



**HAL**  
open science

## Lenin's Stroke

N. Nighoghossian, T. H. Cho, L. Mechtouff

► **To cite this version:**

N. Nighoghossian, T. H. Cho, L. Mechtouff. Lenin's Stroke. Case reports in neurology, 2021, 13 (2), pp.384-387. 10.1159/000515657 . inserm-03452176

**HAL Id: inserm-03452176**

**<https://inserm.hal.science/inserm-03452176>**

Submitted on 26 Nov 2021

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial 4.0 International License

## Single Case – General Neurology

# Lenin's Stroke

Norbert Nighoghossian<sup>a, b</sup> Tae-Hee Cho<sup>a, b</sup> Laura Mechtouff<sup>a, b</sup>

<sup>a</sup>Department of vascular neurology, Hôpital Neurologique Pierre Wertheimer, Hospices Civils de Lyon, Bron, France; <sup>b</sup>CarMeN, INSERM U1060, INRA U1397, INSA de Lyon, Université Lyon 1, Bron, France

### Keywords

Stroke · Atherosclerosis · Bolchevik leader

### Abstract

Lenin's stroke remains a matter of debate. Here, we propose to assess the potential mechanisms. Lenin died on January 21, 1924 at the age of 53 years. Although some doctors suggested that the origin of his health problems was neurosyphilis, the autopsy findings were consistent with a severe atherosclerosis. This process might account for his recurrent ischemic strokes. In view of the family vascular history, an early hereditary atherosclerosis may be proposed.

© 2021 The Author(s).

Published by S. Karger AG, Basel

The man who set fire to Saint Petersburg in October 1917 and threw Russia into chaos and merciless terror is commonly presented as a great proletarian leader wearing his cap. However, in March 1923, he appeared sadly struck by a stroke. In his wheelchair, he appeared a shadow of his former self, stiff with a right-sided hemiplegia and speechless (Fig. 1).

Historians thought that Lenin's serious health problems dated back to 1921. When the Russian civil war ended, the country was gripped by famine and devastation. Lenin started to suffer from chronic headaches, insomnia, and fainting spells. He was 51 years old and had difficulty maintaining his usual pace of work. He wrote to Alexei Maximovich Gorky "I am so tired, I do not want to do anything at all [1]." Lenin suffered the first of his 3 strokes on May 26, 1922 which was associated with aphasia and a deficit of the right upper limb. He experienced a slow recovery and was still presented as healthy, able to hold a newspaper in his right hand (Fig. 2).

On April 23, 1922, on the advice of one of the German doctors called to his bedside, he was operated to remove the bullet lodged near his neck since the 1918 attack. Indeed on August 30, 1918, Lenin spoke at the Hammer and Sickle, an arms factory in south Moscow. As Lenin left the building and before he entered his car, Fanny Kaplan called out to him. When Lenin turned toward her, she fired 3 shots with a Browning pistol. One bullet passed through



**Fig. 1.** Lenin's last stage.



**Fig. 2.** Lenin's at his country home on GORKI in August 1922 after recovering from his first stroke.

*Figure 1. Lenin at his home in Gorki in August 1922. (From Moscow News, April 22, 1990.)*

Lenin's coat, the other 2 struck him: one passing through his neck, puncturing part of his left lung, and stopping near his right collarbone; the other lodging in his left shoulder. Lenin refused to leave the security of the Kremlin to seek medical attention. Doctors were brought in to treat him but were unable to remove the bullets outside of a hospital. Despite the severity of his injuries, Lenin survived [2].

The operation went well, but on May 22, Lenin had a stroke. In this context, the relationship between the previous attack and the surgical intervention may have favored carotid arterial wall damage may be more pronounced on the left carotid? Stricken with hemiplegia



**Fig. 3.** Stalin visiting Lenin.

on his right side, he also had difficulty speaking. He was examined again to find the origin of his illness; a test for syphilis was negative. Lenin gradually recovered at Gorky Manor and continued to keep himself informed of the work of the Politburo and Sovnarkom, in particular through Stalin who regularly visited him (Fig. 3) [3]. The propaganda showed him still active reading the newspaper (Fig. 2). In December 1922, he suffered a second stroke, which marked the end of his political career and paralyzed his right side. In March 1923, a third stroke left him speechless (Fig. 1). Lenin died on January 21, 1924 at the age of 53 years.

