



HISTORY OF MEDICINE

Julius Caesar (100 - 44 BC) – did he have a brain tumour?

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Julius Caesar was one of the outstanding leaders of antiquity. Perhaps best remembered for his military achievements, he was also a cultured person, a writer and historian, outstanding orator and statesman who, through his constitutional reforms, paved the way for the founding of the Roman Empire. It is less well known that progressive illness plagued him during his later years and might even have played a role in precipitating his untimely death. In this study, we examine the nature of his disability.

Life history¹

Julius Caesar was born on 13 July 100 BC, to patrician parents. He had two sisters, Julia major and Julia minor; the latter became the grandmother of Octavius (later named Augustus Caesar), Caesar's successor. He had an excellent education but very little is known of his childhood and upbringing. In early adulthood, he was in serious disfavour with the ruling consul and tyrant, Sulla, and had to live with friends in constant hiding. Eventually, Sulla accepted him and, at age 18, he was sent as a diplomat to the court of King Nicomedes of Bithynia. Back in Rome in 79 BC, he practised as a barrister, but gradually entered the race for political power. He showed impressive political insight, great determination and, despite

constant opposition, became *quaestor* in 68 BC, *curule aedilis* in 65 BC, *pontifex maximus* (religious leader) in 63 BC, and eventually consul in 59 BC. During a Spanish campaign in 60 BC, he discovered his talent for military leadership.

He was tall, well built and fair, with a rather broad face and keen dark eyes. To his disappointment, he started turning bald early in life, and took to regularly wearing a laurel wreath (originally acquired as an emblem of esteem) to hide the baldness.² He was fastidious regarding regular shaving and clipping of his hair, which he combed forward. Hair on the rest of his body was depilated with tweezers. He dressed unusually for his time, wearing loose clothes and a long-sleeved tunic with fringes at its ends. He was fond of luxurious living and was often deeply in debt. He collected pearls, statues, carvings and old paintings, and regularly paid high prices to obtain handsome and able slaves. He was abstemious in his food and drink. Caesar married three times: Cornelia (who died early), Pompeia (whom he divorced in 62 BC) and Calpurnia. Known for his charm, Caesar had a large number of mistresses, who included the wives of friends and colleagues. He was suspected of sexual liaisons with at least two men: King Nicomedes (80 BC) and an engineer, Mamurra, during the Gallic wars (55 BC).

In 58 BC, the Senate appointed him governor of the Cisalpine province. Immediately, he launched an attack against the Helvetii, Gauls north of the Alps and Germanic tribes, initiating an ongoing military campaign (the Gallic Wars) which lasted nearly 8 years. In 55 BC and again in 54 BC, he briefly invaded Britain. He proved to be an outstanding general. Superbly fit, an excellent swordsman and expert horseman, he took active part in fighting and endeared himself to his soldiers by sharing their daily hardships. He rarely showed wanton brutality or excessive vindictiveness towards his enemies. War loot was usually shared with his soldiers. However, Suetonius³ noted that Caesar was often not financially honest. Towns and temples were unnecessarily sacked to collect money for personal gain and settling of his large personal debts. As consul, he stole 1 400 kg of gold from the Capitol and replaced it with gilded bronze; and he extorted the King of Egypt for personal gains. He eventually amassed a very large personal fortune.

Caesar's successful Gallic campaigns ensured widespread popularity, political power in the Roman hierarchy, and growing opposition from his enemies in the Senate. In 50 BC, the Senate ordered him to resign his post and to report to

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Rome. Caesar refused, and on 11 January 49 BC symbolically crossed the Rubicon River with his legions and headed for Rome, resulting in civil war, with Pompey as the Senate's defender of Rome. A brief Spanish campaign which ended with the surrender of Cordoba was followed by two battles in Greece: an inconclusive action at Dyrrhachium followed by the defeat of Pompey at Pharsalus, and his flight to Alexandria (where he was murdered). Caesar had followed him to Egypt, where he became embroiled in a local war of succession between Cleopatra and her brother, Ptolemy XIII. Ptolemy was killed and, partly owing to the famous romantic interlude between Cleopatra and Caesar, the latter only arrived back in Rome in 47 BC. The Civil War campaign continued in North Africa, where Caesar was finally victorious at the battle of Thapsus (46 BC).

