



ARCHAEOLOGICAL INVESTIGATIONS IN RAPLA CHURCHYARD AND THE OSTEOLOGICAL ANALYSIS OF THE BURIALS

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INTRODUCTION

Due to the installment of water and sewerage pipework in the churchyard of Rapla on the 30th September 2011, OÜ Muinaslabor carried out archaeological survey (Malve *et al.* 2011).¹ As the planned pipeline went through the churchyard (reg. no. 8398 at the National Register of Monuments) from the Loo street to the church (Fig. 1), it was likely to find intact burials. The depth of the trench between the churchyard stone fence and the burials was about 1.3 m. After the discovery of the burials the depth of the part of the trench reaching from the inhumations to the church was reduced to 0.8 m. No finds were present in the majority of the 27 m trench, but within the distance of 10 m from the church it contained commingled human bones and two intact burials. One burial was removed entirely and the other one partially.

Previously the only documented archaeological fieldwork took place at the site in 2007 (Kadakas 2008), in the course of digging a 40 cm deep cable trench by the northern and eastern wall of the church choir part. In addition to numerous stray human bones three late medieval or modern period coins² were found.

The article gives a short overview of the historical background of the Rapla church and churchyard and focuses on the material found in the trench in more detail. Special attention is given on the osteological analysis of the two intact burials.

RAPLA CHURCH AND CHURCHYARD: HISTORICAL BACKGROUND

The parish of Rapla was separated from the Hageri parish probably in the second half of the 13th century (Markus 2002, 13). The first stone church was built presumably in the last quarter of the 13th century at the latest. Architecture historians

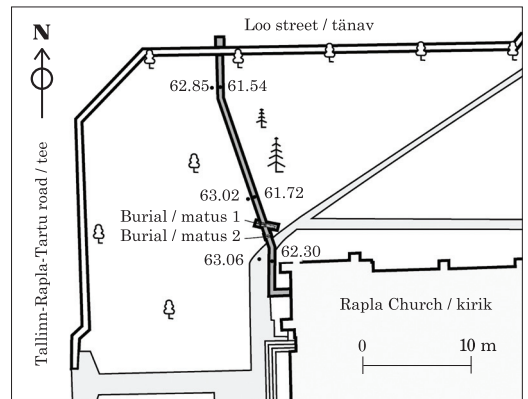


Fig. 1. Location of the trench for the water and sewerage pipeline.

Jn 1. Vee- ja kanalisatsioonitrassi asukoht.

Drawing / Joonis: Raido Roog

¹ Permit issued to Tõnno Jonuks, the fieldworks were conducted by Martin Malve, Raido Roog and Anti Lillak.

² AI 6880.

Ants Hein and Villem Raam have therewith speculated that there would have also been an earlier church building (EA 3, 1997, 94). The stone church, consecrated to Mary Magdalene, was a long one-naved building, that was adjoined by a narrower choir part. In 1738 the church building, damaged by fire during the Great Northern War (1700–1721), was elaborately renovated and possibly the first vestry was built simultaneously. The church had a wooden bell tower until a separate stone tower, that also served as a gate into the churchyard, was built south of the church in 1795 (Markus 2002, 13–16).

The churchyard was used as a burial ground until the law of the Russian empress Catherine II and the Senate in 1771–1772 ordering that the cemeteries had to be established at some distance from the church, to prevent the spread of contagious diseases (Polnoye 1830, 409, 500, 691). The estate owner of Alu, count Tiesenhausen, donated land for a new cemetery in Laadamägi, about 1 km from the church in 1780 (Malm 1868, 15). At the end of the 19th century, the church became too small for a growing congregation and was demolished because of the danger of collapsing. The present church in the New Roman style was built in 1899–1901 (Markus 2002, 16–19).

The map of the Rapla pastorate from 1843 (Fig. 2) shows that the northern part of the old churchyard used to be more than twice as narrow as the southern part and



Fig. 2. Map of the Rapla church (in the upper left corner) and pastorate from the year 1843.

Jn 2. Rapla kiriku (üleväl vasakus nurgas) ja pastoraadi kaart aastast 1843.

(EAA 3724-4-274-2.)

the northern board fence runs very close to the wall of the choir part of the church. The disproportionate measures of the churchyard can be explained by the medieval burial preferences – being buried to the east and south side of the church was considered more prestigious than being buried to the west and north side (Valk 2001, 19). It is likely that during the building of the present church the churchyard surrounding it was also expanded especially to the north. Therefore the northern part of the trench of 2011 reached out of the territory of the former churchyard.

BURIALS

Two *in situ* burials, that are discussed more thoroughly further on, and several commingled human bones were found during the excavation. The minimum number of individuals was determined among the mixed bone material by femurs (Adams & Konigsberg 2004, 138–139). The remains of at least nine individuals were distinguished, including five adults. At least two of them were over 40 years old, according to joint wearing, one was an adolescent (the age of about 16–20 years, according to epiphysial fusion) (determined according to Recommendations 1980, 531) and three were subadults (incl. one 0–4 (6) months old, according to the maximum length of femur) (Allmäe 1998, 183).

