Caligula: a neuropsychiatric explanation of his madness

Calígula: una explicación neuropsiquiátrica de su locura

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ABSTRACT
Gaius Julius Caesar Augustus Germanicus, better known as Caligula, (12 CE to 41 CE) was the third Roman emperor and ruled only four years. Throughout his life he experienced several traumatic events, and, in addition, historians mention some premorbid conditions that could cause him to become the monster that most historians know today. When Caligula was 25 years old, he suffered a near-fatal illness that turned his story around. One possible cause was lead poisoning due to the high consumption of wine, which contained lead, by Roman patricians. On the other hand, it is plausible that Caligula experienced epilepsy that began in childhood, later experienced status epilepticus in 37 CE, which triggered an epileptic psychosis with the consequent psychopathic and paranoid changes that led him to the madness noted by historians.

Keywords: Lead Poisoning; Psychotic Disorders; Status Epilepticus.
a "disorder of intellect" and experienced anxiety and insomnia. However, regardless of the nature of the disease, most historians have concluded that Caligula’s illness affected his mental health and caused the personality changes that he experienced after his recovery. After his near-fatal illness, he became an alcoholic, believed he was a deity, and, moreover, he became paranoid about the risk of assassination, which led him to sentence Gemellus and Macro to death. Finally, after all the eccentric behavior Caligula displayed in his short period of government, he was assassinated in 41 CE at the age of 28 years.

**FROM WHICH NEUROLOGICAL AND PSYCHIATRIC ILLNESSES DID CALIGULA SUFFER?**

Historians have proposed several possible conditions and illnesses that Caligula may have had during his life. These conditions are summarized in Table 1.

One of the most common suggestions for Caligula’s illness is encephalitis. In modern times, even with adequate treatment, encephalitis has a high mortality rate that varies between 8.8 and 12.8% depending on its etiology. Additionally, the disease can lead to serious neurological sequelae. For that reason, the probability that Caligula had encephalitis is low. Because of the previously mentioned, this review will focus on lead poisoning and epilepsy.

### LEAD POISONING

Lead poisoning is known as "saturnism" or "plumbism", and its clinical manifestations include cognitive disorders, fatigue, irritability, anxiety, vomiting, and anorexia. Its name is attributed to the god Saturn who shared some of these characteristics, particularly a melancholic temperament and sullen behavior.

In ancient Greece and Rome, a syrup named “sapa” was added to wine during its preparation to improve its taste. Sapa was prepared in lead vessels in which acidified wine was boiled, which promotes the synthesis of lead acetate. Many people have therefore considered this as one of the factors that led to the fall of the Roman Empire.

Most historians agree that epilepsy is the most likely candidate for Caligula’s illness. There are several details in Caligula’s biography that support this argument. It has been suggested that members of the Julius family suffered from epilepsy. Additionally, several historians point out that, during his childhood, Caligula had episodes of sudden falls during his childhood, Caligula had episodes of sudden falls.

Regarding Caligula’s background, it is possible that he experienced status epilepticus in 37 CE, which left him with emotional, behavioral, and cognitive sequelae. After this episode, he showed constant mood swings with irascibility or unmotivated laughter, lack of impulse control, perverse behaviors, hypersexuality, and sadism, and was terrified by thunder and loud noises. Caligula also suffered from severe insomnia and could not sleep more.

### ILLNESSES DID CALIGULA SUFFER?

#### Table 1. Possible illnesses of Caligula.

| Illnesses             | References                                                                 |
|-----------------------|-----------------------------------------------------------------------------|
| Epilepsy              | Baratta & Halleguen, 2009; Sidwell, 2010; Benediktson, 1989; Camargo et al., 2018; Demetrioff, 2018; Sandison, 1958 |
| Insomnia              | Sidwell, 2010; Camargo et al., 2018; Demetrioff, 2018; Katz, 1972; Sandison, 1958 |
| Encephalitis          | Sidwell, 2010; Camargo et al., 2018; Demetrioff, 2018; Sandison, 1958 |
| Lead poisoning        | Gilfillan, 1965; Mackie et al., 1975 |
| Neurosyphilis         | Baratta & Halleguen, 2009 |
| Bipolar disorder      | Baratta & Halleguen, 2009; Sidwell, 2010 |
| Hyperthyroidism       | Baratta & Halleguen, 2009; Sidwell, 2010; Benediktson, 1989; Katz, 1972 |
| Anxiety disorder      | Baratta & Halleguen, 2009; Sidwell, 2010; Benediktson, 1989; Katz, 1972; Sandison, 1958 |
| Personality disorder  | Baratta & Halleguen, 2009; Sidwell, 2010; Benediktson, 1989 |
| Schizophrenia         | Baratta & Halleguen, 2009; Sidwell, 2010; Benediktson, 1989 |
| Alcoholism            | Sidwell, 2010; Benediktson, 1989; Demetrioff, 2018; Sandison, 1958 |
than three hours per night. Furthermore, he experienced delusions of grandeur, paranoid episodes, and strange behaviors, such as when he ordered his troops to collect seashells from the shore. All these symptoms fit what in modern epileptology is known as epileptic psychosis. This condition has a prevalence of 5.6 to 5.9% and can occur with any type of epilepsy. However, its prevalence increases to 9.3% in people with temporal lobe epilepsy. One of the first onset symptoms is insomnia, something frequently mentioned in accounts of Caligula. Epileptic psychosis can also be characterized by symptoms of depression, delusions, manic psychosis, strange thoughts, and behavior.

It is plausible that Caligula experienced epilepsy that began in childhood, possibly with febrile seizures and later dialetic or cognitive seizures. Caligula later experienced status epilepticus in 37 CE, which triggered an epileptic psychosis with the consequent psychopathic and paranoid changes. This clinical condition may have been affected by excessive alcohol intake and lead poisoning.

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