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A NEW FIND OF AMPUTATED LIMB IN OLD SLAVONIC SKELETAL MATERIALS

ABSTRACT — *The skeleton from grave No. 138 (male of 40—50 years) from the Great Moravian burial site in Prušánky (9th century) has the right tibia and fibula amputated at the distal third of the diaphysis. The amputation stubs had healed, documenting that the individual had survived the operation, for a few months at least. The cause for the amputation is unknown.*

KEY WORDS: *Limb amputation — Healed injury — Great Moravian skeletal material.*

Ancient literary sources often mention cases of limb amputation; the limbs were cut off usually in fight or imposed as punishment. Nevertheless in skeletal materials of archaeological origin healed or non-healed amputations are very rare. Steinbock (1976) in his monograph mentions only 8 such published cases (including one from Mikulčice). From the skeletal materials found in the territory of Czechoslovakia we know more cases of this type (Hanáková and Vyhnánek 1981). The earliest report on a find of an amputated limb in this country was presented by Friedel (1921). Following the above-mentioned Mikulčice find another find was discovered at the same locality (Stloukal and Vyhnánek 1978), and a third and up to now not yet published find from Rajhrad.

We should underline that in all these cases we have to do with Slavonic early medieval skeletal materials and they all show special features, giving them the character of special case reports. The

interesting find of Friedel (Friedel 1921, Hůrka u Plzně), 12th century, is interpreted as a construction sacrifice with his left arm and right leg cut off. A similar crosswise amputation — in contrast to the former case a healed one — has been ascertained also on the skeleton in grave No. 78/VI from Mikulčice (9th century); there the right arm and left leg have been cut off (Vyhnánek et al. 1986). In other skeleton from Mikulčice (grave No. 1035) the left leg was amputated and the stub was healed (Stloukal and Vyhnánek 1978), however, close to this skeleton there was discovered also a buried left foot together with the distal stubs of lower leg bones. Although it appeared that the foot did not belong to the above skeleton, it is a rather interesting coincidence. The skeletal material from Rajhrad (grave No. 56, a male of 40—50 years) from the 9 century A. D. shows the situation following the healed amputation of both arms up to the distal third of the radius and ulna.

To the above group of skeletons we can add now also the find of skeleton from grave No. 138 from the Great Moravian burial site in Prušánky (9th century A. D.). The skeleton belonged to a male of 40—50 years, with his right leg amputated at the

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distal end of the two lower leg bones. The tibia and fibula had been severed almost transversally at the same level, above the ankle joint; compared with the lower leg bones on the left, tibia is 45 mm shorter and fibula 61 mm shorter. The amputation ends of both bones are rounded off and their surface has been partially damaged postmortally. Nevertheless, we can see that the surface of amputation was covered by newly formed compact bone. At the level of amputation arose typical ossifications on both bones, on the fibula they are represented by a massive wall protruding towards the tibia. On the side adjoining the tibia arose a shallow concave surface of 1 cm in diameter. The process at the fibular edge of the distal end of the tibia fits well into the above cavity. The skiagrams of the lower bones of the leg with the amputation (*Fig. 1*) do not show any characters of other changes than those resulting from the reparative process in connection with the state following the amputation. Neither the morphological, nor the X-ray examination of the left leg revealed any pathological changes.

The find can be regarded as to be the state after the amputation of the distal parts of the lower bones of the limb, with well visible traces of healing on both amputation stubs, indicating that the affected man survived the amputation for at least several months. The cause of the amputation is not clear from the skeleton find.

The causes of limb amputations in the finds of archaeological skeletons can be divided into several groups.

The first group is formed by *amputations resulting from battle injuries*. These "amputations" were realized with weapons provided with long cutting edges and as a rule occurred on a single limb only. It can be supposed that the limb in this group of injuries was cut off at a single stroke and thus on the bones in the vicinity of the amputation surface there were no other traces of cut wounds. Mentions of amputations in consequence of injuries inflicted in a battle appear in the oldest written records (Thomson 1952), and in most cases the upperlimbs were affected.

The second group is formed by *therapeutical amputations*. They usually followed a disease of the limb considered incurable (including freezing) or following a devastating injury of the limb. These types of amputation were practiced by ancient Egyptians (Brothwell and Moller-Christensen 1963), but also by ancient Indians (Wondrák 1961). Susman (1967) mentions descriptions of such operations in the Talmud; Moser (1977) holds that the amputation of the upper limb of a Hallstattian skeleton is also of therapeutical origin.

Amputation of limbs by way of punishment as a deterrent example was known already in the ancient times. It seems that the oldest written source mentioning this type of an amputation is the Law Code issued by Hammurabi around the year 2000 B.C. (Wondrák 1961); this was also the punishment of surgeons in case of unsuccessful operations. In Europe the amputation of limbs as punishment was practiced up to the 17th century

(Brothwell and Möller-Christensen 1963); in some countries the amputation of arms survived up to these days.

