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SLAVONIC BURIAL SITE AT OLOMOUC – NEMILANY (CZECH REPUBLIC). ANTHROPOLOGICAL AND PALEOPATHOLOGICAL ANALYSIS

ABSTRACT: In our research attention is paid to the standard anthropological and paleopathological analyses of the bone remains of 54 individuals (39 adult and 15 immature skeletons) dating to the 9th–10th centuries AD. These skeletons were found at the Slavonic burial site at Olomouc – Nemilany (Czech Republic). From the total number of all the pathological cases (N=39) 46% were degenerative changes of joints, metabolic and endocrine diseases made up 23%, congenital bone anomalies represented 10%, traumatic lesions made about 8% and inflammatory processes only 5%. The most important finding was the evidence of tumour metastases on one of the skeletons. This investigation includes also study of Slavonic funeral rites. Large majority of all individuals were placed to the grave pits in dorsal position. Skeletons with right lateral position, and particularly those with ventral position, significantly deviate from the above basic pattern. Also exceptional are graves with marks of secondary postmortal interference. There may be different reasons for such deviations, and one of the main reasons usually given in the case of Slavonic burial sites is vampirism.

KEY WORDS: Bone remains – Slavonic population – Paleopathology

INTRODUCTION

At present, Slavonic nations settle a large part of Europe, and make up about one third of its population. Although their origin and subsequent economic, linguistic, cultural and political development have been studied by specialists from many disciplines, unanswered questions in the history of the Slavs still abound. Detailed anthropological study of skeletons found during archaeological excavations is an important source of information on the life of Slavonic population. Czech anthropological literature includes a number of works reporting the results of studies into skeletal remains from Slavonic burial sites. In their vicinity, large single-layer cemeteries with skeleton graves were found. While a detailed anthropological analysis of the skeletons is contained in most of them, a marginal attention only is paid to the study of evidence of bone diseases. From this point of view, extensive sets of skeletal remains from e.g. Mikulčice (Stloukal, Vyhnánek 1976) or from Josefov (Hanáková, Stloukal 1966) constitute an exception. In the research into the osteological material from Olomouc – Nemilany, attention is paid to the standard anthropological processing, and mainly to the research into pathological changes in skeletons. We believe that a thorough paleopathological research may be quite important for a better understanding of the development of human populations.

The Olomouc – Nemilany study reported here is a part of a long-term comprehensive investigation programme of the Department of Medical Anthropology at the Anatomical Institute of the Medical Faculty, Masaryk University in Brno, into skeletal remains from different sites in Moravia and different historical periods. The main objective of the programme is to develop the most comprehensive possible

picture of Moravian populations in a chronological sequence over the history, and to describe their physical and health characteristics in relation with the climatic, nutritional, social and cultural conditions.

MATERIAL

Archaeological research of the Olomouc – Nemilany site took place in 1999. The size of the site, which was in two locations (located within 1 km from each other), was about 7.25 ha. The first location "Na kopci" (On the Hill) included a knoll and a part of a loess bank, the so-called Blatecko – Křelovský fault, the other location called "Kapitulní" is a small terrace extending from the railroad bridge at Nemilany to the town of Kožušany. A total of 178 dwelling structures dating back to different historical periods and two hitherto unknown skeletal burial sites were explored. One of them dates back to the late Eneolithic period, and the other (Slavonic site), described in this work, dates back to the 9th and the beginning of the 10th centuries.

Two types of rectangular grave pits were found at the explored Slavonic part of the site. One of them were pits with rounded corners, the other was characterized by the presence of some wooden structures remains. The graves from the Great Moravia period were filled with light and dark brown dusty loam, medium dense. In several cases, the structure of the filling material was different, similar in structure to black clay loam (Vitula 1999).

Skeletal remains of a total of 54 people were found in 58 graves. The degree of preservation of the skeletal material in grave pits was different: in dusty loam they were more preserved than in clay loam, where they were almost rotten. Almost all skeletal remains were situated in the W-E direction, and were in the supine posture. Lying in grave pits next to skeletons, weapons and everyday items were found. The weapons included mainly iron axes, spears and arrowheads. The most valuable finds included a sword, imported most probably from one of the Frankonian workshops in the Rhine area, and a sabre from probably the Transcarpathian basin, either from Hungary or Bulgaria. Besides weapons, the most characteristic grave goods were small knives, iron sickles, ceramic vessels and hoops from wooden buckets. Besides standard items from among everyday objects, decorations and jewellery, e.g. bronze and silver earrings, and many smallish beads of many colours, were found in some, particularly female, graves.

METHODS

The study of the skeletal remains from the Olomouc – Nemilany burial site drew on three main types of methods: one was a standard anthropological analysis of the entire set of skeletal remains using classical morphoscopic and anthropometric methods, the second was a detailed paleopathological examination of individual skeletons and the differential diagnostics of pathological changes on bones, and the third part of the study was a detailed anatomical analysis of body postures in relation to Slavonic funeral rites.

