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CONGENITAL SYPHILIS ON A MEDIEVAL SKELETON

ABSTRACT: *The skeleton of a 9–10 year-old child exhibiting evidence of congenital syphilis was excavated in Szentkirály, in the Southern middle part of Hungary. The archaeological indicators dated it to the early 17th century. The authors carried out macroscopic, microscopic and X-ray analyses. The significance of this case consists on the one hand in the fact that this is the first skeleton with congenital syphilis in Hungary, on the other hand it is a new chance for palaeopathology. We can start the research of the appearance and spread of syphilis in Hungary.*

KEY WORDS: *Congenital syphilis — Middle Ages — X-ray analyses.*

INTRODUCTION

At the end of the 15th century a disease shook Europe with its dramatically fast spreading. In 1494 Charles VIII of France invaded Italy to acquire the throne of Naples. His army consisted of mercenaries from all parts of Western Europe. The military campaign was successful, they captured Naples. Although the Italians could not defeat this army, a disease – which later became known as syphilis – did it (Pusey 1933).

At that time more and more descriptions of this „new“ disease appeared all over Europe. The first case was reported by doctor Krausz in Hungary as early as in 1494 (Rajka and Szodoray 1960). Some more sporadic cases followed it, but it was probably brought to Hungary in mass by the famous Spanish mercenaries of the army of Charles V. During the 16th–17th centuries thousands of Spanish soldiers were campaigning in Hungary.

The origin of treponematoses, among them of venereal syphilis, is controversial among the scientists. There are three theories: the Columbian, pre-Columbian and Unitarian. The followers of the Columbian theory state that syphilis was brought from the New World to the Old World by Columbus.

According to the pre-Columbian theory syphilis was present in Europe long before Columbus's journey, e. g. among the ancient Romans, Greeks and Chinese. Several diseases were known and named together as leprosy. Syphilis was among them as „venereal leprosy“. Around 1500 it could have been differentiated as a separate disease – due to the development of sciences. The Unitarian theory explains that there are four treponemal syndromes (pinta, yaws, bejel, venereal syphilis) caused by the same organism, *Treponema pallidum*. This pathogen was present in both the New and the Old World (Steinbock 1976).

Wright (1971) observed some features produced by treponemal infection on the Neanderthal Collection (Gibraltar II, original Neanderthal skull).

Syphilitic cases from the New World are known from as early periods as the 6th century B. C. (Walker 1983), the 9th century A. D. (Yaşar İçsan and Miller-Shaivits 1985) or from the 11th–15th centuries (Reichs 1989).

In the Old World we know some palaeopathological proofs of presence of syphilis before 1500 A. D. (Pales 1930). Scheidegger (1989) examined an adult skeleton originating from the same period as the skeleton studied here.

Paper presented at the 3rd Anthropological Congress of Aleš Hrdlička, held on September 3–8, 1989 in Humpolec, Czechoslovakia.

MATERIAL AND METHOD

The skeleton that we would like to present was discovered during an excavation at Szentkirály. Szentkirály was a constantly inhabited medieval village from the 11th–17th centuries. It was situated between the Danube and Tisza Rivers in the Southern middle part of Hungary, quite close to the market town Kecskemét. The village was located on one of the main national trading routes of the past, on the salt transport road from Szeged to the royal capital Buda. The first church of the village was built at the turn of the 11th–12th centuries. It was dedicated to the first Hungarian king, St. Stephen. The village was named after its church.

The position of the village on the trading route could mean an extraordinarily high level of contact with foreigners, compared to ordinary villages living in their quite isolated environment.

The excavation brought to light a cemetery with more than four hundred graves. It was in continuous use from the 12th to the 17th centuries. The settlement was probably destroyed in the Turkish wars of the 16th–17th centuries.

In the cemetery we have found a child's grave with the remains of a coffin. It contained a complete skeleton of an approximately 9–10 years old individual. Archaeologically it was dated to the early 17th century. Macroscopic examination indicated lesions of congenital syphilis. We carried out both X-ray and microscopic analyses and the right tibia was sawn up in order to study its inner structure.

