



Short Communication

Genghis Khan's death (AD 1227): An unsolvable riddle or simply a pandemic disease?

Wenpeng You^{a,b,*}, Francesco M. Galassi^{b,c,*}, Elena Varotto^{b,c,d}, Maciej Henneberg^{a,b,c}^a Biological Anthropology and Comparative Anatomy Unit, Adelaide Medical School, University of Adelaide, Adelaide, Australia^b FAPAB Research Center, Avola, Sicily, Italy^c Archaeology, College of Humanities, Arts and Social Sciences, Flinders University, Adelaide, Australia^d Department of Humanities (DISUM), University of Catania, Catania, Sicily, Italy

ARTICLE INFO

Article history:

Received 13 December 2020

Accepted 29 December 2020

Keywords:

Plague

History of medicine

Pandemic

Genghis Khan

Paleopathology

Infectious diseases

Military medicine

ABSTRACT

The article examines Genghis Khan's death from the historico-medical perspective. Although several etiologies have been proposed over the years, most of these at a closer look appear to be later inventions by historians. A reassessment of the available evidence suggests instead bubonic plague as the most likely clinical scenario. Genghis Khan's death is also a reflection on the impact of pandemic diseases on leadership in ancient times as well as nowadays.

© 2021 The Author(s). Published by Elsevier Ltd on behalf of International Society for Infectious Diseases.

This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Genghis Khan, the honorific title of Borjigin Temüjin (1162–1227), was not only considered one of the most famous conquerors in history, but also praised as the founding father of the Yuan Dynasty in China (1279–1368) and a supporter of religious tolerance. The Mongol Empire, 2.5 times larger by its territory than the Roman Empire, bridged Eastern and Western civilizations (Man, 2013).

At the time of Khan's demise, according to Mongolian culture, kings' corpses retained their divine power after death, hence their remains were buried in unmarked, highly protected and impracticable places, particularly on the mountains where they were thought to be closer to their final destination: heaven. Other burial options included inhuming the monarch's body in a pit secretly dug in a field, or the corpse might even be cremated (Drobyshev, 2006). Therefore, historians, archaeologists and even grave robbers, who have been trying to find Genghis Khan's body and potentially accompanying treasures, may never be able to succeed and a definitive paleopathological demonstration of his cause of death may always be wanted.

To date, the circumstances of Genghis Khan's death remain a mystery. In order to honour or denigrate his memory, friends and

foes of the Mongols created a plethora of intriguing, yet conflicting, legends about the famous king's demise. These stories suggest, inter alia, that: (1) he died from injuries sustained after falling from his horse; (2) he succumbed to blood loss after being castrated by a Tangut princess or simply stabbed by her (the Tangut people being a Tibeto-Burman tribe inhabiting Northwest China); (3) he fell in battle against the Chinese; (4) he died of an infected arrow wound that occurred during his final campaign against the Western Xia (Man, 2013).

All these legends were most likely created at a later stage and failed to take into account—or even willingly ignored—an accepted historical fact, namely that Khan's family and followers were instructed to keep Khan's death as their most hidden secret, since it happened at the wrong time when the Mongols were at the vital stage of their desired conquest of Western Xia, the empire against which they had been fighting for over 20 years (1205–1227).

By looking at Khan's demise through a medical lens—a multidisciplinary approach which has been used when studying the diseases affecting other famed conquerors of the past (Galassi et al., 2016)—a more clinically complex story emerges. Yet, before examining the noble patient's clinical case, Yelü Chucai (1190–1244), a Confucian scholar, needs to be introduced. Chucai is best known for his service as the chief adviser to the emperors of the Mongols for 29 years (1215–1244), of which 12 (1215–1227) were to Genghis Khan because of his exceptional education encompassing various fields such as medicine, mathematics, astrology and music. His medical skills were first fully understood

* Corresponding authors at: FAPAB Research Center, Piazza Umberto I 5, 96012 Avola, SR, Sicily, Italy.

E-mail addresses: wenpeng.you@adelaide.edu.au (W. You), francescom.galassi@flinders.edu.au (F.M. Galassi).

<https://doi.org/10.1016/j.ijid.2020.12.089>

1201–9712/© 2021 The Author(s). Published by Elsevier Ltd on behalf of International Society for Infectious Diseases. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

when, after the battle of Lingwu was won by the Mongols against the Tangut in 1226, he collected rhubarb (大黄, *dahuang*), which had been known to the Chinese, in order to later treat thousands of Mongolian soldiers dying from the plague (Shinno, 2016). In the words of the German sinologist Erich Haenisch (1880–1966): “thanks to this drug Chucai saved many soldiers’ lives “[*m*]it dieser Arznei habe er, als bald danach eine Epidemie im Heere ausgebrochen sei, einer Unmenge von Männer das Leben gerettet” (Haenisch, 1933).