Criteria according to Borovanský (1936) and Čihák (1987) were used to determine the sex in adults, while a morphological analysis of the mandible according to Loth and Hennenberg (1996) was used in younger age groups. The works by Howells (1964), Phenice (1969), Černý (1971), Dokládal (1978) and Brůžek (1991) were the basis for the determination of the sex in the case of postcranial skeletons. No sexing was performed in the case of infant skeletons.

When determining the age at death, individual skeletons were classified into the following generally accepted age categories: Infans I (up to 6 years of age), Infans II (from 7 to 14 years), Juvenis (from 15 to 19 years), Adultus I (from 20 to 30 years), Adultus II (from 30 to 40 years), Maturus I (from 40 to 50 years), Maturus II (from 50 to 60 years), Senilis (over 60). In determining the age of children, we drew on data by Flecker (1932–1933), Borovanský *et al.* (1972), Stloukal and Hanáková (1978), Čihák (1987), Ubelaker (1987) and Florkowski and Kozlowski (1994). The age of foetuses was determined according to the results of research by Fazekas and Kósa (1978). The closing of the *sutura sphenooccipitalis* was taken as the basic age limit of adulthood. A more accurate determination of the age of adult individuals relied on models by Valloise (1937) in Rösing's modification (1977), Linc (1971), Szilvássy (1980), Vlček (1980), Lovejoy (1985) and Russell *et al.* (1993).

Whenever skeletons were sufficiently preserved, their metric and morphoscopic characteristics were evaluated according to standard principles by Martin, Saller (1957) and Knussmann (1988). The body heights of females and males were calculated according to the tables by Bach (1965) and Breitinger (1937), respectively.

Paleopathological findings were evaluated mainly according to the criteria by Brothwell (1972), Jaffe (1972), Steinbock (1976), Strouhal and Jungwirth (1980), Zimmermann and Kelley (1982), Ortner and Putschar (1985), Iscan and Kennedy (1989), Aufderheide and Rodríguez-Martín (1998). Paleopathological diagnostics relied mainly on a detailed macroscopic examination complemented, whenever indicated, by an X-ray examination (classical and CT), and a histological examination (under a light microscope or by the SEM). To reach a more accurate diagnosis of bone tuberculosis, one of the latest methods, the polymerase chain reaction (PCR) amplification of the Mycobacterium tuberculosis specific DNA, was used in cooperation with genetic specialists. For a detailed description of the method used, see Horváth *et al.* (1997).

The detailed morphological analysis of the position of individual bones of the skeletons found drew on the data reported in fundamental literature on anatomy and histology (Borovanský *et al*. 1972, Gray *et al.* 1973, Klika *et al.* 1985, Čihák 1987, 1988, Dokládal, Páč 1991). The anatomical

TABLE 1. Slavonic burial site at Olomouc – Nemilany.

Grave No.	Sex	Age	Body height	Cranial index
2	YF	Juvenis	161.5	81.4
3	F	Adultus II		
8	M	Adultus I		76.7
9	M	Maturus II	175.0	
10	M	Adultus II		74.5
11	F	Adultus I	157.0	73.4
12	M	Maturus I		
13	?	?		
14	M	Adultus I	170.5	79.2
15	YM	Juvenis		
16	C	Infans I (2–3years)		
17	F	Adultus I		74.0
18	F	Maturus II		
19	F	Maturus II	160.5	72.9
20	M	Adultus II		
21	M	Adultus II		
22	C	Infans I		
23	M	Adultus II	171.7	
	F	Adultus II		
24	M	Adultus I	173.1	76.7
25	M	Maturus I		72.6
26	C	Infans II (12–14years)		
27	F	Adultus II	154.8	79.5
28	C	Infans I (2–3years)		
29	?	Maturus I		
30	C	Infans I (6–8months)		
31	M	Adultus I		
32	C	Infans I (2–3years)		
33	C	Infans I (3–6months)		
34	C	Infans I (6–8months)		
37	F	Adultus I	158.5	74.2
39	foetus	7-months		
40	M	Adultus II	167.6	71.6
41	M?	Adultus I		
42	Y?	Juvenis		
43	F	Adultus I		
44	F	Adultus II	157.5	
45	?	?		
46	F	Adultus I	166.2	72.8
	C	Infans II (9–10years)		
47	?	Adultus I		
48	C	Infans I		
49	F	Maturus II	159.5	83.5
51	F	Maturus II		
52	?	Adultus I		
53	M	Adultus II	173.8	69.5
56	F	Maturus II	159.5	
57	F	Adultus II		
58	F	Adultus I	161.0	
59	M	Adultus II	170.0	78.0
61	?	?		
63	?	Adultus I		
64	?	Adultus I		

M = male, F = female, C = child, ? = sex indeterminable
YM = young male, YF = young female

sequence of individual bones of the skeletons was checked. The primary body posture was determined according to Černý (1995) as dorsal, ventral, left lateral, and right lateral positions. In the analysis of cadaverous transformations, the findings of Tesař (1968) were taken into account. When non-standard corpse postures were ascertained, Krumphanzlová's study (1964) on specific features of Slavonic funeral rites was used to evaluate the deviations.