Two basic types of congenital syphilis can be recognized: *syphilis connatalis* (early syphilis) and *syphilis connatalis tarda* (late syphilis). The first type as a rule brings very early death at the age of just a few months. The second type lets most of the patients live about 10–15 years, some of them, however, can survive to adult age. Here we have met the second type. Our find was a discovery.

RESULTS

The front view of the skull evidently shows a *caput quadratum* (Figure 1). In itself it could indicate rachitis as well as syphilis, but the characteristic signs of rachitis were missing from all the other bones. In the syphilitic

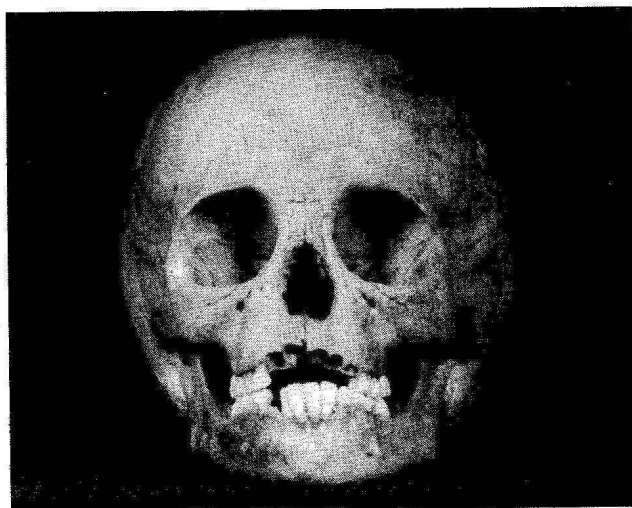


Figure 1. The frontal view of the skull from Szentkirály.

long bones the epiphysis not united with the diaphysis develops without any deformity. In rachitis there generally are deformities (Jacobi 1897). We can see *cribra orbitalia* which will be considered later.

The lateral view clearly shows the flattening of the nose (Figure 2). Probably the nasal bone suffered a gummatous process. The gummatous process of the osseous nasal septum produces a shriveling scar which draws the gristly and the osseous parts of the nose to the nasal bone. This type of deformation creates saddle-nose (Haranghy 1960).



Figure 2. The lateral view of the skull from Szentkirály.

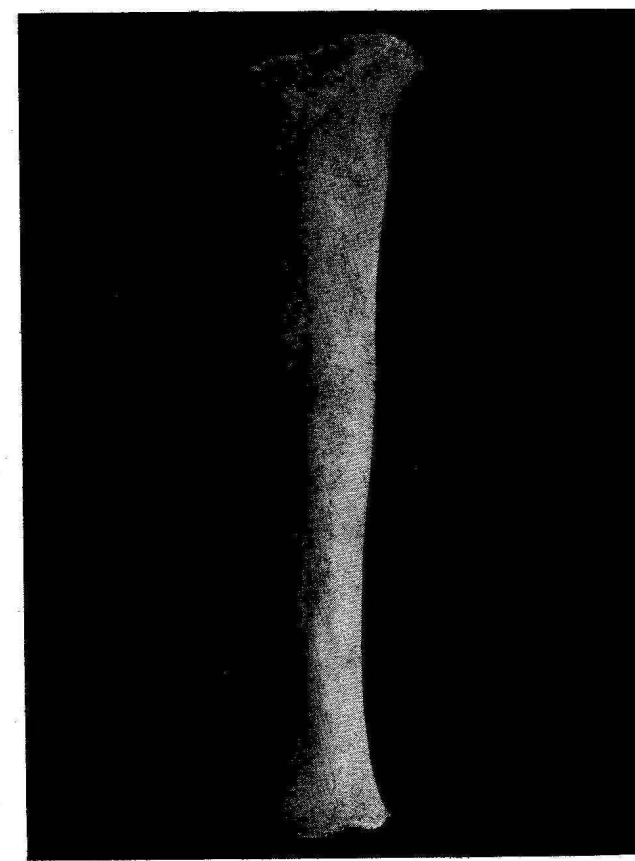


Figure 3. The macroscopic picture of the tibia.

