



Suspected tuberculosis in an early 17th-century northern Finnish mummy—A computed tomography case study



Tiina Väre^{a,*}, Jaakko Niinimäki^b, Juho-Antti Junno^{a,c}, Milton Núñez^a, Sirpa Niinimäki^a, Markku Niskanen^a

^a Archaeology, University of Oulu, 90014 Oulun Yliopisto, Finland

^b Center for Medical Imaging, Physics and Technology Research of University of Oulu and Oulu University hospital, POB 50, FI-90029, OYS, Finland

^c Medical Research Center of University of Oulu and Oulu University hospital, POB 5000, 90014 OYS, Finland

ARTICLE INFO

Article history:

Received 14 December 2015

Received in revised form 16 May 2016

Accepted 20 May 2016

Keywords:

Church archaeology

Tuberculosis

Mummification

Northern Finland

Early modernity

Gynecomastia

ABSTRACT

The custom of burying deceased members of the elite beneath church floors was common in 17th–18th-century Finland. This practice is responsible for the mummification of the remains of an early 17th-century vicar of Kemi parish, Nikolaus Rungius. Computed tomography performed on his remains revealed a possible tuberculous infection in his spine. The purpose of this paper is to further elaborate on findings in support of this diagnosis. Whether Vicar Rungius had tuberculosis is not only interesting considering his personal history, but also in terms of the history of tuberculosis in Northern Finland where the first systematically recorded cases date back to the 18th century.

© 2016 Elsevier Inc. All rights reserved.

1. Introduction

In early modern Northern Finland the common custom of depositing deceased members of the elite in graves beneath churches in cool and well-ventilated conditions has led to the mummification of several human remains (e.g. Núñez et al., 2008). The remains of Nikolaus Rungius, who was an early 17th-century vicar of Kemi (now Keminmaa) parish, are a good example of such mummification (Fig. 1).

A computed tomography (CT) images taken of Vicar Rungius' remains revealed signs of pathological conditions that had probably had a severe impact on his health. To begin with, he had diffuse idiopathic skeletal hyperostosis (DISH), which was possibly related to his suspected obesity. In addition to this, two collapsed thoracic vertebrae (T4 and T5; Fig. 2) raised the suspicion of tuberculosis (TB), which was further substantiated by the discovery of calcifications in the testes and mediastinum (Fig. 3; Väre et al., in press). This paper presents new findings and discusses the previous ones

supporting the presence of multi-locational extra-pulmonary TB in these remains. If, indeed, the diagnosis of tuberculosis is convincing, it would be unique to paleopathological research in Northern Finland. Early archival cases are also absent as diseases were not listed, and the systematic recording of TB deaths only began in the mid-17th century. Thus, Vicar Rungius may represent the first known tuberculosis case in the region. Overall, this CT study pioneers a larger-scale project to digitally document and study the human remains found beneath the local churches, and it thus offers a rather unique opportunity to explore the past life and health in the Northern periphery of Europe.

Tuberculosis is an important factor of mortality in developing countries and among immunosuppressed subpopulations. It is estimated that one third of the human population is infected with this chronic biphasic disease. Yet, in relatively few people it will develop beyond its latent primary form (WHO, 2015). Until the breakthrough of antibiotics and successful vaccination campaigns in the 20th century TB was a common disease also responsible for a large portion of mortality in Western countries. It is typically transmitted to the lungs through droplets, but can be passed to the cervical lymph nodes or the intestines through infected milk. If the bacilli (*Mycobacterium tuberculosis complex*) enter the bloodstream they can infect any organ or tissue (Aufderheide and Rodriguez-Martin, 2011, 119–120, 126–131). Extra-pulmonary sites are affected in approximately a fifth of cases (CDC, 2014, 74–75). Without proper

* Corresponding author.

E-mail addresses: tiina.vare@student.oulu.fi (T. Väre), jaakko.niinimaki@oulu.fi (J. Niinimäki), juho-antti.junno@oulu.fi (J.-A. Junno), nunez.milton@gmail.com (M. Núñez), sirpa.niinimaki@oulu.fi (S. Niinimäki), markku.niskanen@oulu.fi (M. Niskanen).



Fig. 1. The remains of Vicar Rungius (c. 1560–1629) mummified as they were buried underneath his home church in Kemnmaa. He was not local to Lapland but originated from the Turku region in Southwestern Finland. This area was well connected with Finland's motherland at the time, Sweden, where the earliest TB cases date to the Neolithic period.

