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HUMAN REMAINS FROM THE STONE-CIST GRAVES OF REBALA LASTEKANGRUD, NORTH ESTONIA

This paper presents the results of analysis of the human osteological remains from five prehistoric stone-cist graves located at Rebala, North Estonia. A total of 24 inhumations were assessed from the graves and a demographic analysis shows a high occurrence of infants and young adults. Referring to photographs taken during excavations, it was apparent that the skeletons of two adults had been rearranged and some bones had been switched. Pathological evidence shows a high rate of spinal joint disease and evidence of iron deficiency. Additionally, a deep cutmark on an adult femur provides evidence of either ritual defleshing or a brutal attack.

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Introduction

The following paper deals with the analysis of human remains from five late Bronze and early pre-Roman Iron Age stone-cist graves located at Rebala (see Fig. 1, Lastekangrud), that were excavated in 1982 by Vello Lõugas. Lõugas (1983) notes that there were six graves altogether, but the sixth had been totally destroyed and, thus, no osteological material was present from this grave. Also, only the cists and the uppermost layers have been completely excavated, except for grave 5. Thus, it is possible that there are still some unexcavated bodies located outside of the central cists.

Most bones belong to inhumation burials, although some cremated material was also present. Many bones were fragmented, but they have preserved quite well over time and show very few signs of erosion. It was obvious upon inspection, that in many cases, the amount of material recovered from the graves was far less than expected, given the number of individuals represented in each grave. Considering the well-preserved skeletal material, post-mortem decay cannot explain this phenomenon. The reason is either ritual removal of skeletal parts, or the material has been lost since the time of excavation.

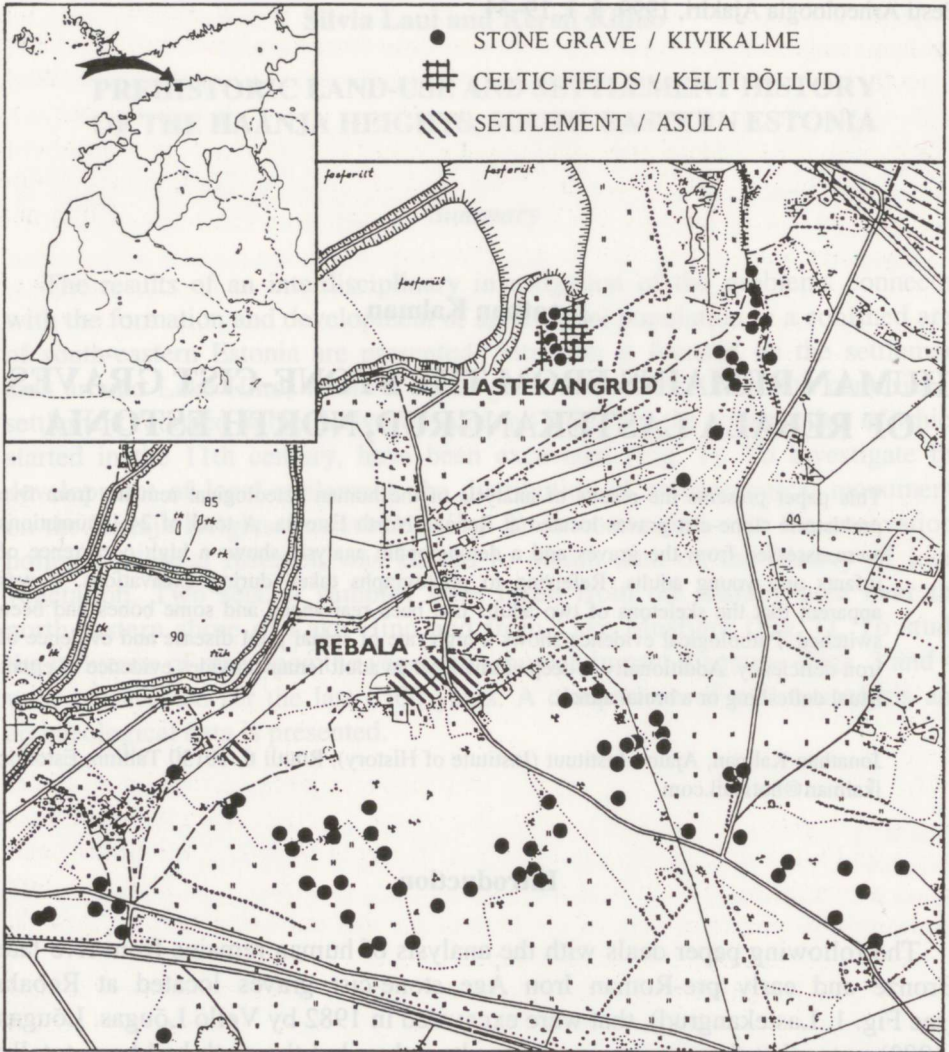


Fig. 1. Location of Rebala stone-cist graves.