Burial No. 1

The body was placed in the coffin on its back in a stretched position (Fig. 3). The head was inclined completely to the right side. The arms were placed parallelly on the sides with palms towards the body. Due to the decomposition of the body some bones were displaced from their anatomical order (for example, thoracic vertebrae, hand and foot bones of the right side).



Fig. 3. Burial No. 1.

Jn 3. Matus nr 1.

Photo / Foto: Raido Roog

The skeleton was surrounded by a few wood fragments, originating from the board coffin. Also six coffin nails were found. It is highly likely that the coffin was made of spruce (*Picea abies*).³ During the removing of the bones from the grave two coins were found. The first one, a Russian *denga* from 1747, was situated under the midshaft of the left humerus; the second one, a Russian *denga* from 1748, was under the central part of the left scapula. The coins were minted in the reign of Russian empress Elizaveta Petrovna (1741–1761).⁴ The remains of wood under the coins (Fig. 4: 2) placed in the grave could be the shavings from the making of the coffin (pers. comm. Jüri Peets (AI)). According to the ethnographic data, placing these leftovers into the coffin under the dead body was a widespread custom in Estonia (including the Seto region in South-East Estonia) and among the votes in North-West Russia (Manninen 1924, 14; Ariste 1974, 152; Tedre 1998, 429). In addition to the spruce shavings and the coins also some remains of the plant fibre (linen?) textile had preserved.⁵ During the conservation works of the textile the pupal cases of insects were discovered, although it was not possible to determine the exact species.⁶

The sex of the buried was determined by the markers on the pubic bones and cranium (Buikstra & Ubelaker 1994, 16–20) and their age by the changes on the pubic bone symphysis surface (White & Folkens 2005, 374–379), cranium sutures closure

³ Identified by Alar Läänelaid and Kristina Sohar (Institute of Ecology and Earth Sciences, University of Tartu).

⁴ Identified by Mauri Kiudsoo (AI).

⁵ Textile was conserved and identified by Riina Rammo (TÜ).

⁶ Identified by Mati Martin (Institute of Ecology and Earth Sciences, University of Tartu).



Fig. 4. Coins from burial No. 1. 1 – Russian denga from 1747, 2 – Russian denga from 1748 with wood-shavings before conservation, 3 – same coin after conservation.

Jn 4. Matuse nr 1 juurest leitud mündid. 1 – Vene denga 1747. aastast, 2 – Vene denga 1748. aastast koos puulaastudega enne konserveerimist, 3 – sama münt pärast konserveerimist.

(TÜ 1937: 1–2.)

Photo / Foto: Raido Roog

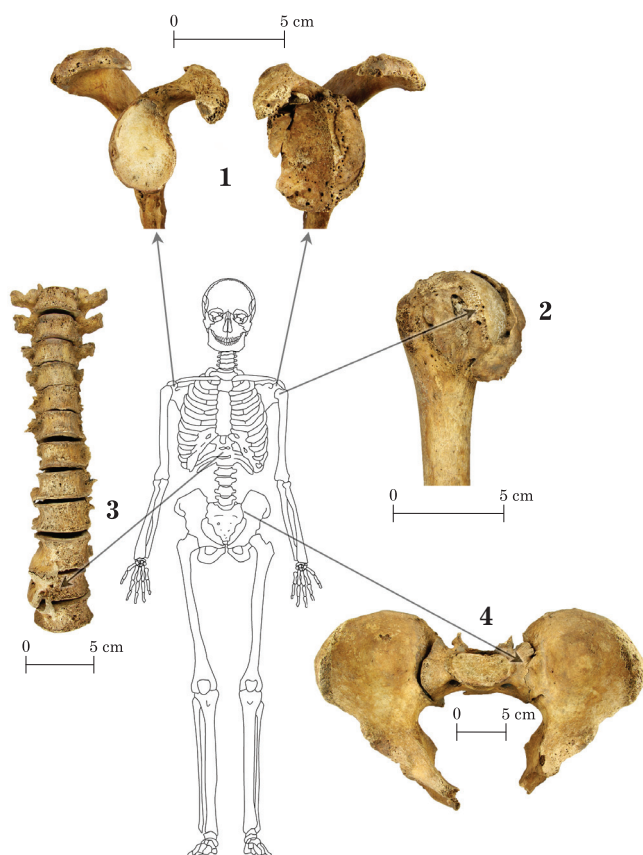


Fig. 5. Pathologies of skeleton No. 1. 1 – normal right scapula joint surface (on the left) and left scapula joint's surface with Bankart's fracture (on the right), 2 – arthrotic humerus head's joint surface, 3 – right side anterior longitudinal spinal ligament ossification of the lower thoracic vertebrae, 4 – fused left pelvis and sacrum.

