The social treatment of leprous individuals in 9-10th century Croatia

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INTRODUCTION

Leprosy, also known as Hansen's disease (named after the Norwegian physician Gerhard Armauer Hansen who first isolated the bacillus of leprosy), is a chronic infection caused by the bacillus Mycobacterium leprae. The disease mostly attacks the skin, peripheral nerves, the respiratory tract, the eyes and bones. There are two clinical types of leprosy – tuberculoid (mild manifestation) and lepromatous (severe manifestation) which develop depending on the immune response of the person afflicted. Contrary to popular belief, leprosy has a low rate of mortality and is not easily transmitted from person to person. Nonetheless, there is no disease in human history that caused such horror and so many laws written just to separate afflicted individuals from healthy ones. Leprosy was the only disease of ancient and medieval world that caused building of special hospitals called leprosariums where the patients were being treated. It is estimated that by the 13th century over 19000 leprosaria were built in Europe. People infected with the disease lost their families, social status and possibility of earning for a living.

ARCHAEOLOGICAL CONTEXT

The earliest cases of leprosy in Croatia were discovered in the Radašinovci archaeological site. Radašinovci – Vinogradine belongs to the earliest horizon of early medieval Croats. Because of low soil acidity and a large percentage of sand in the soil, the skeletal material was very well preserved. The site is located 20 kilometers south from Benkovac. It was excavated from 1999-2009 revealing the presence of a small cemetery that was in use from the 9th -10th centuries (Figure 1). A total of 124 individuals (30 males, 44 females and 50 subadults) have been recovered. Most of the graves exhibited specific grave architecture consisting of relatively large irregular stones (in 2-3 rows) and covered with stone slabs. The bases of the graves were paved with broken stone plates (Figure 2). An exception to this is grave 55 which was covered by a single monolithic slab, as well as several graves in which the deceased were laid directly into earthen pits and covered with stone slabs. Six individuals (4.8% of the total sample) - four males, and two females exhibit clear osteological signs of leprosy.

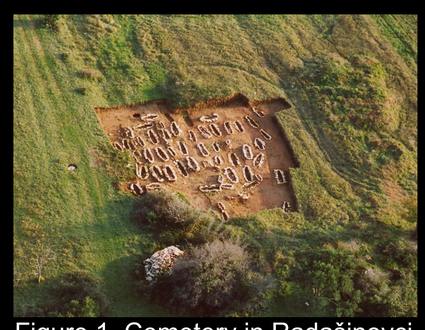

Figure 1. Cemetery in Radašinovci archaeological site

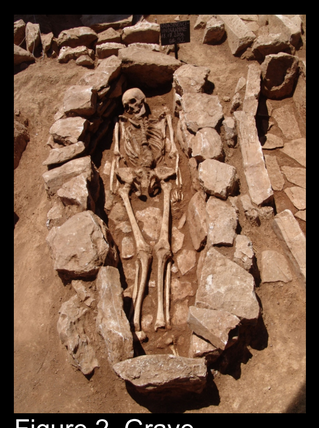

Figure 2. Grave architecture

PATHOLOGICAL CHANGES ON THE BONES

In skeletal material leprosy can be easily recognized on the facial bones and phalanges of the hand and foot. The great Norwegian paleopathologist Vilhelm Moller-Christensen defined three basic osteological changes that leprosy does. He called those changes facies leprosa. Those changes are: atrophy of the nasal spine (spina nasalis anterior); this atrophy is usually followed by remodeling and widening of nasal aperture; 2. resorption and destruction of the central maxilla; and 3. destruction of the palatine and endonasal changes which are the result of chronic inflammatory processes.
All of the afflicted skeletons from Radašinovci display these changes to various degrees – maxillary resorption is for instance most pronounced in a 30-34 years old male from grave 68 (Figure 3), palatine destruction in the same individual (Figure 4), endonasal changes in a female from grave 3 (Figure 5) etc. On the postcranial skeleton, changes can be seen on the phalanges, metatarsal bones, tibia, fibula, ulna and radius. On the fingers of the hand, the destruction starts from the nails from where it spreads to the second and first phalanges. Metacarpal bones are usually not included. On the legs, the destruction starts on metatarsal bones (Figure 6) and from there it spreads to the proximal phalanges. The changes are often bilateral but mostly asymmetrical. The main feature of these changes are concentric atrophy and diaphyseal resorption which frequently result in complete loss of a bone element. In approximately 30% of cases the nutrient foramen is enlarged and articular surfaces can show different amounts of arthritic changes, subluxation or sprain. Sometimes there are volar grooves (Figure 7) on the distal proximal phalanges in the hand that are the result of flexion contracture. There can also be unspecific periostitis on distal tibia and fibula, and (rarely) on ulna and radius.