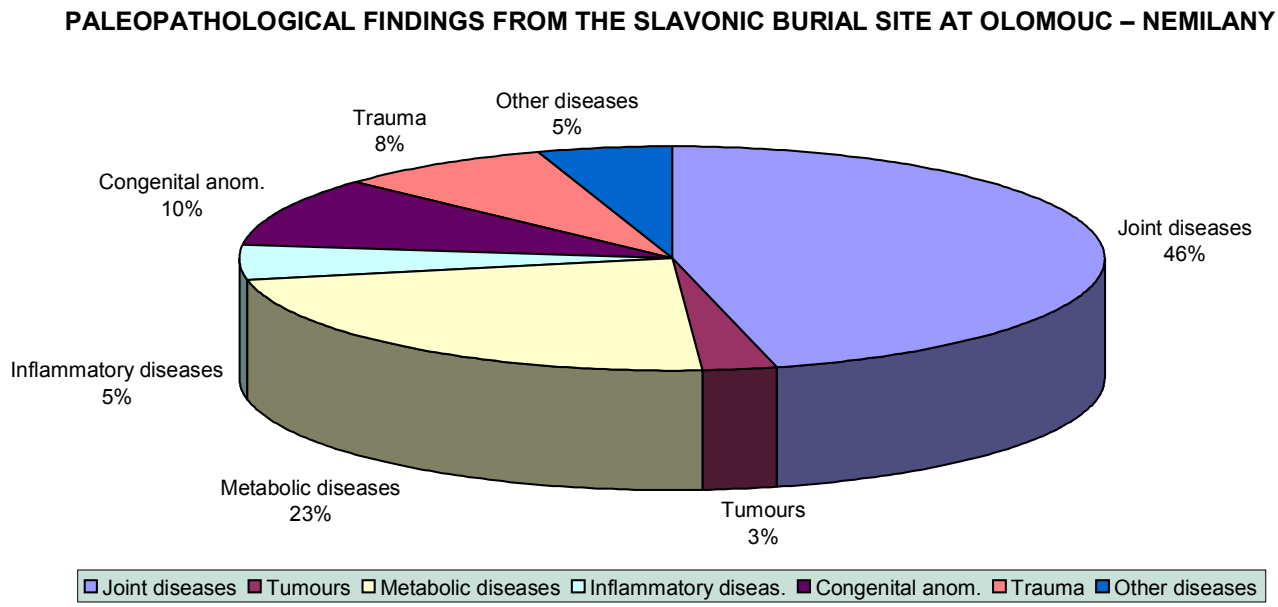

FIGURE 1. The share of defected pathological lesions in the total number of Olomouc – Nemilany skeletons with pathological changes. N = 39 (100%).

RESULTS AND DISCUSSION

From the very beginning of the basic anthropological analysis of skeletal remains from the Slavonic burial site at Olomouc – Nemilany, it was clear that an accurate statistical evaluation of the remains would not be possible because of the small total number of skeletons found and small numbers of skeletons in individual categories. The authors, however, deemed it necessary to make at least a general anthropological evaluation in order to ascertain the basic data on, and the main physical characteristics of, the local population. The evaluation of metric characteristics was limited to ascertaining the maximum and minimum values, and the calculation of averages. The frequency of morphoscopic characteristics is given in percentages.

Skeletal remains of a total of 54 people were found at the Slavonic burial site at Olomouc – Nemilany (*Table 1*). Of the 39 adult skeletons, 15 were male and 16 female skeletons. In 8 cases, a classical anthropological analysis did not make the determination of the sex possible. The set of skeletal remains also contained three skeletons of young individuals from the Juvenis category, and of 12 children. Nine of the children were from the Infans I age category (0–6 years), two from the Infans II category (7–14 years) and one skeleton was of about a 7-month old foetus, or an immature newborn.

Children skeletons (under 15 years of age) made up 22.2% of the total Olomouc – Nemilany set of skeletons. The babies that died at foetal stage, as newborns or infants before they were one year old, made up about 7.4% of the total of children's skeletal remains. Adult individuals of both sexes died most frequently in the fourth decade of their life (36.7%). The mean age of skeletons, calculated as a simple average of the age of all individual skeletons found at the site, was 27 years. The masculinity index, which gives the ratio between the male and the female skeletons in osteological sets, was 937.5. This figure is characteristic for a normally developing population and reveals the existence of a slight predominance of women over men.

Mean values of the Olomouc – Nemilany Slavonic skulls rank them among skulls that are mesocrane (of average length), orthocrane (of average height), metriometopic (with the front of average width), leptoprosopic (of narrow face) mesorrhine (with the nose of average width), mesoconch (with the orbit of an average height) and brachyuranic (with a very short maxillo-alveolar region).

Basic metric characteristics of skeletons should also include a reconstruction of the body height. With their mean height of 177.2 cm (according to Breitinger 1937), most of the Olomouc – Nemilany men were fairly tall, while women with their 166.0 cm of mean height (according to Bach 1965) were mostly medium tall.

The paleopathological examination of skeletal remains of the Olomouc – Nemilany Slavs revealed pathological changes on 39 skeletons (excluding dental pathologies). In their totality, they represented an average of several basic types of bone pathologies, such as congenital bone anomalies, traumas, diseases of the joints, and endocrine and haematogenic diseases and tumours (*Figure 1*).