Although doctors suggested that his health problems were related to 2 bullets left in his body after the 1918 conspiracy, the direct cause of death is hardly in doubt today. The autopsy showed that Lenin's repeated strokes were due to severe atherosclerosis of his cerebral arteries. These were found to be almost blocked. During the autopsy, a doctor found that when he struck one of these arteries with a surgical forceps, it made a mineral sound, as if its calcification had fossilized it. The large blood vessels in Lenin's brain were stiffened by atheromatous plaques [4].

But what could have caused such damage to a man in his early fifties with a healthy lifestyle? Lenin did not smoke and forbade people to light a cigarette in his presence. He drank moderately and was not obese. Vinters et al. [4] concluded that the large size of Lenin's brain lesions and their location hardly correspond to what is usually found in cases of neurosyphilis. They also pointed out that none of the other potential signs of venereal disease (heart or bone damage) were found during autopsy. Lenin's father, Ilya Ulyanov, died at the age of 54 years – almost the same age as his illustrious son – of a stroke. Three of Lenin's siblings also died of cardiovascular disease. In this context, one may hypothesize a genetic component to account for these multiple, severe atherosclerosis cases in this family. Mutations in the NT5E gene were associated with symptomatic calcifications of the arteries of the lower limbs and joints in several families [5, 6]. A similar, as of yet unidentified process targeting cerebral arteries, may have affected Lenin's family. This premature atherosclerosis may also be explained by an inherited lipid disorder. Stress may also have played a role in the progression of his atherosclerosis. However, the autopsy and analyses at the time did not rule out other potential causes of genetic arterial disease such as homocysteinemia, pseudoxanthoma elasticum, or Fabry disease; thus, mystery still surrounds the death of Vladimir Lenin. Many of the documents regarding his death remain classified to this day.

## Statement of Ethics

This study complies with the guidelines for human studies, and the research was conducted ethically in accordance with the World Medical Association Declaration of Helsinki.

## Conflict of Interest Statement

The authors have no conflicts of interest to declare.

## Funding Sources

This work was supported by the RHU MARVELOUS (ANR-16-RHUS-0009) of Université de Lyon, within the program “Investissements d’Avenir” operated by the French National Research Agency.

## Author Contributions

Pr. Norbert Nighoghossian, Tae-Hee Cho, and Dr. Laura Mechtouff have made contributions in drafting the work or revising it critically for important intellectual content and gave final approval of the version to be published and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved according to the ICMJE Criteria for Authorship.

## References

- 1 Lerner V, Finkelstein Y, Witztum E. The enigma of Lenin’s (1870–1924) malady. *Eur J Neurol*. 2004;11:371–6.
- 2 Sixsmith, Martin . Fanny Kaplan's Attempt to Kill Lenin, August 1918. In: Brenton T, editor. *Was Revolution Inevitable?: turning points of the Russian revolution*: Oxford University Press; 2017 Feb 1. p. 175–80.
- 3 Kaplan GP, Petrikovsky BM. Advanced cerebrovascular disease and the death of Vladimir Ilyich Lenin. *Neurology*. 1992;42:241–5.
- 4 Vinters H, Lurie L, Mackowiak PA. Vessels of stone: Lenin’s “circulatory disturbance of the brain”. *Hum Pathol*. 2013;44:1967–72.
- 5 St Hilaire C, Ziegler SG, Markello TC, Brusco A, Groden C, Gill F, et al. NT5E mutations and arterial calcifications. *N Engl J Med*. 2011;364:432–42.
- 6 Azuma N, Uchida T, Kikuchi S, Sadahiro M, Shintani T, Yanagi K, et al. NT5E genetic mutation is a rare but important cause of intermittent claudication and chronic limb-threatening ischemia. *Circ J*. 2020;84(7):1183–8.