Genghis Khan attacked Western Xia six times over more than 20 years before he was able to conquer the kingdom in 1227. During the last invasion, Khan directed his Mongolian troops to besiege Yinchun, the capital of Western Xia, for 6 months. The long campaign must have both physically and psychologically worn out the famed warrior, then 65 years old, which may well explain why he looked for distractions, such as an escape to the hot weather in the Liuan mountains near Guyuan, while he was still planning on a new strategy to make Western Xia finally capitulate, and thinking of an offensive against the Jin Empire (Man, 2013).

The *History of Yuan* (Yuanshi), one of the *Twenty-Four Histories of China*, has it that between the 18–25 August 1227 Khan was feeling unwell with fever, which ultimately killed him within eight days after the disease’s onset. This pyretic rise was first examined in the light of a complication of the unhealthy climate by the Persian historian Atâ-Malek Juvayni (1226–1283) and in the 17th century by Guush Luvsandanzan in his *Altan Tobchi* (or «Golden Summary») (Juvaini and Qazvini, 1997). The latter reference was interpreted by the aforementioned Haenisch as typhoid fever (*Hier möchte man an Typhus denken*) (Haenisch, 1933), a disease commonly affecting ancient armies in the past, but not necessarily the sole possibility, considering that there is no mention of typical symptoms such as abdominal pain and vomiting.

Instead of spectacular, highly sophisticated or even more logically acceptable interpretations (e.g. typhoid fever) of Genghis Khan’s cause of death, the reported clinical picture and the duration of the disease, particularly given the general circumstances of the disease gripping his army as early as 1226, suggest a more reasonable conclusion and retrospective diagnosis, that of plague, a most ancient, history-changing and still present disease (Bramanti et al., 2016; BBC News, 2020). The vague terminology used to describe the king’s symptoms and the duration of the illness make it more reasonable to opt for bubonic plague, although a pneumonic involvement secondary to a haematogenous spread of the bacteria cannot be ruled out simply because signs such as bloody sputum and vomiting are not mentioned in the sources (Mayo Clinic website, 2021; Rajerison et al., 2013). This decision to

ignore them fits well with the general atmosphere of secrecy surrounding Genghis Khan’s last days of life. Khan’s sudden death from plague with minimal signs and symptoms likely made it easier for his own people to keep his health condition secret in order not to jeopardize the ongoing campaign. While the exact location of Genghis Khan’s burial site may forever remain mysterious, a closer look at the clinical likelihood and overall historico-medical context of his final campaign can help students of his life shed light on the important circumstances of his demise, as well as stress the need for taking into account pandemic diseases as general causes of death of historical personalities rather than trying to assume particular, exceptional causes of death.

Funding

None.

Conflict of interest

None declared.

Ethical approval

Not required.

References

- BBC News. China Bubonic Plague: WHO ‘Monitoring’ Case but Says it is ‘Not High Risk’ <https://www.bbc.com/news/world-asia-china-53325988> [Accessed 25 July 2020].
- Bramanti B, Stenseth NC, Walløe L, Lei X. Plague: a disease which changed the path of human civilization. *Adv Exp Med Biol* 2016;918:1–26.
- Drobyshev YI. Funeral and memorial Rituals of the Medieval Mongols and their Underlying Worldview. *Anthropol Archeol Eurasia* 2006;45(1):65–92.
- Galassi FM, Bianucci R, Gorini G, Paganotti GM, Habicht ME, Rühli FJ. The sudden death of Alaric I (c. 370–410 AD), the vanquisher of Rome: a tale of malaria and lacking immunity. *Eur J Intern Med* 2016;31:84–7.
- Haenisch E. Die letzten Feldzüge Cinggis Han’s und sein Tod nach der ostasiatischen Überlieferung. *Asia Major* 1933;9:503–51.
- Juvaini A-M, Qazvini MM. Genghis Khan: The History of the World Conqueror. Manchester University Press; 1997 p.180, n.3.
- Man J. Genghis Khan: Life, Death, and Resurrection. MacMillan; 2013.
- Mayo Clinic website: <https://www.mayoclinic.org/diseases-conditions/plague/symptoms-causes/syc-20351291>.
- Rajerison M, Ratsitorahina M, Andrianavoarimanana V, et al. Plague. In: Farrar J, editor. *Manson’s Tropical Infectious Diseases*. Saunders Ltd.; 2013. p. 404–9.
- Shinno R. The Politics of Chinese Medicine Under Mongol Rule. Routledge; 2016. p. 26.