Caesar returned to Rome and was received with unprecedented jubilation and a flood of honours, including the post of dictator for 10 years, and 'Controller of Public Morals' for 3 years. Caesar showed great clemency towards old enemies, and ensured the populace that he would not be a tyrant or king. A triumph was held over 4 days, recognising his victories in Gaul, Alexandria, Greece and North Africa. To mark the Gallic victories, his veteran legions happily sang rude marching songs in which they alluded *inter alia* to Caesar's extramarital affairs and reputed sexual involvement with Nicomedes. Caesar took it all in good spirit but objected strongly to the Nicomedes allegation. He was now at the absolute peak of his power – and also recognised as *pater patriae*. A brief military campaign in Spain (45 BC), with battles at Munda and Corduba, cleared up the last remaining resistance from the civil war.

Caesar was now in his fifties and it became clear that his health was declining – he experienced *inter alia* two epileptic attacks. King in all but name, he proceeded to alter the constitution of the republic in an autocratic manner. Although he repeatedly refused to be hailed or crowned as king, his abrogation of many old traditions was seen as arrogance, even as erratic behaviour. When senior members of the senate on occasion approached him with new tokens of esteem, he did not rise to greet them, which was considered quite unacceptable. He announced his intention of leading a campaign against Parthia, starting on 18 March 44 BC. The first legions were to cross the Adriatic Sea a week earlier. By the end of 45 BC, a conspiracy against Caesar took shape, based on the belief that he was indeed becoming a tyrant, which would lead to the destruction of the Republic. On 15 March 44 BC (the Ides of March), he was assassinated during a meeting of the Senate, at the age of 55 years.

Extensive public sympathy for Caesar was immediately evident, and the conspirators had to flee and hide. The homes of the ringleaders, Brutus and Cassius, were torched, and Caesar was honoured at the public games given by his

successor, Octavius, in July 44 BC. A comet then appeared in the early night sky for 7 days, which was seen as an omen that Caesar had joined the gods. The Senate deified him, the hall in which he died was walled up, the day became a 'Day of Patricide', and the Senate would in future not meet on the Ides of March. Suetonius recorded that all 60 conspirators were condemned, very few outlived Caesar by 3 years or more, and the majority died unnatural deaths e.g. in battle, by assassination, in shipwrecks or by suicide.^{1,3}

Illnesses and death

The only known illness early in Caesar's life was an attack of quartan fever (malaria) during the time when he was a fugitive from Sulla, from 85 - 82 BC.³ For the greater part of his life he was physically very fit, took part in battles and, even at the age of 52 years, was able to swim 200 metres in the Bay of Alexandria, carrying his cloak and a number of manuscripts with him.³ However, it became clear in his fifties that he had acquired an illness which was affecting his daily life. Suetonius³ wrote that Caesar experienced epileptic fits on two occasions while on official business. Kamm¹ stated that there was no evidence that he had epilepsy before the age to 50 years. Plutarch⁴ was more specific, stating that the first epileptic incident occurred at Corduba, and that he later had a recurrence of his 'usual illness' at the battle of Thapsus, in 46 BC. Caesar visited Corduba twice in his fifties – in 49 BC (at the onset of the civil war) and in 45 BC (end of the civil war). It is then possible that Caesar experienced his first epileptic fit in 49 BC (51 years old). According to Plutarch,⁴ the second attack occurred before the battle of Thapsus, and therefore presumably at the age of 54 years in 46 BC. Plutarch gave an interesting description of the episode at Thapsus: While Caesar was marshalling his army before the battle, he became aware that his 'usual sickness' was taking hold of him. Before becoming entirely overpowered by it, he retired and was carried to a nearby tower, where he remained during the battle. Plutarch noted that there was also a different version which maintained that Caesar did take part in the battle.

Contemporary writers associated the epilepsy with a gradual deterioration of Caesar's general health. According to Plutarch,⁴ he kept up his vigorous soldier's life in spite of obviously failing health, characterised by a 'disease of his head'. Klotz⁵ suggested that the latter indicated that he suffered from headaches. Suetonius³ mentioned ill health towards the end of his life, characterised by disturbances of consciousness, in addition to epilepsy; terrifying interruptions of his sleep at night probably denoted nightmares. Caesar on occasion declared that rising rapidly from a sitting position caused tremors and giddiness, with objects whirling about him; he could even become 'insensible'. Plutarch,⁴ however, mentioned that on occasion Caesar rose rapidly without obvious ill effects. Appian⁶ stated that Caesar saw his planned Parthian



campaign as a possible cure for his illness, which plagued him particularly when he was inactive; this disagrees with Suetonius' claim that the epilepsy came on while he was on campaign.³

Kamm¹ suggested that Caesar's careless reaction to assassination rumours could be seen as erratic behaviour partially owing to ill health; he disbanded his personal bodyguard; never a great believer in omens, he disregarded the many omens reported to him, as well as the augur Spurinna's specific warning that the Ides of March (15 March, full moon) of 44 BC would be dangerous for him.³ Suetonius³ stated that Caesar's friends suspected that, owing to his ill health, he no longer wished to live. At a dinner on 14 March, he had declared that he wished to die quickly.