The most frequent (46% of cases) were degenerative-productive changes in the form of vertebral spondylolysis and arthrosis of large joints of the limbs. In most of the cases, the disease was in its initial stages, usually in the form of minute erosions on articular surfaces and fine

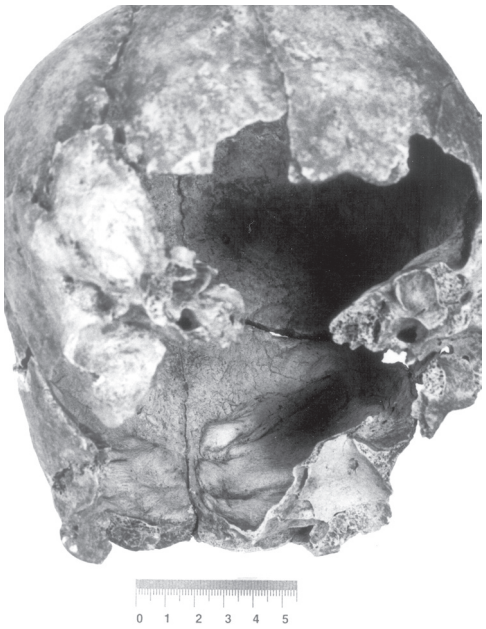

FIGURE 2. Irregular, smooth-surfaced bone masses on endocranial lamina of the frontal bone – *hyperostosis frontalis interna* (Grave No. 49, female, 50–60 years).

FIGURE 3. A synostotic block between the fifth and sixth thoracic vertebrae with unilateral retroarticular spondylolysis the left side (Grave No. 46, female, 20–30 years).

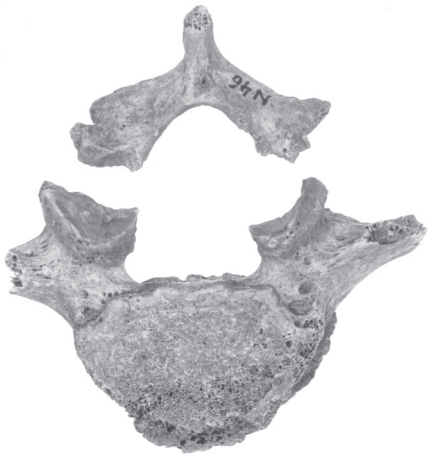

FIGURE 4. Bilateral spondylolysis of the 5th lumbar vertebra (Grave No. 46, female, 20–30 years).

FIGURE 5. The radiograph of the left male femur with incomplete fracture of proximal part of diaphysis (Grave No. 9, male, 50–60 years).

FIGURE 6. An oval inflammatory lesion on the proximal part of the left femur (Grave No. 59, male, 30–40 years).

osteophytic borders along their perimeter. No cases of extensive articular deformations or acquired vertebral ankylosis were found.

Twenty-three per cent of the cases were haematogenous, metabolic or endocrine diseases. A substantial part of findings belonging to this group of diseases were porotic changes of the orbital roof, generally referred to as the *cribra orbitalia*. The highest frequency of these changes was ascertained among children, where they were found

FIGURE 7. The fifth thoracic vertebra with a small oval inflammatory focus (Grave No. 11, female, 20–30 years).

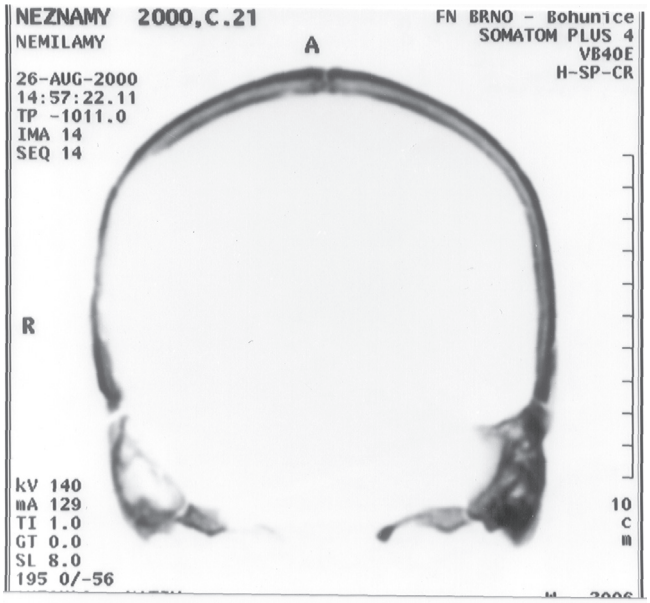

FIGURE 8. CT section of the skull showing a lot of various-sized lytic lesions (Grave No. 21, male, 30–40 years).

