1 after the administration of Gadolinium (Gd) (Image 1-4).

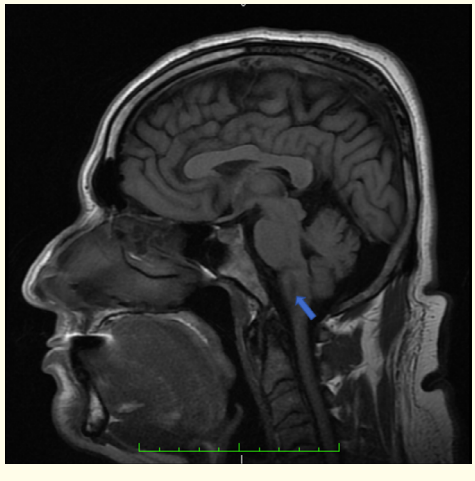

Image 1: MRI of the skull in the sagittal plane, in T1- weighted, showing zona hypointense oval medulla area (blue arrow).

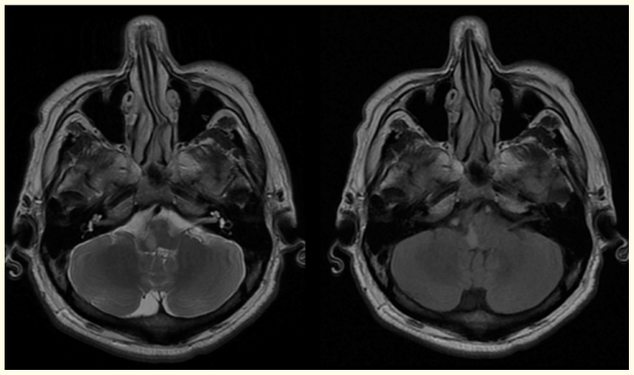

Image 2: MRI of the skull in an axial plane at the level of the posterior fossa showing a hyperintense oval image in T2 sequence and in FLAIR located in the lateral aspect of the medulla.

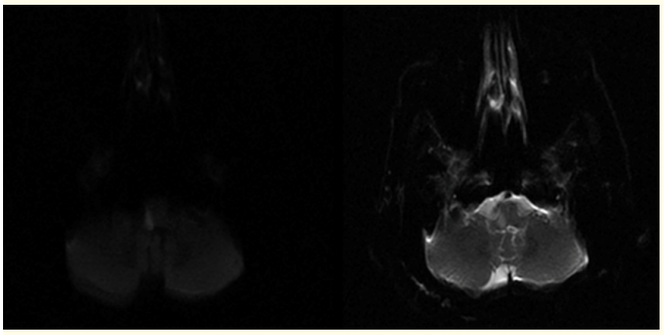

Image 3: MRI of the skull in an axial plane at the level of the posterior fossa where the T2 effect is demonstrated in DWI and in ADC, being hyperintense in both.

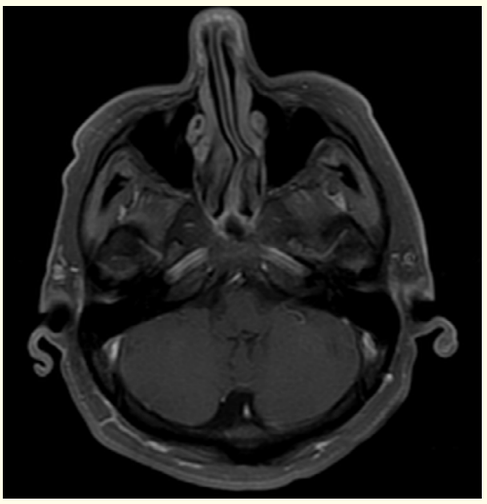

Image 4: MRI of the skull in an axial at the level of the posterior fossa after the administration of Gadolinium (Gd), the absence of enhancement is demonstrated.

Discussion

In the mid-nineteenth and early twentieth centuries, doctors and researchers in Europe showed particular interest in the posterior cerebral circulation, carefully analyzing the vascular anatomy and the anatomical-physiological correlations of this anatomical region, it was at that time that the multiple syndromes were described classic brainstem syndromes, these syndromes were named in honor of the original descriptors so that today some eponyms are still preserved in brainstem syndromes, for example Claude syndrome, Millard-Gubler syndrome, Babinski syndrome, Foville syndrome and of course also Wallenberg syndrome among others [1]. Lateral medullary infarction was described in 1850 by Adolf Wallenberg in a patient where he observed the clinical triad of cerebellar ataxia, paralysis bulbar and crossover hemianesthesia.