Joon. 1. Rebala kalmete asendiplaan.

Methods

Biological sex was determined by the fact that adult male and female skeletons differ both in general shape and size. The shape of the pelvic girdle, cranial morphology and metric analysis (e.g. maximum diameter of the head of the humerus and femur), were the three areas used in this study (see Bass 1987, Krogman & Iscan 1986).

Age at death was estimated from the development and degeneration of the skeleton and teeth. The following techniques were employed. For subadults: long bone lengths (Ubelaker 1987), dental eruption and development (van Beek 1983), and epiphyseal union (Krogman & Iscan 1986). For adults: dental attrition (Brothwell 1981), dental root transparency (Gustafson 1950), pubic symphyses (Katz and Suchey 1986), sternal rib ends (Iscan & Loth 1986), cranial suture closure (Meindl & Lovejoy 1985), auricular surface (Lovejoy *et al.* 1985) and degenerative joint diseases (Buikstra & Ubelaker 1994).

As many techniques as possible were applied, with an average age-range supplied. In some cases, though, it was only possible to say that a person was either an adult or subadult

Results

The cist of grave 1 contained six individuals: two young adults (17–20 year old male, and a 23–25 year old female), and four subadults aged 5–7, 4–6, ~1, and less than 1 years old. All skeletons are relatively complete except that the cranium and mandible of the adult female are absent. Some of the teeth are present, though, indicating that the skull was present at one time in the grave.

The cist of grave 2 contained evidence of three inhumations, and several peculiarities about the arrangement of the bones were noticed. The first skeleton belongs to a young adult male, who died at around 18–22 years of age and stood about 172 cm tall in life. A photograph, taken during excavations (Lõugas 1983, left half of plate VI: 2), shows the well preserved skeleton with his head to the north and his body extending to the southern end of the cist. Even in his young age, osteoarthritis in both hips and degenerative changes in his spinal column (schmorl's nodes were noticed on three of his thoracic vertebrae), suggest that from an early age he participated in repetitive and strenuous work.

To the skeleton's right are traces of a second burial, but only half of the skull, a complete mandible and the lower limbs were present. Interestingly, though, parts of the two skeletons have been mixed. That is, the almost complete skull shown in the photograph does not belong to the body that extends below it. The skull, with its advanced suture closure, belongs to a man in his forties, while the post-cranial bones and the mandible are from the 18–22 year old man (as indicated by newly erupted 3rd molars, partial union of the humeral heads, and incomplete fusion of the superior and inferior surfaces of the vertebral bodies). The half skull to the left, with its wide-open sutures, indicating a young adult, belongs to the skeleton. Another peculiarity concerns the lower limbs (see Lõugas 1983, right half of plate VI: 2). The picture is of the southern half of the cist and two sets of legs can clearly be seen. The set of bones to the left is from the young male, but they are arranged so that the right leg is on the left side of the body and the left leg is on the right. Also note that for the second set of legs, on the right, the left tibia (shin bone) is absent. The tibia is the second largest

bone in the human body, and quite compact. Its absence cannot be explained by post-depositional erosion, and neither can the complete absence of the pelvis, vertebral column, arms and half of the skull of the second skeleton.

The third skeleton belongs to a 1–2 year old child and was reported to be situated under the arm of the young man (Lõugas 1983).

The cist of grave 3 housed the remains of two one-year old children and an elderly woman. The woman can be a minimum of 50 years old, but she is likely much older still, and her skeleton clearly shows the effects of her advanced age. All of her upper teeth have been lost in life and the teeth sockets have all remodeled; the same is true for her lower molars. Her limb bones are extremely light and fragile, and this is probably the result of osteoporosis – a metabolic disease causing loss of bone mass, and is often correlated with post-menopausal woman (Woolf & St John Dixon 1988). She also displays arthritis of the right elbow, shoulder, and in her upper spine, which would have all caused pain and stiffness.

Both children show evidence of iron deficiency anaemia – a deficiency in iron caused by an iron-deficient diet, excessive blood loss or infectious disease (Stuart-Macadam 1992). The first case displays only porotic lesions in the left eye orbit (cribra orbitalia), while the other child had a much severer infliction – both orbits display lesions and much of the skull vault shows large lesions as a result (Fig. 2). In both individuals the lesions are still active, indicating that they had not adapted to the disease at the time of death.

In the upper layer, five additional teeth were present and part of an adult's maxilla. Approximately 600 grams of cremated bone also lay in the upper layer, and likely represent burials from a later period.