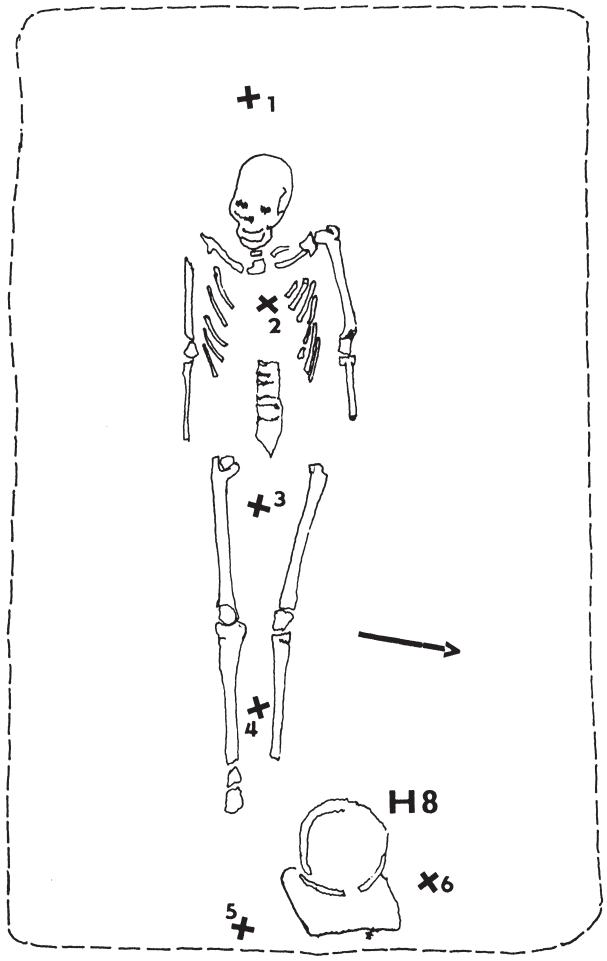

FIGURE 9. The case of typical position of the skeleton on the back – dorsal position (Grave No. 8, male, 20–25 years).

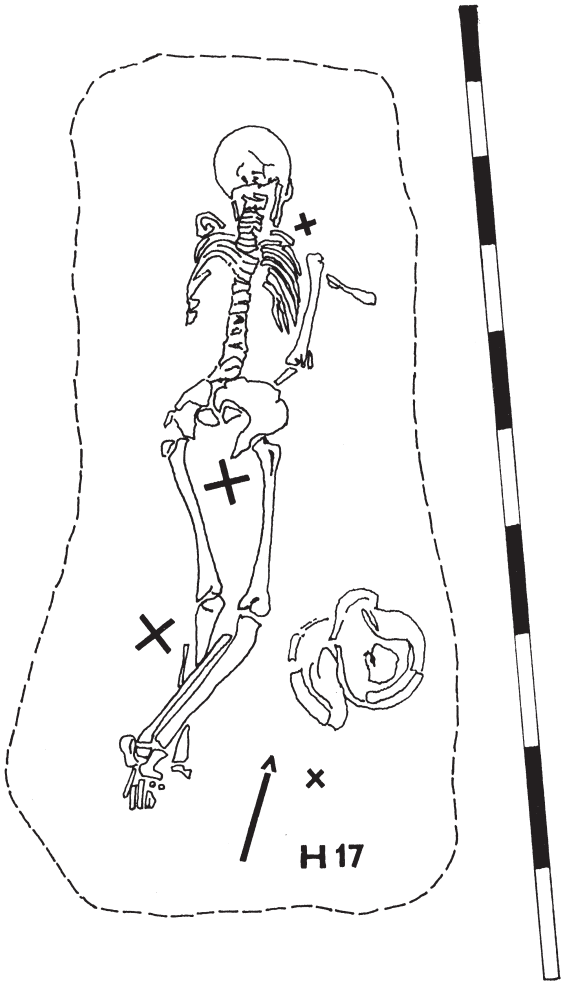

FIGURE 10. Female skeleton lying face down – ventral position (Grave No. 17, female, 20–30 years).

in half of the skulls, which is in line with results of comparable osteological studies. The porotic and the cribral types were equally represented. While *cribra orbitalia* was also found in more than half of the female skulls, it was ascertained in one male skull only. One of the most interesting findings in the group of endocrine diseases was the frontal internal hyperostosis on the skull of a 50 to 60-year old female, where massive growths were found on the internal surface of the frontal bone (*Figure 2*). The growths reach well out of the concavity of the endocranial surface and fill up a part of the frontal area. The tops of the growths are rounded and smooth, their surfaces scarred

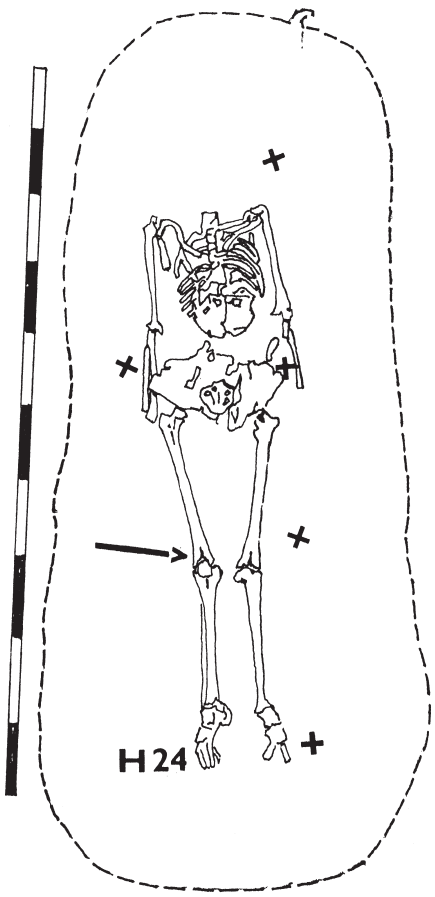

FIGURE 11. The skeleton of an adult man whose skull had been separated from the trunk (Grave No. 24, male, 20–30 years).