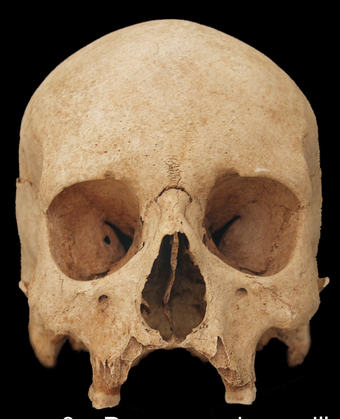

Figure 3. Pronounced maxillary resorption in a 30-34 years old male from grave 68

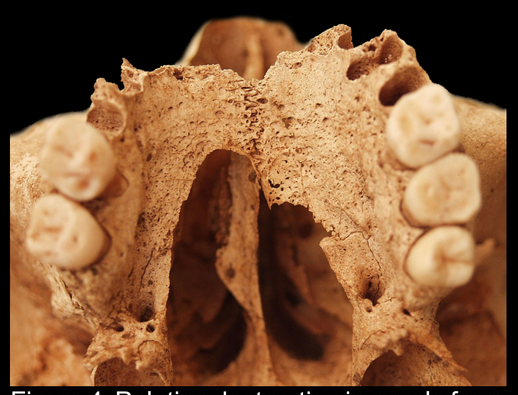

Figure 4. Palatine destruction in a male from grave 68

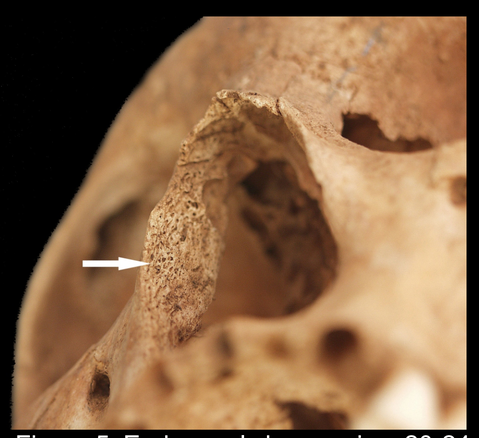

Figure 5. Endonasal changes in a 20-24 years old female from grave 3

Figure 6. Concentric resorption of the fifth metatarsal bone in the male from grave 68

Figure 7. Volar groove on the distal proximal phalanx in the male from grave 68

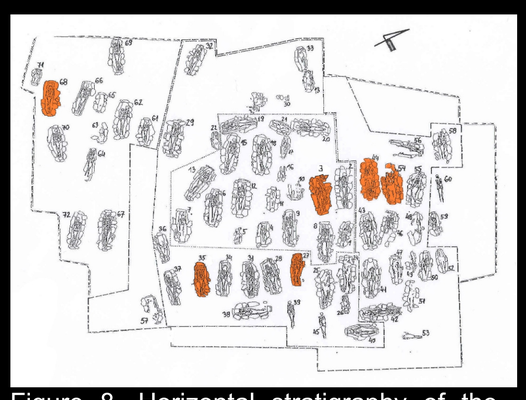

Figure 8. Horizontal stratigraphy of the cemetery

CONCLUSION

Horizontal stratigraphy of the cemetery (Figure 8) shows that individuals with leprosy were randomly distributed throughout the cemetery. These individuals were not grouped in one part of the cemetery, or buried in a peripheral area. They exhibit the same grave orientation, architecture and artifacts as the other interred individuals, demonstrating that during the 9th-10th centuries in Croatia the social reaction to individuals suffering from leprosy showed no evidence of the ostracism that would later become so ubiquitous.

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