The macroscopic picture of the tibia presents another very characteristic feature of congenital syphilis, the thickening of the bone (Figure 3). This is the result of periostitis or hyperplastic osteoperiostitis in late congenital syphilis. This type of lesion produces the so called saber-shin bone (Steinbock 1976). The swelling of the long bones may develop symmetrically (as in our case) or only on the bones on one limb (Taylor 1875).

The right tibia was sawn up. On the front edge a lamellar hyperostosis can be seen layered on the diaphysis and metaphysis due to periostitis (Figure 4). In the medullary canal two smaller cavities can be identified. Their inner surface is smooth and looks like the outside cover of some inclusion. In all probability this is a kind of

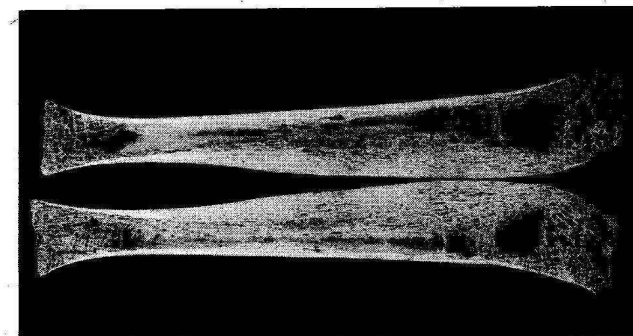


Figure 4. The sawn up tibia.

gummatous change of bones which is characteristic of syphilis. Their diameter is approximately of 1 cm.

Figure 5 illustrates the lamellar layering on a microscopic picture. The periosteum produced a new compact body of cortical bone lamina. This is two and a half times thicker than the normal one. Its structure is superficially outside but towards the medullary canal it

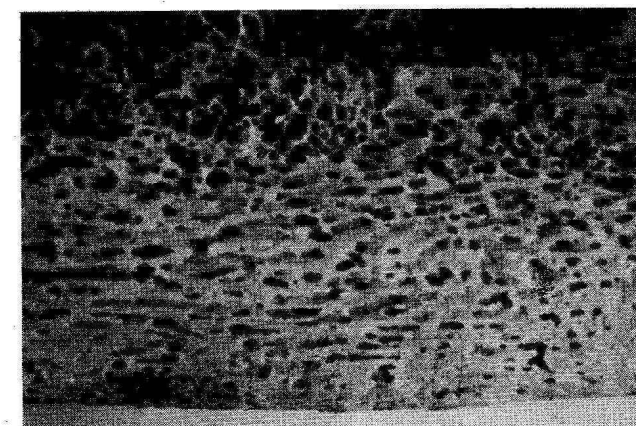


Figure 5. The lamellar layering on a microscopic picture.

is getting flimsier. On Figure 6 some spongyoid bone substance can be seen between the lamellae.

The distal end of the tibia can be seen on a microscopic picture (Figure 7). The epiphysis line is evidently wavy. This is another characteristic of congenital syphilis. Usually this line is very narrow and straight between the spongy parts of the long bone and the cartilage. In syphilitic infants it is very strongly changed. It becomes irregular and wavy, and about twice thicker than the normal one (Taylor 1875).

The X-ray photograph shows the complete tibia (Figure 8). This picture of the swollen syphilitic tibia is

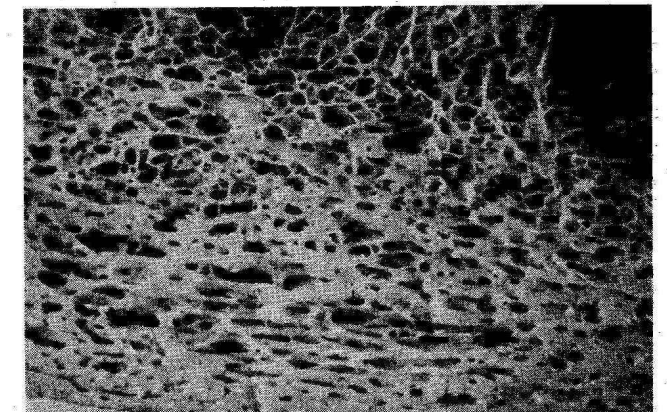


Figure 6. The lamellar layering on a microscopic picture.