Jn 5. Luustik nr 1 patoloogiad. 1 – terve parema abaluu liigesepind (vasakul) ja vasak abaluu liigesepind Bankart'i murruga (paremal), 2 – vasak õlavarreluu pea artrootilise liigesepinnaga, 3 – parema eesmise pikisideme luustumine alumistel rinnalülidel, 4 – kokku kasvanud vasak puusa- ja ristluu.

Photo / Foto: Raido Roog, Kristel Külljastinen

(Buikstra & Ubelaker 1994, 32–38) and the aging changes in the joints (Data collection codebook 2005, 31–33). In conformity with that, burial No. 1 belonged to a male whose age at death was 50+ years. According to the maximum length of the left femur (F: 475 mm) and the right humerus (H: 356 mm), his stature was about 175–180 cm. Due to the high age, most of the teeth were lost *ante mortem* from the upper and lower jaw. The remaining teeth showed heavy attrition.

Osteological analysis revealed an injury of the left shoulder joint and several pathologies (Fig. 5). The individual had subluxation of the left shoulder (*luxatio articulationis humeri*) anteriorly (*luxatio subcoracoidea*) (Petlem 1974, 65–66, 78–86; Waldron 2009, 155). Generally this kind of trauma heals by itself and does not leave visible traces on the skeleton. In the case under discussion the subluxation was with a fracture of the anterior inferior surface of the scapula joint, also known as Bankart's fracture (Wong *et al.* 2007, 29). It is highly likely that this subluxation was caused by a physical trauma (*luxatio traumatica*). The clash of the left humerus and anterior side of the scapula joint was so forceful that it caused a fracture. After the subluxation the humerus remained in a new position and slowly formed a new, the so-called false joint (*pseudoarthrosis*). The left humerus formed a new joint to the anterior edge of the scapula joint. The newly formed joint surface was very porous; there were signs of eburnation and bone spurs on it that were caused by arthrotic degeneration. The moving range of the shoulder joint was definitely limited and caused discomfort. The trauma could have been caused by falling, spraining or strong contusion.⁷ It is the first documented trauma of the subluxation of a shoulder joint in Estonian osteological material. The individual had also three healed rib fractures that are probably connected to the same trauma as the shoulder subluxation. Besides, limb joints showed signs of osteoarthritis due to ageing. The joint surfaces were porous and had bone spurs.

In his lifetime, the individual had suffered from diffuse idiopathic skeletal hyperostosis (DISH), also known as Forestier disease (*morbis Forestier*). The disease is characterised by the right side anterior longitudinal spinal ligament ossification (Päi 2000, 252). This means that the vertebrae have been fused. In this case, the vertebrae (Th 10–12) had osteophytes in the stage of fusion (Fig. 5). In addition, sacrum and left ilium had been ankylosed that are one of the indicators of the above mentioned pathology. The main causes for it are obesity and/or glucose intolerance (type II) (Jankauskas 2003, 290).

Burial No. 2

The second burial was unearthed by the trench only partly, revealing the shinbones and feet bones. Because of the depth of the burial (70 cm from the ground) it was not unearthed entirely. The sex of the deceased was determined by the maximum length of tibia (Garmus & Jankauskas 1993, 6–8) and age according to the wearing of joints (Data collection codebook 2005, 31–33). The skeleton belonged to a female whose age at death was 40+ years. Humerus and femur were situated out the excavation plot – therefore the estimation of the body height is impossible. The visible part of the body showed no traces of pathologies. No artefacts were found near the human remains.

The skeletal remains of the burial No. 1 were stored for further examination. The bones of the burial No. 2 and commingled bones have been reburied in Rapla cemetery.

⁷ Pers. comm. Marje Pöld (Estonian Defence Forces Logistic Centre, Health Centre).

CONCLUSIONS

Although the trench in the churchyard was 27 m long, only two intact burials were revealed, both of them quite close to the church building. The mixed soil also contained commingled bones of at least 9 individuals. According to the coin finds, the undisturbed burials belong to the middle or to the second half of the 18th century. The low number of burials found can be explained by the fact that formerly (before the construction of the current church) the northern part of the churchyard was much narrower than today and was used less frequently as a burial ground than the southern or eastern part of it. The detailed study of the burial No. 1 revealed several diseases and traumas, as well as traces of some funerary customs. In conclusion, the excavation results enabled cooperation of different disciplines.

