



## Letter to the Editor

## 19th c. tuberculosis probably has nothing to do with current tuberculosis



## ARTICLE INFO

## Keywords:

Pathocenosis  
Darwinian medicine  
Neuro-tuberculosis  
Evolutionary medicine

We read with interest the response of Armocida and Martini [1] to our proposal for a retrospective diagnosis of the case of Anna O. [2], and we agree that this diagnosis is hardly compatible with tuberculosis in its current form. But it is precisely an old form of the disease, occurring on a population radically different from the current population.

The history of medicine is inseparable from the history of diseases, and it is a frequent (and serious) methodological error to attempt to model both current physiology and current pathological processes on ancient organisms. The application by Armocida and Martini to the Anna O. case of statistics from current North American populations or co-infected with HIV is therefore totally off-topic, but above all, a total non-sense.

At the time of Bertha Pappenheim (the true name of Anna O.), when disorders occur that make us propose the diagnosis of neuro-tuberculosis (1880), there was no antibiotic, pasteurization was not yet applied to milk, vaccination was not yet released, there was no fridge and no micro-wave, etc. As a result, poly-parasitism was major, and exposure to infectious agents absolutely common. For such populations from the past, exposed from early childhood to tuberculosis, there is nothing to indicate that the delays of evolution of the disease (and thus of survival in the absence of “effective” treatment in the modern sense of the term) were so dramatic that at present. The large number of cases of *serpens endocrania symmetrica* (probably corresponding to an intracranial localization of tuberculosis) in the past populations [3] seems to indicate not only an important frequency of cases of neuro-tuberculosis (of the chronic tuberculous meningitis type), but also long survival time.

This natural history of diseases, which is similar to a birth/evolution/interaction/transformation/hybridization/disappearance cycle, covers the notions of pathocenosis [4] and evolutionary (or Darwinian) medicine [5]. These notions are essential to take into account when providing a retrospective diagnosis on past populations: the 19th century tuberculosis probably has nothing to do with current tuberculosis. The same for patients and physio-pathology.

## References

- [1] E. Armocida, M. Martini, Neurotuberculosis at the time of Anna O.: life prospects, *J. Neurol. Sci.* (2019).
- [2] P. Charlier, S. Deo, The Anna O. mystery: hysteria or neuro-tuberculosis? *J. Neurol. Sci.* 381 (2017) 19.
- [3] I. Hershkovitz, C.M. Greenwald, B. Latimer, et al., *Serpens endocrania symmetrica* (SES): a new term and a possible clue for identifying intrathoracic disease in skeletal populations, *Am. J. Phys. Anthropol.* 118 (2002) 201–216.
- [4] J.P. Gonzalez, M. Guiserix, F. Sauvage, et al., Pathocenosis: a holistic approach to disease ecology, *Ecohealth* 7 (2010) 237–241.
- [5] A.A. Roman-Franco, *Homo sapiens as physician and patient: a view from Darwinian medicine*, *P. R. Health Sci. J.* 32 (2013) 113–123.

Charlier P.<sup>a,b,\*</sup>, Deo S.<sup>a</sup>

<sup>a</sup> Section of Medical Anthropology (UVSQ), UFR of Health Sciences, 78180 Montigny-Le-Bretonneux, France

<sup>b</sup> Musée du quai Branly – Jacques Chirac, 222 rue de l'Université, 75007 Paris, France

E-mail address: [philippe.charlier@uvsq.fr](mailto:philippe.charlier@uvsq.fr) (P. Charlier).

\* Corresponding author at: Section of Medical Anthropology (UVSQ), UFR of Health Sciences, 78180 Montigny-Le-Bretonneux, France