He was assassinated at the start of a Senate meeting held on 15 March 44 BC in the Conference Hall of Pompey's theatre. (The Senate Hall was being rebuilt after it had burned down in 52 BC.) Immediately after Caesar had taken his seat, the approximately 60 conspirators, with daggers hidden, gathered behind his chair. His toga was pulled open by one Cimber, and then the two Casca brothers made the first of 23 stab wounds to be inflicted on Caesar. The rush of conspirators was so furious that they accidentally stabbed each other in the process. In self-defence, Caesar succeeded in stabbing his stilus through the arm of one of the Casca brothers, before falling; he died at the foot of Pompey's statue. Three slave boys eventually carried Caesar's body back to his house, where the physician Antistius did a postmortem examination and noted that only one of the 23 wounds (a stab to the chest) had been mortal.^{1-3,6}

Discussion

Caesar was evidently very healthy into his fifties, when he developed epilepsy as described by Suetonius,³ Appian⁶ and Plutarch.⁴ In centuries to come, all references to Caesar's epilepsy were based on just these three ancient authors. Plutarch described 2 attacks at the ages of approximately 51 years and 54 years. Suetonius similarly mentioned two episodes of sudden loss of consciousness, which almost certainly denoted epilepsy. It may be assumed that epilepsy which first appears at the age of 50 years or more, is almost certainly not idiopathic (constitutional) epilepsy but secondary to underlying brain pathology. In the absence of a history indicative of significant trauma to the skull, or infections, the possibility of cerebrovascular disease, or tumours in particular, must be high. Cerebrovascular disease is unlikely to have manifested with two episodes of epilepsy over approximately 4 years without other evidence of progressive ischaemic cerebrovascular disease. Benign tumours such as meningiomas may indeed present with generalised epilepsy without other symptoms of cerebral disease, and progress very gradually in the course of many years. Generalised epilepsy is the first symptom in two-thirds of cases of meningioma.⁷

Other symptoms to be expected in benign brain tumours would include headache, vomiting, visual deterioration (papilloedema), focal symptoms (like focal epilepsy, monoplegia, deafness and aphasia), dizziness, personality changes and mental deterioration. With a lesion of the temporal lobe, amygdala or hippocampus, a typical psychomotor or temporal lobe syndrome may arise: episodes of complex sensory and motor dysfunction characterised by speech defects, disordered thinking, automated aimless simple movements (like sucking, chewing or lip smacking) and only occasionally generalised convulsions.^{7,8} As related above, historians recorded many vague symptoms of ill health but little clear evidence indicative of intracranial pathology. There is, however, agreement that Caesar's general health deteriorated significantly during the last years of his life – and Kamm¹ suggested that, towards the end, his behaviour became erratic. Suetonius³ mentioned episodes of loss of consciousness (besides the epilepsy) and Plutarch's 'disease of the head' might have indicated headache. His friends even suspected that he no longer wished to live.⁴ Two attacks of epilepsy would not have caused such deterioration, and associated illness must be suspected.

Plutarch's description of Caesar's second epileptic attack (at Thapsus) is atypical in that he apparently experienced warning symptoms of 'his illness' which lasted long enough for him to arrange for transfer to a safe place.⁴ The warning aura of typical epilepsy is normally much too short to allow for such precautions before the convulsion occurs – although, very occasionally, epileptics do indeed experience a warning prodrome long enough to take precautions.⁸ Kamm¹ did not favour the diagnosis of temporal lobe epilepsy, but this syndrome might well explain the Thapsus incident, in which a relatively long period of abnormal, warning sensations may precede a convulsion – which may not even occur.⁸ In fact, Plutarch's story does not specifically mention a convulsive episode at Thapsus.

In conclusion, we suggest that Julius Caesar's epilepsy, which first manifested after his 50th birthday, was secondary to underlying intracranial pathology, possibly a benign brain tumour. Terminal erratic behaviour might even have caused him to be unduly negligent about his own safety and so have aided his assassins on the Ides of March.

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