Characteristic punishment still appearing in the skeletal materials was the so-called crosswise amputation, i.e. cutting off the hand on one side, and the leg on the other one. A typical find belonging to this group of double amputations is the skeleton from grave No. 78/VI in Mikulčice (9th century A.D.), (Vyhnanek et al. 1966). The right hand and the left leg were amputated, so that the affected person was unable to hold a sword or to mount a horse

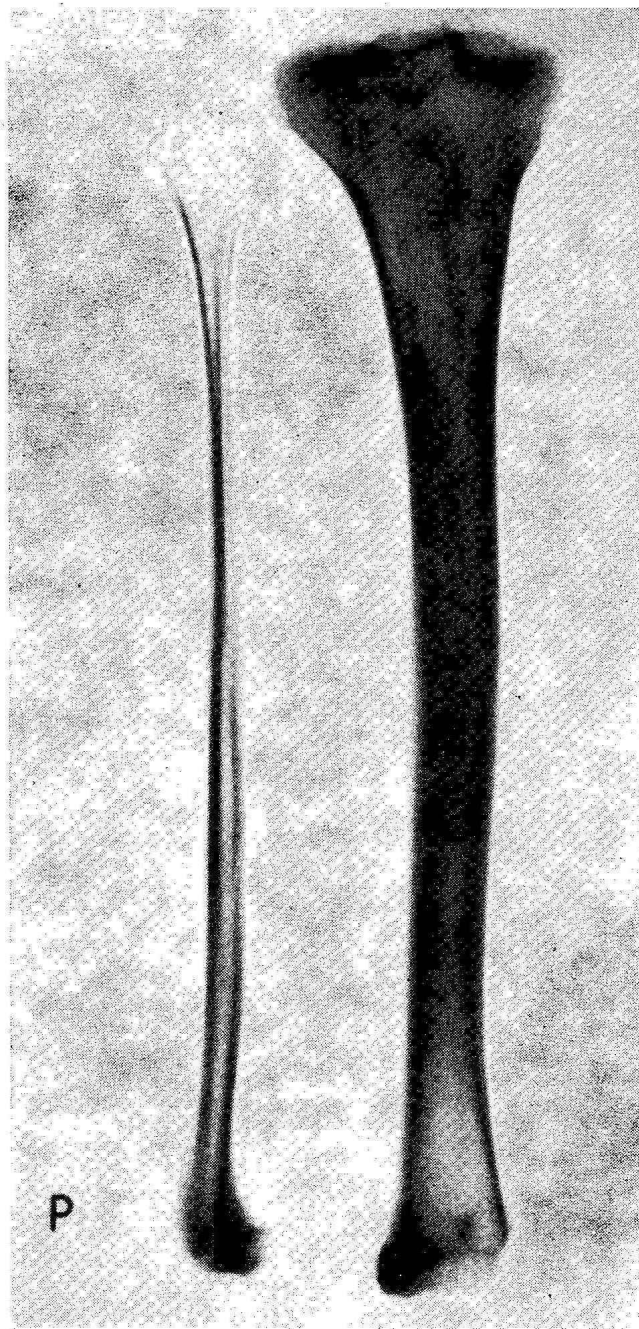


FIGURE 1. The radiograph of the tibia and fibula from the Grave No. 138 from Prušánky, 9th century A. D. The amputation of the lower ends of both bones is evident. The amputation ends are rounded off and covered by newly formed bone tissue.

any more. Brothwell and Moller-Christensen (1963) explain in the same way also their find from Tean Island (8th century); in this case the amputation affected the left hand and right leg. The skeletal find from Hůrka u Plzně (Friedel 1921) too has amputated its left hand and right leg. The fact the latter was an intentional amputation can be documented by further traces of cuts on the stubs of bones, described by the finder.

Amputations in order to determine the number of prisoners of war are documented in Ancient Egypt; according to Brothwell and Moller-Christensen this custom had been introduced by the 19th dynasty. Absence of counting the cut off hands is pictured by a well-preserved relief on the wall of a temple in Medinet Habu near Luxor, from the period around 1200 B.C. Only one hand of the prisoner was amputated without the intention to kill him.

Postmortal ritual amputation is described by Herodotos. It was practiced by the Scythians as a sacrifice to Ares, the God of War. In the postmortal ritual always the right arm was cut off (see Herodotos' 4th book of history Melpomené).

The absolute majority of amputations — no matter whether healed or not — occurred to males. The hitherto only exception are the finds of Slavonic skeletal materials from Kéropusztá (11th cent. A.D.) published by Nemeskéri et al. (1953). The group comprises the skeletons of 3 females and of a child, all of them with amputated upper limbs.

From the differential-diagnostic viewpoint the postamputation states do not represent any serious problem. In the non-healed amputations the smooth surface at the place where the bone was interrupted shows beyond a shadow of doubt that they are intentional amputations. In healed amputations the origin

of the mutilations usually is also evident. In some cases they can be mistaken for pseudoarthrosis if the distal fragment of the fracture is missing.

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