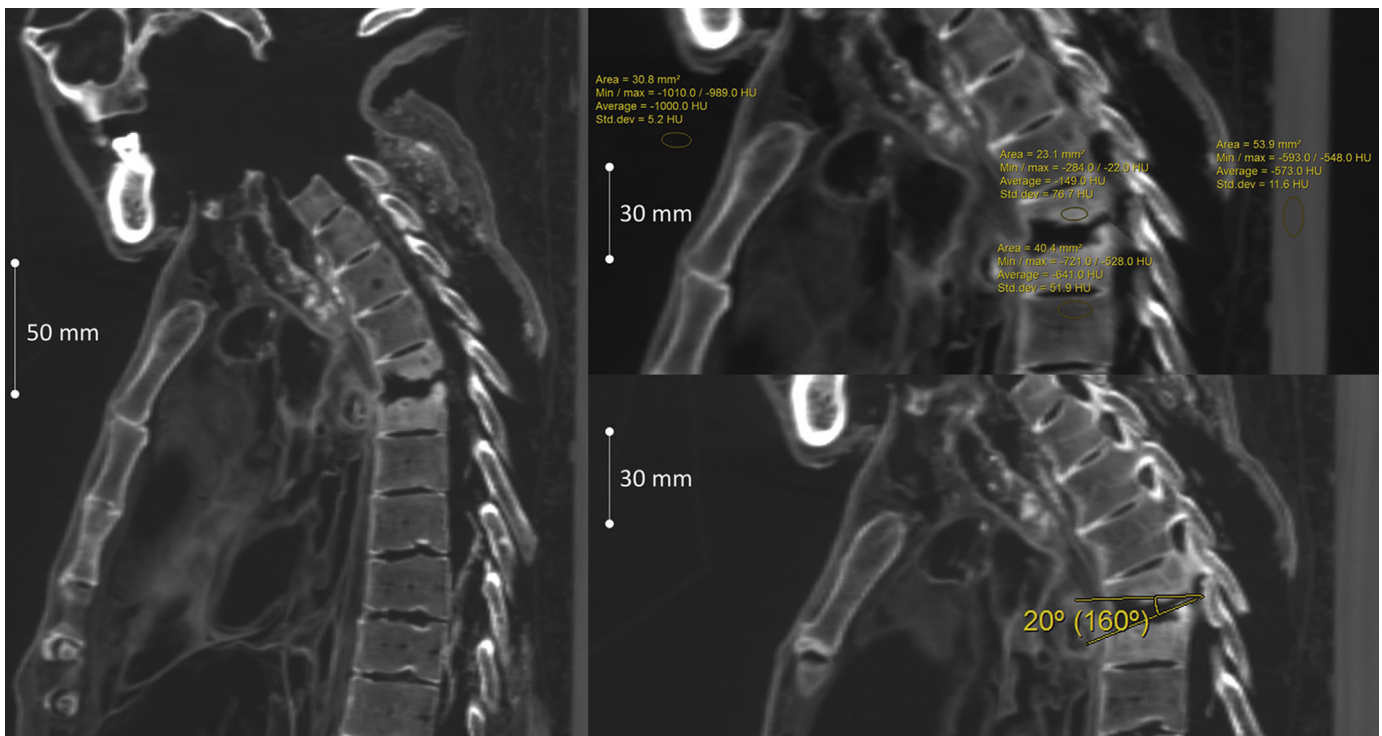


Fig. 2. A plausible inflammatory change had afflicted the fourth and fifth thoracic vertebrae.

medical care, pulmonary TB, which is the most common form of the disease, will lead to death in approximately 30–50% of active cases. Occasionally the infection develops into acute lethal generalized miliary TB characterized by multiple micro-granulomas afflicting various organs. Another highly lethal form of the disease is tuberculous meningitis. (Aufderheide and Rodriguez-Martin, 2011, 120; WHO 2015)

2. Material and methods

Vicar Rungius was born c. 1560 near Turku in Southwestern Finland and died in 1629 in Kemi (now Kemnmaa) in Finnish Lapland (Fig. 1). According to the then contemporary custom, he was buried beneath his church, where his remains mummified through cold-drying. In the 18th century his mummy became a popular

Download English Version:

<https://daneshyari.com/en/article/101295>

Download Persian Version:

<https://daneshyari.com/article/101295>

[Daneshyari.com](https://daneshyari.com)