The cist of grave 4 contained the burials of four young adults of approximately the same age: two males aged 16–18 years, an 18–20 year old female, and another female aged 16–20. The individuals were assessed from the presence of four separate mandibles with associated dentition. However, only the remains of three post-cranial skeletons were present, and the only indications of the fourth body were a few extra foot bones, leaving us to wonder where the fourth body is? Additionally, only 90 grams of cranial remains were present, which represents a mere fraction of the several thousand grams expected from four individuals. It is possible that the missing cranial remains have been lost since excavations, since other cranial remains from this site have previously been analyzed and stored in separate places. The missing fourth body is not so easily explained though. This clearly demonstrates the need for better data collection during excavations of human remains, where photographs of bodies are taken before the bones are removed and stored. Without these pictures we have lost much information about the arrangement of body parts that was demonstrated in cist 2, for example.

Another need for more accurately documenting and storing human remains is also obvious when we consider the evidence for pathological lesions on several

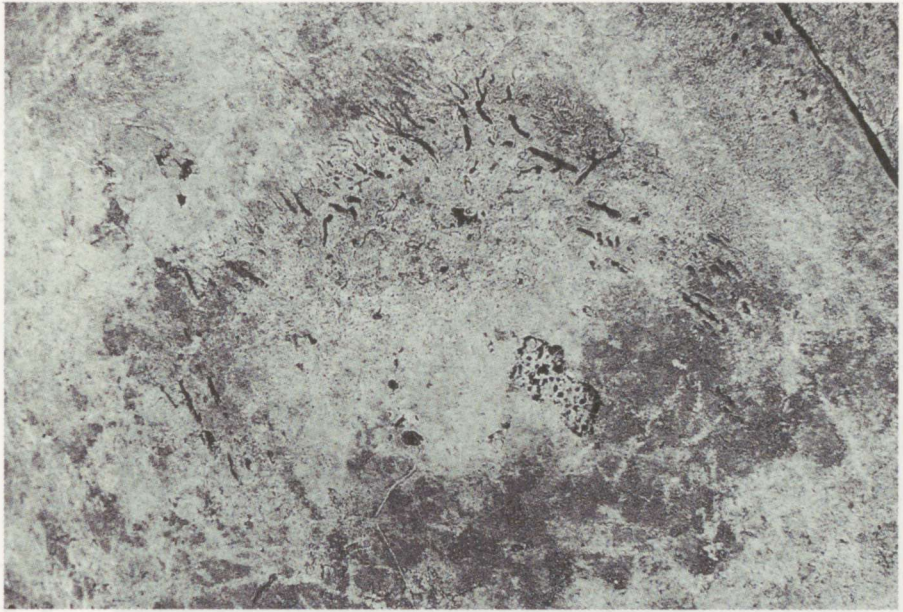


Fig. 2. Porotic hyperostosis on the cranial vault of a one-year-old child.

Joon. 2. Hüperostoos üheaastase lapse koljuvõlvil.

bone fragments from this cist. Various bones show evidence of extensive infection including a left and right fibula, a left and right radius, a left ulna, 15 rib fragments and several hand and foot bones. The problem with assessing the pathological lesions is that it is not clear if the affected bones are all from the same person or if multiple people are infected. Since the diagnosis of specific infections relies on the overall patterning of lesions on the skeleton, it is not possible to offer a cause for the infection. This would not be the case if the remains had been well documented, including photographed, before the removal from the grave, or if separate individuals were placed in separate boxes when removed from the grave.

The infected bones are covered in thick plaques of new bone formation (see Fig. 3) that were still active at the time of death, indicating that the disease had not been overcome, and perhaps ultimately led to death. The lesions on the visceral surface of the ribs show that infection had spread to the lungs.

A deep cutmark is also present on the shaft of a left femur (Fig. 4), and appears as a grooved mark, approximately 18 mm long and 0.8 mm in width. It runs transversely across the medial/anterior surface of the bone. The color of the groove is consistent with the rest of the bone and implies that the cut is not recent (i.e. it did not occur during excavation). There is no evidence of healing, indicating that the lesion occurred peri-mortem. The groove is straight and 'V' shaped in cross-section, showing that it is purposeful and caused by a bladed



Fig. 3. New bone formation as a result of chronic infection. From left to right: metatarsal, metacarpal, visceral surface of rib and radius.
 Joon 3. Kroonilise infektsiooni tulemusel tekkinud luumuundused. Vasakult paremale: põea(laba)luu, kämbialuu, roide sisepind ja koodarluu.