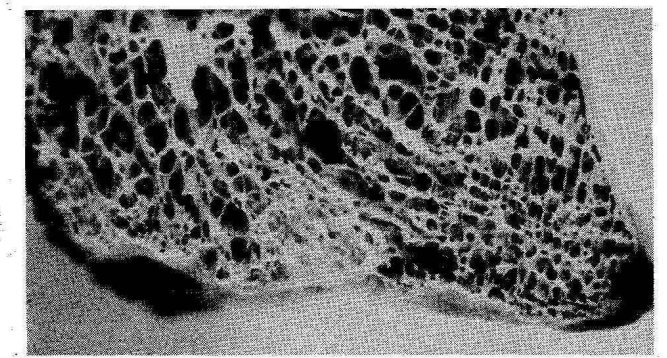


Figure 7. The distal end of the tibia.



Figure 8. The X-ray photograph of the tibiae.

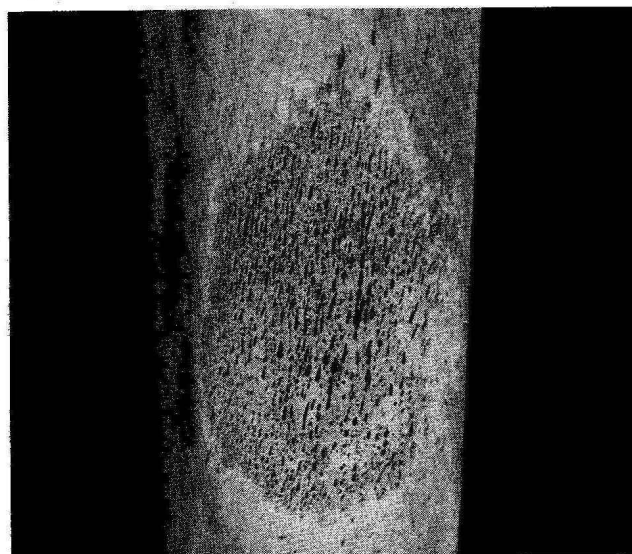


Figure 9. The macroscopic picture of the cribra.

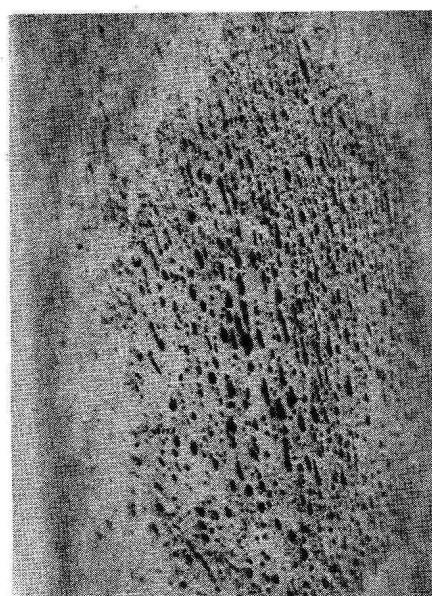


Figure 10. The macroscopic picture of the cribra.

typical (Frankel 1911). We can observe a shadow paralleling the cortex. The original cortex is thin and anomalous (Benneth 1971). At the distal end Harris-lines can be seen. On the surface of the left tibia a *cribra* can be noticed. The macroscopic and microscopic pictures are reproduced on Figures 9 and 10. This *cribra* in combination with *cribra orbitalia* and the Harris-lines indicate a poor diet and malnutrition (Józsa and Pap 1988).

No Hutchinson-tooth could be identified because incisors are unfortunately missing. Hutchinson (1909) described a malformation of teeth in congenital syphilis. He observed a crescentic notch in the middle of the edges on the upper central permanent incisors. Such teeth are smaller than the normal ones, they do not touch their neighbours on both sides. They are not flat but rounded, so called „dome-shaped teeth“.

However in our opinion we have sufficient other evidence to identify this find as congenital syphilis.

When we carried on the excavation during the summer, we found two other infants who probably had congenital syphilis. Shortage of time prevented us to carry out the analyses of these.

However at the systematic and detailed analyses of the cemetery as a whole we will have a chance to determine the ratio of congenital syphilis within the population of a Medieval community. Later it could be useful to compare this aspect of Szentkirály cemetery to other late Medieval cemeteries in Hungary.

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