It is reported that the incidence of posterior cerebral vascular events represents a lower percentage with respect to those of the anterior circulation, being 20 - 30% for the posterior circulation and between 70 - 80% for the anterior circulation; However, this may vary according to the frequency of use of magnetic resonance imaging as an initial diagnosis of stroke. For example, some tertiary centers in South Korea report that posterior circulation infarcts represent for about 40% of ischemic stroke cases [2]. There are studies that compare the incidence of events in the anterior and posterior circulation, reporting a posterior affection range that ranges from 16% to 51% for the Asian population [3-9].

In the "interstroke" study, Martin J O'Donnell., *et al*. Found that 90% of ischemic cerebrovascular events can be associated with 10 risk factors, which are listed in table 1.

Arterial hypertension
Active smoking
Waist – hip index
Food risk score
exercise
Mellitus diabetes
Alcohol (consumption > 30/month)
Psychosocial stress and depression
Apolipoprotein B-A1 index

Table 1: 10 risk factors associated with 90% of ischemic cerebrovascular events.

O'Donnell MJ, Xavier D, Liu L, Zhang H, Chin SL, Rao-Melacini P., *et al*. Risk factors for ischaemic and intracerebral haemorrhagic stroke in 22 countries (The interstroke study).

Wallenberg syndrome is a clinical syndrome caused by acute infarction in the lateral aspect of the brain medulla, the appearance of which usually presents with focal neurological signs that persist for more than 24 hours. Table 2 shows the sing and symptoms that can occurs. Found associated with posterior circulation infarction.

Sensosy symptoms/signs
Ipsilateral trigeminal
Contralateral trigeminal
Bilateral trigeminal
Severe gait ataxia
Dizziness
Horner sign
Hoarseness
Dysphagia
Severe dysphagia
Dysathria
Vertigo
Nistagmus
Limb ataxia
Nausea/vomiting
Headache
Neck pain
Skew deviation of eyes
Diplopia
Hiccup
Facial palsy
Forced gaze deviation

Table 2: *Neurologic signs and symptoms (J.S. Kim, Posterior Circulation Stroke "Brain stem infarction syndromes", Springer 2021).*

Conclusion

The clinical approach to the patient and imaging studies are of vital importance to determine lateral medulla infarction.

Thanks to the new diagnostic support methods by MRI, it's possible to guide the clinician on the possible conditioning of the patient's symptoms and thus achieve timely management by reducing the ischemic areas and subsequent controls.

Conflict of Interest

The authors declare that they have no conflict of interest.

Financing Support

The authors declare that they did not receive funding for this study.

Bibliography

1. Wolf JK. "The classical brain stem syndromes". Springfield Ill: Charles C Thomas Publication (1971).

2. Lee BI., *et al*. "Yonsei Stroke Registry. Analysis of 1,000 patients with acute cerebral infarctions". *Cerebrovascular Diseases* 12.3 (2001): 145-151.

3. Subramanian G., *et al*. "Risk factors for posterior compared to anterior ischemic stroke: an observational study of the Registry of the Canadian Stroke Network". *Neuroepidemiology* 33.1 (2009): 12-16.

4. Miyamoto N., *et al*. "Comparison of clinical backgrounds with anterior versus posterior circulation infarcts". *Journal of Stroke and Cerebrovascular Diseases* 19.5 (2010): 393-397.

5. Zeng Q., *et al*. "Etiology and risk factors of posterior circulation infarction com- pared with anterior circulation infarction". *Journal of Stroke and Cerebrovascular Diseases* 24.7 (2015): 1614-1620.

6. Li Y., *et al*. "Risk factors between intracranial-extracranial atherosclerosis and anterior- posterior circulation stroke in ischaemic stroke". *Neurological Research* 39.1 (2017): 30-35.

7. Sommer P., *et al*. "Is functional outcome different in posterior and anterior circulation stroke?" *Stroke* 49.11 (2018): 2728-2732.

8. Zurcher E., *et al*. "Differences in ischemic anterior and posterior circulation strokes: a clinico-radiological and outcome analysis". *Journal of Stroke and Cerebrovascular Diseases* 28.3 (2019): 710-718.

9. O'Donnell MJ., *et al*. "Risk factors for ischaemic and intracerebral haemorrhagic stroke in 22 countries (The interstroke study): a case-control study". *Lancet* 376.9735 (2010): 112-123.

Volume 4 Issue 10 October 2021