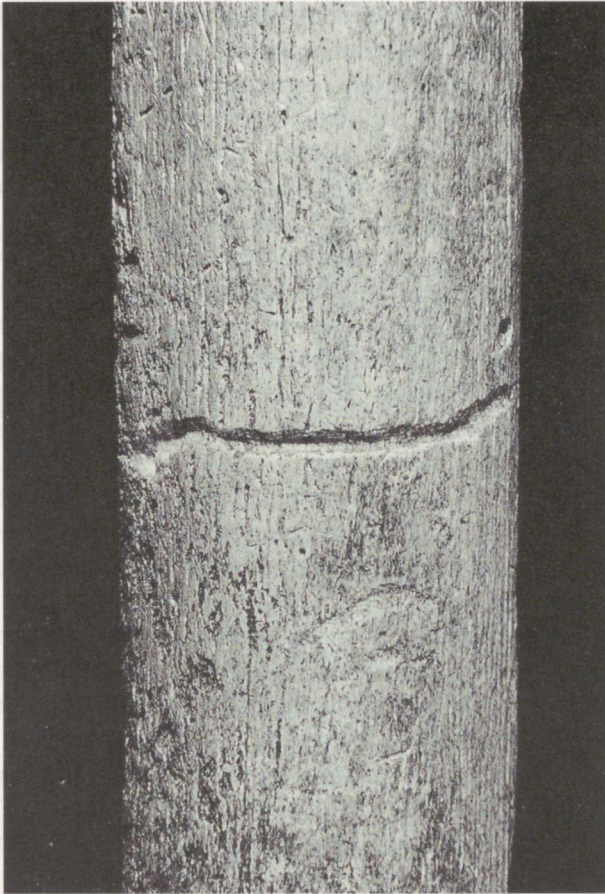


Fig. 4. Cutmark across the medial/anterior surface of the shaft of left femur.

Joon. 4. Lõikejalg reieluu keskosa eesmisel pinnal.

instrument. If the body was fleshed and the person was alive before the assault, then the cut would have severed the femoral artery, great saphenous vein and the powerful adductor muscles of the femur, leading very quickly to death from blood loss. The wound appears to represent a vicious attack while the person lived, or it is evidence of defleshing soon after the person's death.

The cist of grave 5 contained the most individuals and the largest amount of cremated bone. Grave 5 is the only grave that has been completely excavated and burials were found within the central cist as well as the adjacent areas. Inside the cist, seven people could be identified from their mandibles (50+ year old adult, 25–35 male, 25–30 female, 17–22 young adult, and a 2 year old child), and an additional two infants from their post-cranial bones (less than 1 and ~1 year old). The amount of post-cranial skeletal material again does not correspond to four adults and three children. Also, the amount of cranial pieces is enough for only

about one adult. The cranial pieces show evidence of extensive suture closure, indicating that they belong to the elderly person.

Infection also affected at least one person and was active at death, as seen by new bone formation coating several tibia fragments.

Many fragments were also discovered outside the cist, but no complete skeletons could be reconstructed. However, it is interesting to note that several teeth and a fragment of cranial vault articulate with the remains of the old person from the cist. Unfortunately maps made of the skeletal finds cannot be found and it is impossible to say how far from their adjoining parts they were. All remains came from the deep layers of the grave and how some parts found their way from the cist to the external area (or *vice versa*) is mysterious and perhaps hints at post-mortem moving of body parts. This is a phenomenon that has been noted at several other graves and indeed could also be responsible for some of the missing skeletal parts at this grave.

From the presence of two more mandible fragments, it was possible to state that at least two more adults were buried in this outer area. All other fragments might belong to these two people, or alternatively they may be the missing parts from the burials within the cist.

Within the uppermost layer of the cist, approximately 980 grams of cremated bone was recovered, while approximately 2600 grams of cremated bone was recovered from the upper layer outside of the central cist. The burned fragments are similar in appearance to those from cist 3, displaying a range of colors from blue to white – which generally indicates exposure for a minimum of 2 hours in temperatures reaching 645–940 °C (Shipman *et al.* 1984). The fragments are quite small and indicate that after cremation the bones were probably crushed before burial.

Discussion

A total of 22 inhumation burials occupied the five investigated cists, and an additional two adults were located in the area surrounding cist 5. Table 1 summarizes the results from each grave, while Figure 5 displays the age at death distribution for Rebala.

The lack of older individuals gives an average life expectancy at birth of about 15 years, which is considerably less than the 20–25 years seen in most graves at this time. Men and woman appear to be equally represented, both in their relative number and in their age distribution.

From Figure 5 we can see that deaths during early childhood (0–5 years) and young adulthood (15–30 years) dominate. The relatively high percentage of deaths in early childhood is not unusual, and it is likely that respiratory infections and gastroenteritis were the chief causes of infant death in antiquity (Roberts & Manchester 1995, 24). The relatively high proportion of deaths for young adults is, however, unusual. An inordinate amount of deaths in this age

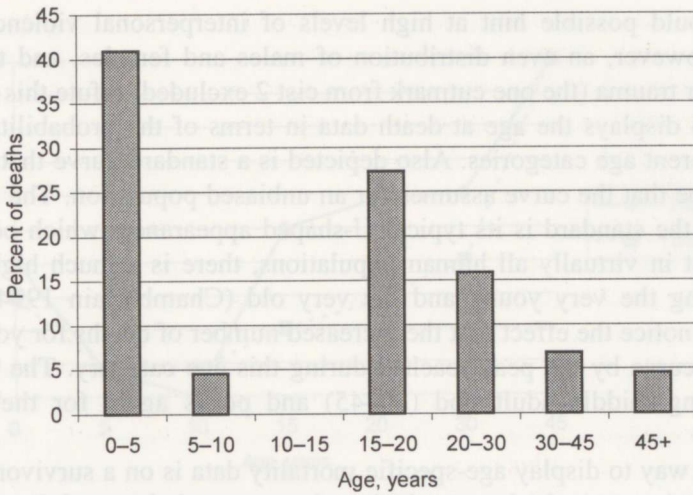


Fig. 5. Age at death distribution.