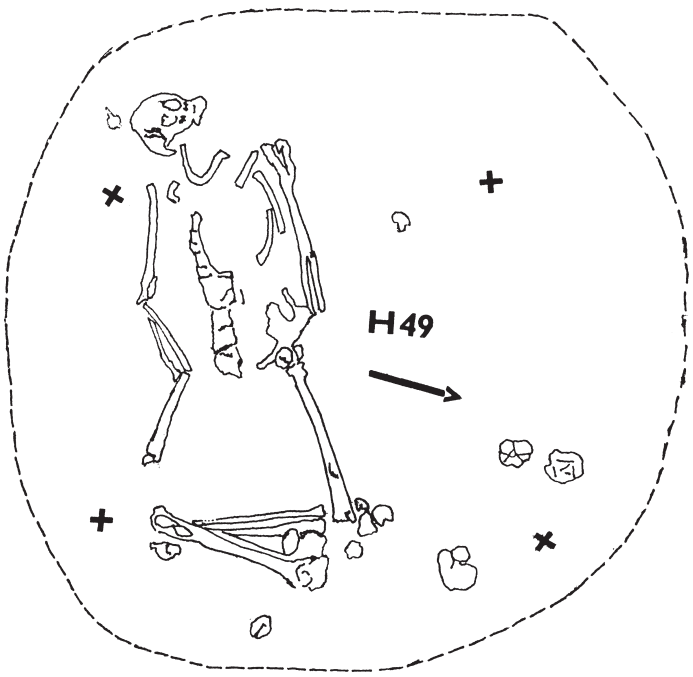

FIGURE 12. The female skeleton lying on the back, cross-legged (Grave No. 49, female, 50–60 years).

with deep transversal grooves that converge towards the central line into a deeper groove in the area of the *crista frontalis*. The lesion is located on the frontal bone only and does not extend beyond the *sutura coronalis*. The fracture surface shows a completely intact external lamina, a hypertrophic layer of spongious bone of irregular thickness covered with a thin continuous layer of the internal compact bone. The *hyperostosis cranialis interna* is usually considered a part of the Morgagni–Morel–Stewart syndrome, which is most probably caused by a defect in the production of hormones of the pituary gland, although detailed pathophysiological mechanisms remain unclear. External stigmas are reminiscent of polyglandular dysfunction. In addition to unbalanced gonadotropic activity, the disease is manifested by a number of other symptoms including food and drink intake disorders, and vasomotoric and other vegetative symptoms. The syndrome is usually manifested in women during or after menopause. Clinical symptoms include obesity, hirsutism on the chin and the upper lip, permanent headache, dizziness, hypogonadism, and psychosomatic problems from simple loss of memory to severe depressions. In the clinical setting, it is difficult to distinguish this syndrome from psychosis or brain tumours.

Congenital bone anomalies were ascertained in 10 per cent of the skeletal remains in Olomouc – Nemilany. Although minor deviations on skulls and postcranial skeletons were significantly more numerous, most of them may be classified as variations only. Only changes where functional impairment could be assumed were considered as true congenital anomalies. They included spinal findings, namely *spina bifida*, synostoses of vertebrae, spondylolysis of the vertebral arch, and spondylolistesis.

One of the most interesting cases of congenital bone anomalies was the skeleton of a 20–30-year old woman from Grave 46, where a synostotic block was found between the fifth and the sixth thoracic vertebrae. The two vertebrae are connected by vertebral arches and the right vertebral processes. The fusion is asymmetrical, with the spinous process of the fifth thoracic vertebra slightly off the median plane towards the left side. A radiogram showed a narrow gap remaining between opposite surfaces of vertebral bodies that corresponds to a narrowed intervertebral disk. The bodies of the vertebrae are normal in shape, and their front profile is unchanged. In addition to synostosis, the vertebral arch exhibited one more congenital abnormality: the left side of the vertebral arch of the more cranial of the vertebrae is not fused, and a narrow transversal slit is located immediately behind the *processus articularis inferior sinister*. The adjoining surfaces at the side of the defect are rather uneven and covered by a continuous compact bone layer. The overall diagnosis of this finding is unilateral retroarticular spondylolysis (*Figure 3*). Another case of spondylolysis

