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SOME STOMATOLOGICAL FINDS FROM VARIOUS ÚNĚTICE CULTURE BURIAL SITES IN MORAVIA

INTRODUCTION

In the final stages of the Late Stone Age we find in central Europe, in Bohemia and Moravia three completely different cultural groups. One of them is the Únětician group covering large areas of west Slovakia, Moravia, central and north-western Bohemia and central Germany. Its development began approximately in the 17th century B.C. and it disappeared at the beginning of the 14th and end of the 13th century B.C. The vast burial sites, especially in central Bohemia, reveal that the Únětice people preferred inhumation of this culture coming from several Moravian burial sites.

METHOD AND MATERIALS

We have examined 157 burials of adults with 1646 preserved permanent teeth and 22 burials of children. In this paper we shall deal with caries, its localization and extent, intravital losses of teeth — in adults only. We followed also the occurrance of orthodontic anomalies and other pathological phenomena of teeth in all the 172 burials. We considered as caries the current destruction of the crown, and also the small defects detected by the point of the probe, with the exception of evident artifacts. Listed with caries are also the roots in cases where it is obvious that they were not separated by accident or extensive abrasion.

The state of preservation of the teeth was determined by means of the indices by Brinche, Moller-Christensen and Strouhal in the following way:

1. The comparative dental index CDI representing the number of all the erupted teeth and intravital losses, divided by the number of all burials and multiplied by 32.

2. The comparative alveolar index CAI, which is the number of preserved alveoli divided by the sum total of the burials and by 32.

The intensity of caries is given by the sum total of the teeth afflicted with caries and of the number of intravitally lost teeth, expressed in %. The frequency of caries has been obtained from the sum total of the % of burials with at least 1 caries, % of burials with caries and intravital losses and % of burials with intravital losses only (1963).

RESULTS OF THE EXAMINATION

Caries in adults, i.e. in individuals with permanent teeth, was found in 38 individuals only, i.e. in 24.2 per cent. Out of these cases superficial caries represented 92.2 per cent, deep and superficial caries in 5.3 per cent, and deep caries in 2.5 per cent of individuals only. Out of the total number of 1646 preserved teeth only 59, i.e. 3.6 per cent were afflicted with caries and 153, i.e. 9.38 had been lost intra vitam. Altogether 212, i.e. 12.98 per cent of teeth can be regarded as afflicted with caries. Out of the superficial caries 33, i.e. 55.93 per cent occurred on the occlusal surface; 12 or 20.33 per cent were on the approximal surface, and 10, i.e. 16.94 per cent appeared on the neck of the teeth. 1 deep caries, i.e. 1.69 per cent were occlusive, 2, i.e. 3.38 per cent were on the approximal surface, and 1, i. e. 1.69 per cent on the neck of the tooth. Intravital losses of teeth have been discovered in 49 burials (30.6 per cent), with the total number of lost teeth reaching 153. The comparative dental index has reached the value of 0.57; and the comparative alveolar index is 0.54. The frequency of caries is 66.41 per cent and the intensity of caries 54 per cent.

The burials of children were caries-free. In the total number of examined burials orthodontic anomalies have been found in 53 burials (29.6 per

cent). In child burials, i.e. in individuals with mixed or deciduous teeth, the dental arches were wide with enough space for all the teeth, often appear tremata securing enough space for the widening teeth. In the permanent teeth the jaws were mostly wide with low palate and with sufficient space for the teeth. In five burials the dental arch was complete so that we could determine its width according to Pont's index indicating the width of the dental arch in the region of the first premolars P_1 and in the region of the first molars P_2 with regards to the width of the incisors. Mathematically we can express it like this:

$$P_1 = \frac{\text{sum total of the widths of the 4 upper incisors} \times 100}{80}$$

$$P_2 = \frac{\text{sum total of the widths of the 4 upper incisors} \times 100}{64}$$

The values obtained from the measured jaws have been compared with the values indicated by the positive tables and they varied between 0.5 to 6.0 mm. The gaps between teeth, another characteristic feature of sufficiently wide jaws, have been found in 15 burials, i.e. in 8.3 per cent of the followed assemblage. Diasthema appeared in 4 burials and trema not caused by abrasion, appeared in 12 burials.

In 9 burials (in 5 per cent) we found compression accompanied by pressing the teeth into the arch.

Irregularities in the position of teeth appeared in 43 burials (24 per cent). Most frequent were rotations (33 burials), inclinations (13 burials), anomalous eruption (8 burials), retrusion (6 burials) and supraocclusion (3 burials). Irregularities of interjaw relations were found in 6 burials (3.3 per cent). Distooclusion appeared in 3 burials, mesiocclusion in 2 burials and 1 cross-bite caused by the compression of the upper jaw and deviation of the lawer jaw was found.

Other pathological dental phenomena were found in 9 burials (5 per cent) of the examined assemblage. There was hypoplasy of the enamel in 1 burial ostitic foci in 3 burials, cysts in 3 burials and tartar in 2 burials.

DISCUSSION

The examined assemblage of burials come from various Únětice culture sites in the South Moravian Region, e.g. from Horní Dunajovice, Podolí, Modřice, Vyškov, Rebešovice, Bedřichovice, Tavíkovice, Velké Hostěrádky, etc. But the number of burials suitable for stomatological examination was relatively low to enable us to draw statistical conclusions from the individual sites. We gathered therefore all the Únětice finds from the South Moravian Region, considering them as a whole. Since it was impossible to determine the age and sex of all the burials, these characters have been omitted. Our results show that the Únětice population had relatively healthy teeth. On evaluating the caries there is a problem with considering the third missing molars. Thus the intravital losses reach very high values — without X-raying it is very hard to say whether these teeth were retained or missing at all. It was therefore more suitable not to consider the third molars at all. This of course decreases the number of examined teeth. Other problem is connected with the definition of inter-jaw relations, which is possible only in case of preserved upper and lower jaws. Their mutual relations then can be easily determined according to the articulation and abrasion of the occlusal surfaces.

As far as dentition anomalies are concerned the examined assemblage differs from the present-day population not only in quantity, but also in quality. The present-day population suffers with a comparatively high percentage of inter-jaw anomalies. Andrik has found 41.7 per cent of anomalies in the children in the surroundings of Bratislava. It emerges from the literature following these anomalies that earlier these orthodontic anomalies were unique and isolated and in the course of the phylogenetic development their quantity was growing and their quality was also changing. Most authors hold that the earliest anomalies are those in the position of the individual teeth. They occur also in ancient populations and animals. The hereditary anomalies (progeny and anomalies in occlusion) arose according to Andrik in the 10th—12th centuries A.D. In the recent centuries the number of anomalies has been conspicuously increasing — due to the changing function, reduction of the jaw bones (e.g. compression, deep distorted occlusion, distoocclusion) and chiefly anomalies caused by external factors (e.g. caries, bad habits, etc.).

CONCLUSION

From the total number of preserved permanent teeth 12.78 per cent had caries or were lost premortem. It follows that only 59, i.e. 3.6 per cent had caries. The individual caries rate in adults was 24.2 % and in individuals with mixed or deciduous teeth there were no caries. Orthodontic anomalies appear in 29.6 per cent of burials. The results of the examination reveal that the studied population had comparatively healthy teeth and that the Únětician people had qualitatively different orthodontic anomalies, compared with the present-day population.

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