Joon. 5. Vanus surmahetkel.

Table 1

Biological profile of human remains

Burial place	Age, years	Sex
CIST 1	0	?
	1	?
	4-5	?
	5-7	?
	17-19	Female
CIST 2	23-27	Male
	18-22	Male
	35-45	?
CIST 3	1-2	?
	50+	Female
	1	?
CIST 4	1	?
	16-18	Male
	16-18	Male
	16-20	Female
CIST 5	18-20	Female
	0	?
	1	?
	2	?
	17-22	?
OUTSIDE CIST 5	25-30	Female
	25-35	Male
OUTSIDE CIST 5	Adult	?
OUTSIDE CIST 5	Adult	?

category could possibly hint at high levels of interpersonal violence or even warfare. However, an even distribution of males and females, and the lack of evidence for trauma (the one cutmark from cist 2 excluded) refute this argument.

Figure 6 displays the age at death data in terms of the probability of dying within different age categories. Also depicted is a standard curve that shows the typical shape that the curve assumes for an unbiased population. The main thing to note for the standard is its typical U-shaped appearance, which occurs from the fact that in virtually all human populations, there is a much higher risk of dying among the very young and the very old (Chamberlain 1994, 19). For Rebala, we notice the effect that the increased number of deaths for young adults has on the curve by the peak reached during this age category. The curve then levels during middle adulthood (30–45) and peaks again for the final age category.

Another way to display age-specific mortality data is on a survivorship curve (Fig. 7). Again, a standard curve depicts the expected shape of the curve for a model population (adapted from Hassan 1978, Fig. 3: 1), with a life expectancy of 20 years – a figure typical for this time period throughout Europe (Lang & Ligi 1991). The model curve declines rapidly during the first five years of life and then drops slowly until the old-adult age category. The curve for Rebala approximates the model curve until after the young-adult age group, where it declines quickly, signifying the small proportion of the population surviving into middle and old adulthood.

The demographic data presented here would seem to suggest that the cist-graves of Rebala are not an unbiased account of an expected population. Did the ancient people living in this area really die so young? This seems improbable on several grounds. First, age-specific mortality and survivorship curves follow well-defined patterns for all known human populations with the greatest differences between populations occurring in rates of infant mortality (Chamberlain 1994). Not only are the mortality and survivorship patterns for Rebala drastically different from these model curves, but also from the patterns from data collected on seven Estonian *tarand* graves – which follow the general pattern of the model curves (Kalman, unpublished), with the only difference between the curves being the number of deaths in the infant age category, which has no effect on the shape of the curve outside of this category (Chamberlain 1994). Second, any population suffering around 85 percent of its deaths in the infant (potential adults) and young adult (potential parents and largest part of labor force) age categories does not have much of a realistic chance of survival.

Thus, it is my belief that we are witnessing a grave where middle and old adults have for the most part been excluded from the cists. Either their bodies were disposed of in alternative ways or other graves serving the community have not been found or excavated as of yet.

As mentioned earlier, though, only the central cists of all but one of the graves were completely excavated. Thus, it is possible that the under-represented

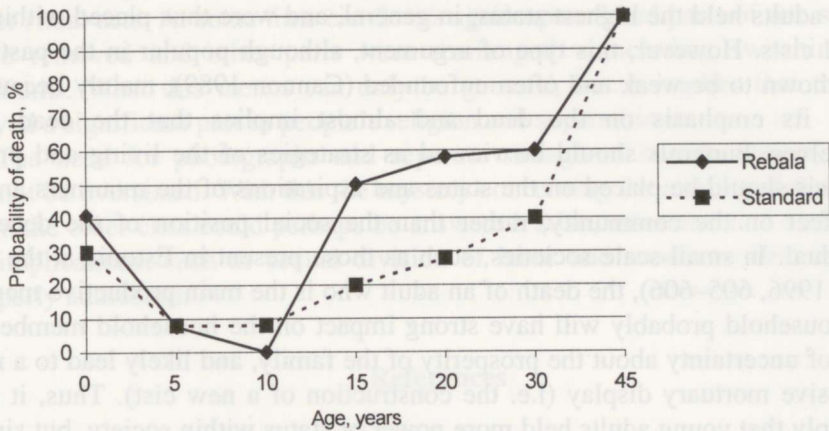


Fig. 6. Probability of death.