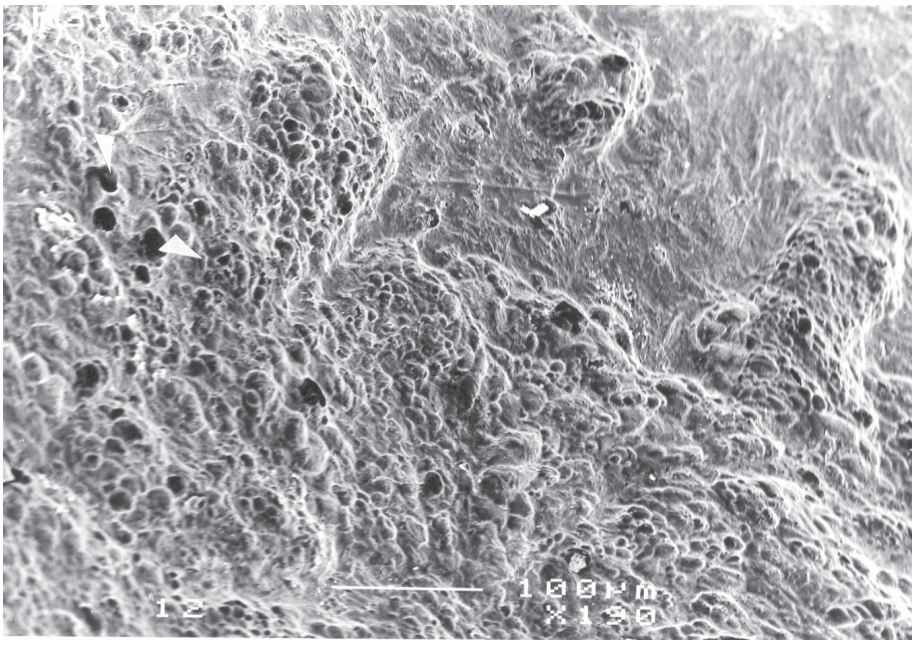

FIGURE 13. SEM: edge of a focus of destruction on occipital bone with lytic and plastic processes – 190× (Grave No. 21, male, 30–40 year).

was found on the lumbar section of the same backbone, in a typical location on the fifth lumbar vertebra (*Figure 4*). The lumbar arch was interrupted on both sides and the splits ran parallel between the superior and the inferior articular processes, completely dividing the vertebra into its ventral and dorsal parts. Where interrupted, vertebral arch edges were covered with a continuous layer of compact bone, and their surface was slightly uneven. Symptoms of degenerative changes were found on both the upper and lower terminal surfaces of the body of the vertebra. In shape, they resemble a large number of tiny cystic formations of an uneven surface, with a fine marginal ostheophytic border. The character and localisation of the degenerative process symptoms suggest that they are the result of the shift of the vertebral body affected in the ventral direction, which is referred to as spondylolisthesis. To summarize, the following congenital abnormalities were diagnosed on the backbone of the female from Grave 46: synostosis of the 5th and the 6th thoracic vertebrae, *spondylolysis retroarticularis unilateralis sinistra* of the 5th thoracic vertebra, *spondylolysis interarticularis bilateralis* and *spondylolisthesis* of the 5th lumbar vertebra.

Contrary to skeletal remains from the modern era (cf. Horáčková 1998, Horáčková, Benešová 1994), skeletal remains of Slavs from Olomouc – Nemilany showed relatively few traumatic lesions. Post-traumatic changes accounted there for only 8% of pathologies, and they were all caused by fractures. The fractures were all well healed and no signs of post-traumatic inflammations or arthroses were observed. This seems to suggest that Slavs were able to fix the fractures in certain ways. This is corroborated by only a small dislocation in the case of a fracture in the femur in one of the male skeletons (*Figure 5*). In this type of injuries, contractions of adductors may cause significant dislocation of fracture fragments, and their proper reduction is a tricky proposition even for contemporary physicians. This fracture was probably treated, or the patient stayed in bed for some time after the injury.

Also conspicuous was the small number of skeletons with traces of inflammatory processes, which were found in 5 per cent of cases only, all of which were chronic inflammations (*Figure 6*). No traces of acute suppurative osteomyelitis were found. They were mostly one or more locally demarcated inflammatory foci affecting mainly the periosteum. In one case only a specific inflammation, i.e. tuberculous spondylitis, was suspected. On the ventral side of a fragment of the body of the 5th thoracic vertebra of a young gracile female from Grave 11, a small oval inflammatory focus was ascertained with several centrally located tiny perforations of irregular size penetrating down to the spongiosis. The surface structure round the holes is rough and forms a slightly elevated rim along the lesion edge. Rough structure of bone surface, caused probably by mechanical irritation of the periosteum, is also clearly visible on the frontal surface of the body of the adjacent, i.e. the 6th thoracic, vertebra. Radiograms revealed tiny clear areas in the region of vertebral bodies. The PCR was used in an unsuccessful attempt to detect the DNA of *Mycobacterium tuberculosis* that would confirm the diagnosis of Pott's disease. Not even this modern genetic examination made an unambiguous diagnosis possible (*Figure 7*).