Joon. 6. Surma tõenäosus.

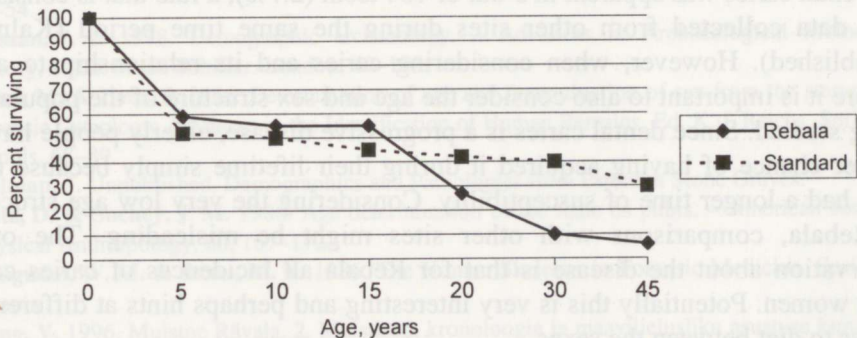


Fig. 7. Survivorship curve.

Joon. 7. Ellujäämise graafik.

individuals (older children, middle and old adults) are located in these outer areas of the graves. Either way, if the other bodies are in the areas outside of the cists, or if not all members of society are buried within the cist graves (Lang 1996, 603 suggests the latter in general), it provides some insight into the social order and beliefs of communities, since if the ideology of death stays the same, then the differential treatment or placement of the deceased must have a social

meaning (Cannon 1989). For example, this could be interpreted as showing that young adults held the highest status, in general, and were thus placed within the central cists. However, this type of argument, although popular in the past, has been shown to be weak and often unfounded (Cannon 1989), mainly because it places its emphasis on the dead and almost implies that the dead bury themselves. Funerals should be viewed as strategies of the living and proper emphasis should be placed on the status and aspirations of the mourners and on the effect on the community, rather than the social position of the deceased individual. In small-scale societies, such as those present in Estonia at the time (Lang 1996, 605–606), the death of an adult who is the main productive member of a household probably will have strong impact on the household members in terms of uncertainty about the prosperity of the family, and likely lead to a more expressive mortuary display (i.e. the construction of a new cist). Thus, it does not imply that young adults held more power or status within society, but simply that the death of a young adult had larger consequences for the mourners.

Pathological evidence was quite apparent at Rebala, especially in terms of non-specific infections and spinal joint disease. Degenerative changes in the spine are relatively common in elderly people and are a result of natural wear and tear (Nathan 1962). However, occurrences in young adults, as seen in Rebala, indicate high rates of strenuous and repetitive activities.

Dental caries was apparent in 5 out of 184 teeth (2.7%), a rate that is consistent with data collected from other sites during the same time period (Kalman, unpublished). However, when considering caries and its relationship to agriculture it is important to also consider the age and sex structure of the population being studied. Since dental caries is a progressive disease, elderly people have a greater chance of having acquired it during their lifetime simply because they have had a longer time of susceptibility. Considering the very low age structure of Rebala, comparisons with other sites might be misleading. The other observation about the disease is that for Rebala all incidences of caries came from women. Potentially this is very interesting and perhaps hints at differential access to diet between the sexes.

Conclusions

The stone-cist graves at Rebala provided us with the remains of 24 inhumations from the Late Bronze to the Early Pre-Roman Iron Age. The population structure is unusual and middle to old adults are relatively absent from the graves.

A recurring theme of missing skeletal parts was again witnessed. However, thanks to a photograph taken during excavation of cist 2, we were able to witness a peculiar arrangement of the bones *in situ*. The arrangement suggests that the living were not separated from the dead after burial. The living probably

revisited the grave to look for spiritual guidance, offer sacrifices or perform other ritual acts. At some time cist 2 was again opened and parts of one skeleton were removed and other parts were rearranged – including switching their craniums. What this means can only be guessed, but it implies that the dead played a significant part in people's religion and superstitions.

The need for photographs and separate storage of burials noticed *in situ* cannot be overstated. With this the mystery concerning the missing skeletal parts from the other cists could perhaps be answered. Also, assessment of disease and its implications, such as sexual division of labor and access to diet, could be properly addressed.

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REBALA KIVIKIRSTKALMETE MATUSED

Resümee

On analüüsitud Rebala viie kivikirstkalme (joon. 1) antropoloogilist materjali. Kalmeid kaevati 1982. aastal Vello Lõugase juhtimisel (Lõugas 1983). Lastekangrute-nimelises rühmas oli algselt ka kuues kalme, kuid see oli kaevamiste alguseks peaaegu täielikult lõhutud. Ainult kalme nr. 5 kaevati läbi täielikult, teistest uuriti vaid pealmisi kihte ning kirste – alumised kihid jäid kaevamata. Seetõttu on võimalik, et mõned matused nendes kalmetes on veel avastamata.

Enamik leitud luudest on põletamata, kuid vähesel hulgal esines ka põletatud luid. Palju luid oli purunenud, kuid üldiselt olid nad vähe kulunud ja üsna hästi säilinud. Samas on aga ilmne, et paljudel juhtudel jäi luumaterjali kogus märksa väiksemaks, kui oleks võinud eeldada väljaselgitatud indiviidide arvu põhjal. Arvestades olemasoleva materjali head säilivusastet ei saa seda nähtust seletada surmajärgse kõdunemisega. Seetõttu tuleb oletada kas kehaosade rituaalset eemaldamist või kaotsiminekut kaevamiste käigus.

Viiest kalmest kogutud materjali põhjal määrati kindlaks 24 indiviidi; andmed nende vanuse ja soo kohta on esitatud tabelis 1. Maetute vanust surma hetkel kajastab joonis 5. Ilmneb, et enamasti on surdud kas varases lapse- või noores täiseas. Kõrge suremus esimestel eluaastatel oli muistsetes ühiskondades harilik nähtus, kuid nii suur surmajuhtumite arv noores täiseas on erakordne. Vanade inimeste matuste äärmine vähesus nihutab eeldatava eluea sünnihetkel 15 aasta kanti, mis on märgatavalt vähem selle perioodi kalmetes tavaliselt täheldatud 20–25 eluaastast. Mehed ja naised on esindatud võrdselt, seda nii suhtarvu kui ka eeldatava eluea osas.

Demograafia meetoditega on hinnatud surma (joon. 6) ja ellujäämise (joon. 7) tõenäosust. Mõlemat kõverat on võrreldud kõveraga, mis peegeldab samu andmeid mudelühiskondadest eeldatava 20–25-aastase eluea kohta. Erinevused Rebala ja mudelühiskondade vahel tulenevad peamiselt küpses ja raugaeas surnute alaesindatusest vaatlusaluses kalmerühmas.

Kahel põhjusel on raske uskuda, et saadud demograafilised andmed peegeldavad tõeselt Rebala kogukonna struktuuri. Esiteks, surma ja ellujäämise tõenäosuse graafikud on kõikide uuritud inimpopulatsioonide puhul ühetaolised,

suurimate võimalike erinevustega üksnes laste suremuse osas (Chamberlain 1994). Rebala vastavad kõverad ei erine drastiliselt üksnes nendest mudelgraafikutest, vaid samuti seni minu poolt uuritud seitsme Eesti tarandkalme andmetest, mis sobivad kokku üldiste mudelitega. Teiseks, ühelgi kogukonnal, kes kaotab 85% oma liikmetest kas lapseas (potentsiaalsed täiskasvanud) või noores täiseas (potentsiaalsed vanemad ja suurem osa tööjõust), ei ole reaalseid väljavaateid ellu jääda.

Seega on Rebala puhul tegu kalmetega, kus vanemaid lapsi ning vanemaid täiskasvanuid pole kirstudesse maetud. Nähtavasti on puuduvate vanuserühmade esindajad maetud kuhugi mujale – kas kalmete kaevamata osadesse või teistesse, seni uurimata kalmetesse.

Fakt, et mitte kõik ühiskonna liikmed pole maetud kirstudesse, võimaldab heita valgust tollaegse ühiskonna sotsiaalsele korraldusele ja uskumustele, sest surnute erineval kohtlemisel ja erinevatesse paikadesse matmisel on sotsiaalne tähendus (Cannon 1989). Viimase mõistmiseks peab meeles pidama, et matuseid tuleb vaadata kui elavate käitumist ning rõhk tuleb asetada pigem matjate staatusele ja püüdlustele ning ühiskonna mõjule kui maetava sotsiaalsele positsioonile. Väikestes kogukondades, nagu tollal Eestis (vt. Lang 1996, 352–356), tõi peamiseks tööjõuks olnud noore täiskasvanu surm kaasa ebakindluse pere kestmajäämise ja tuleviku suhtes ning seda võidi jõuliselt väljendada matmisviisis (sh. uue kirstu või kalme rajamisega). Nii ei pea arvama, nagu oleks noorte täiskasvanute võim ja positsioon ühiskonnas olnud kõrgem kui teistel, vaid lihtsalt nende surmal oli tõsisem mõju ellujäänute saatusele.

Rebala materjalis esineb ilmseid tõendeid patoloogia, eriti mitmesuguste infektsioonide ja lülisamba haiguste kohta (joon. 3). Degeneratiivsed muutused selgrool on vanematel inimestel küllalt sagedased, olles loomuliku kulumise ja rebestuste tagajärg (Nathan 1962). Siiski on niisugused nähtused noorte täiskasvanute puhul tõendiks suurt pingutust nõudvate tööde rohkusest.