Neoplasias made up only 3 per cent of the diseases observed in the Olomouc – Nemilany skeletal remains, but they ranked among the most important findings. A very rare finding was the evidence of neoplastic metastases on the skeleton of a 30 to 40-year old man from Grave 21. His skull showed numerous osteolytic foci of different sizes, the largest of the osteolytic defects being on the *squama ossis occipitalis*, to the right of the median plane. In that area, the calvarium shows two small holes in the *lamina externa* of about 4 and 2 mm in diameter, respectively. Only

one larger osteolytic focus of irregular (circular to oval) shape was found there intracranially. The more extensive damage to the *lamina interna* and the diploe compared with the *lamina externa* suggests that the destructive process progressed from inside towards the surface. Edges of the lesion have minute indentation, and they are sharp without traces of a macroscopically detectable reparative process. Other foci of smaller sizes and similar characteristics were found on the *lamina externa* of the occipital bone squama, on the inside surface of the right *processus mastoideus*, and on parietal bones. In radiograms, more foci are visible, they are bigger in size, and their edges are not clearly delineated. CT sections also show very small discrete foci localized in the diploe only (*Figure 8*). Histological examinations of bone specimens from the edges of the lesions under the light microscope and the SEM demonstrated the presence of the osteolytic process but also, to a smaller extent, of the osteoplastic process (*Figure 13*). The changes on the skull can therefore be summarized as multiple foci of different types with a predominance of the osteolytic process, with a tendency to spread to the surrounding areas. The foci are of different sizes. This is characteristic of bone metastases of tumours transferring from soft tissues.

The results of an investigation into positions of skeletons at the Olomouc – Nemilany burial site showed that a large majority of all the deceased, irrespective of their age and sex, were placed to the grave pits in dorsal position, with the upper extremities lying loosely along the trunk, and the lower limbs extended and placed alongside each other (*Figure 9*). These findings are fully in compliance with data on Slavonic funeral rites described in literature (e.g. Eisner 1966).

Skeletons with right lateral position, and particularly those with ventral position, significantly deviate from the above basic pattern. Also exceptional are graves with marks of secondary postmortal interference. There may be different reasons for such deviations, and one of the main reasons usually given in the case of Slavonic burial sites is vampirism (Špaček 1971). Krumphanzlová (1964) characterizes vampirism as an ancient popular belief that the dead can return from the grave among the living to do harm. Popular means of anti-vampire defence were, among other things, placing corpses of vampire suspects in the ventral decubitus, face down, bound hands and feet, putting boulders on their trunk or nailing it to the bottom of the grave. Other methods included e.g. shooting arrows to the grave, transfixing the corpse with a stake, interfering with the corpses by force, mainly by severing the head from the body, additional burning of corpses, etc. With this in mind, the possibility of defensive anti-vampire measures had to be considered in investigating the Slavonic population from Olomouc – Nemilany. This was particularly true about Grave 17 (*Figure 10*), where the female skeleton lied face down, and the position of the lower limbs suggested that they had been tied together. Another interesting burial was found in the grave of a 20 to 30-year-old man (whom archaeologists nicknamed a headless archer), whose skull had been separated from the trunk and placed on the chest. Lying around the skull and the trunk were 10 iron arrowheads (*Figure 11*). This is a case we might argue for vampirism or a perimortal injury in a battle (although no traces of trauma were found on the skull, cervical vertebra or the ribs). A suspicion of vampirism may be entertained also in the case of skeletons in lateral position, although in those graves no other defensive measures were found. The greatest problem from both the archaeological and anthropological interpretation points of view was presented by Grave 49 (*Figure 12*). The female skeleton was lying on the back in the grave pit, with the lower limbs crossed (cross-legged). A large amount of spliced industry was around and under the skeleton. In this case, dating is particularly uncertain because it was not possible to conclusively determine whether the remains belonged to the Slavonic burial site or to eneolithic skeletons. Questions were also raised about the position of this skeleton's skull: in all likelihood, it was handled after the soft tissues had disintegrated.

CONCLUSION

Archaeological investigations were carried out in the second half of 1999 at the Olomouc – Nemilany site. Besides settlements from different historical periods, two skeleton burial sites were also uncovered there. Detailed medical and anthropological investigations were carried out in the bigger one, dating back to the Slavonic period (the 9th and 10th centuries AD).

In 58 graves, skeletal remains of a total of 54 individuals were found. Of the 39 adult skeletons, 15 belonged to men and 16 to women. In 8 cases, it was impossible to determine the sex. The age of most of the men (47%) and women (38%) when they died was between 30 and 40 and between 20 and 30, respectively.

The paleopathological examination of skeletal remains of the Olomouc – Nemilany Slavs revealed the presence of pathological changes on 39 skeletons (the figure does not include dental diseases). The most frequent (46% of cases) were degenerative-productive changes in the form of vertebral spondylolysis and arthrosis of large joints of the limbs. Haematogenic, metabolic and endocrine diseases, to which the authors included a case of *cribra orbitalia* and of frontal internal hyperostosis, made up 23 per cent of pathologies. Occurring in 10% of cases, congenital bone anomalies were localized exclusively on the spinal column. Compared with skeletal remains from modern times, the number of traumatic lesions in the present set was relatively small (only 8% of all pathologies). The number of skeletons with traces of an inflammatory process was also conspicuously low (5% only). The most valuable finding was the evidence of tumour metastases on one of the skeletons, because it represents a significant contribution to the collection of malignant metastatic tumours from the Old Slavic period.

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