Hambakaariest avastati viiel hambal 184-st (2,7%). See on samas suurusjärgus Eesti teiste samaaegsete muististe andmetega. Tavaliselt seostatakse kaariese esinemist elatumisega maaviljelusest, kuid siin tuleb arvestada ka vaatlusaluse populatsiooni vanuselist ja soolist struktuuri. Hambakaaries on progresseeruv haigus ja vanematel inimestel on oma pika elu jooksul suurem võimalus sellesse haigestuda. Seetõttu võib väga lühikese elueaga Rebala maetute andmete otsene võrdlus teiste populatsioonide vastavate näitajatega viia eksiteele. Huvipakkuv on tõsiasi, et kõik kaariesega hambad kuuluvad Rebalas naistele – selle põhjal võib oletada, et eri soolistel oli mõningal määral erinev toitumus.

Märkimisväärne on 18 mm pikkune ja 0,8 mm laiune sügav lõikejalg ühel vasakul reieluul (joon. 4). Jalg jookseb risti üle luu keskpaiga eespoolse pinna. Et lõikepind on muu luuga sama värvi, ei saa sisselõige olla hiline (s.t. see ei tekkinud näiteks väljakaevamistel). Mingit märki paranemisest ei ole, mistõttu vigastus sai tekkida üksnes surmalähedasel ajal. Sisselõige on sirge ja läbilõikes

V-kujuline ning tehtud mingi terariistaga sihilikult. Kui see isik oli enne kallale tungi veel elus, siis pidi hoop vigastama reiearterit, suurt reieveeni ja tugevaid reie aduktorlihaseid ning põhjustama suure verekaotuse ja kiire surma. Kui isik oli elus, on see haav tunnistus verisest rünnakust, kui ei olnud, siis on see löikejälj tõendiks luudelt liha eemaldamise kohta.

Kehaosade rituaalset liigutamist täheldati kalme nr. 2 kirstu puhul, seda tänu fotodele, mis tehti kaevamiste ajal. Fotol (vt. Lõugas 1983, tahv. VI: 2, vasakul) on hästi säilinud luustik peaga põhja poole ja tema keha ulatub kirstu lõunaotsani välja. Luustikust paremal on jäänused teisest matusest, kuid alles on vaid pool koljut, alalõualuu ja alajäsemed. Huvitaval kombel on kahe luustiku mõned osad ära vahetatud. Peaaegu tervena säilinud kolju, mis on fotol näha, ei ole selle keha oma, mille juures ta on. Sulgunud õmblusega kolju kuulub neljakümneandates aastates mehele, kuid ülejäänud skelett ja alalõualuu pärinevad hoopis 18–22-aastaselt mehelt (otsustades lõigustunud kolmandate molaaride, õlavarreluupeade osalise kokkukasvamise ja selgroolülিকেhade ülemiste ja alumiste pindade mittetäieliku liitumise põhjal). Lahtise õmblusega poolik kolju vasakul on noore täiskasvanu oma, kuuludes sellele skeletile. Teine iseärasus puudutab jalgu. Foto (vt. Lõugas 1983, tahv. VI: 2, paremal) on tehtud kirstu lõunaosast ja seal on näha kaks paari jalaluid. Vasakul paiknev paar kuulub noorele mehele, kuid parem jalg on pandud vasakule ning vasak jalg paremale poole. Paremal pool on teine paar jalgu, kuid puudub vasak sääreluu. Sääreluu on suuruselt teine luu skeletis ja üsna kompaktne. Selle, nagu ka teise luustiku puusaluu, selgroo, käte ja poole kolju puudumist ei saa seletada matusejärgsete juhuslike protsesside või loodusliku kõdunemisega.

Ka teiste kirstude puhul oli paljudest luustikest suur osa puudu. Ilma fotodeta luude asendist kaevamiste ajal ei saa seda nähtust rahuldavalt seletada ning hulk informatsiooni läheb jätkuvalt kaotsi, kuni kalmete kaevamise meetodika ei parane.

Kokkuvõtteks võib märkida, et Rebala kalmetesse pole maetud kõiki vastava kogukonna liikmeid. See peegeldab kahtlemata tolleaegset sotsiaalset käitumist. Väga huvitavad on tõendid matuste matmisjärgsest liigutamisest ja ümberpaigutamisest. Need osutavad, et kalmed polnud mõeldud mitte üksnes matmiseks, vaid ka üleloomuliku väe ja esivanemate hingedega peetava rituaalse kommunikatsiooni vahendiks. On mõeldav, et inimesed, kellel olid võim ja teadmised üleloomuliku väega suhtlemiseks, olid suutelised saavutama võimu ja kontrolli ka kogukonna enda üle.