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ARHEOLOOGILISED UURINGUD RAPLA KIRIKAIAS NING MATUSTE OSTEOLOOGILINE ANALÜÜS

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30. septembril 2011 toimus Rapla kirikaias arheoloogiline järelevalve seoses vee- ja kanalisatsiooni-torustiku paigaldamisega kirikusse. Kaevatud trassi pikkus Loo tänavalt kirikuni oli 27 m (jn 1–2). Kirikaia ja matuste vahelisel alal oli trass u 1,3 m sügav. Matuste avastamise järel vähendati trassi sügavust luustike ja kiriku vahelisel alal 0,8 meetrini.

Valdav osa trassist oli leidudeta, kuid alates u 10 m kaugusel kirikust esines pinnases segatud inimluid ning leiti kaks terviklikku *in situ* matust. Kuna matused jäid plaanitavale torustikule ette, siis võeti need üles. Segatud inimluude puhul määrati vähim indiviidide arv reieluude järgi. Leiti vähemalt üheksa indiviidi luud, nende seas oli viis täiskasvanut (kellest kaks olid vanuses 40+ aastat), üks nooruk (vanus 16–20 aastat) ja kolm last (neist ühe vanus 0–4 (6) kuud). Matused pärinesid 18. saj keskpaigast, mil kirikaeda oli veel lubatud matta. Kuna sel ajal oli kirikaia põhjapoolne osa tänapäevasest palju kitsam, seletab see ka matuste vähest arvu trassil alal – kesk- ja varauusajal polnud kirikust põhja poole matmine kuigi eelistatud.

Matus nr 1 oli asetatud kirstu selili ja väljasirutatud asendis (jn 3). Pea oli vajunud paremale küljele. Käed olid asetatud paralleelselt kõrvale, peopesad vastu keha. Luustiku ümber oli kõdunenud puitu (kuusk), mis pärines laud- ehk kastkirstust. Samast leiti ka kuus kirstunaela. Matuse ülesvõtmise käigus leiti kaks panusena kaasas olnud münti (jn 4). Esimene neist, 1747. a denga, asus vasaku õlavarreluu keskosa all; teine, 1748. a denga, vasaku abaluu keskosa all. Hauda asetatud müntide all säilinud puidujäänused võivad olla kirstu valmistamisest tekkinud laastud (jn 4: 2). Etnograafiliste andmete põhjal on nii Eestist (sh Setomaal) kui vadjalaste seas teada komme panna kirstu selle valmistamisel ülejäänud puulaastud. Lisaks kuuselaastudele oli müntide juures säilinud ka taimsest kiust tekstiili (linane?) katkeid. Riidejäänuste konserveerimisel avastati putukate nukkude kestad, mille liigilist kuuluvust ei olnud võimalik määrata.

Matus nr 1 oli 50+ aastane mees. Mehe kehakasv oli vahemikus 175–180 cm. Kuna tegu oli vanema täiskasvanuga, siis olid enamik hambaid enne surma üla- ja alalõuast välja langenud. Allesjäänud hambad olid tugevasti kulunud. Osteoloogilise analüüsi käigus tuvastati skeetil vasaku õlaliigese trauma (jn 5) ning mitmesuguseid patoloogiaid. Mehel oli vasaku õlaliigese osaline nihestus ettepoole. Üldjuhul paraneb osaline õlaliigese nihestus iseenesest ega jäta skeetile nähtavaid jälgi. Antud juhtumi puhul oli nihestus toimunud koos abaluu liigese pinna alumise-eesmise osa murruga. Tõenäoliselt oli tegemist vigastusest tingitud nihestusega. Pärast nihestust jäi õlavarreluu uude asendisse, kus ajapikku tekkis uus, nn ebaliiges. Vasak õlavarreluu liigestus nüüd vasaku abaluu liigeseõõnsuse eesmise äärega. Õlaliigese liikuvus oli kindlasti piiratud ja põhjustas vaevusi. Vigastuse võis põhjustada kukkumine, väänamine või tugev põrutus. Tegemist on esimese dokumenteeritud õlaliigese trauma juhtumiga Eesti osteoloogilises aineses. Lisaks õlaliigese traumale oli mehel ka kolm paranenud vasaku roide murdu, mis suure tõenäosusega on seotud sama traumaga.

Mehe jäsemeliigestel esines vanusega kaasnenud liigeste kulumist. Liigeste pinnad olid poorsed ja esines luukasviseid. Mees oli eluajal põdenud ka Forestier'i tõbe. Haigust iseloomustab lülisamba eespoolse pikisideme luustumine, mille tulemusel selgrootülid ühinevad omavahel. Mehe 10.–12. rinnalülil olid luukasvised ühinemise järgus (jn 5). Lisaks sellel olid tema vasak puusa- ja ristluu omavahel kokku kasvanud, mis on samuti Forestier'i tõve üheks tunnuseks. Haiguse peamisteks põhjustajateks on ülekaalulisus ja suhkruhaigus (II tüüp).

Matusest nr 2 ulatusid trassi alale vaid sääre- ja jalalaba luud. Esemeleide nende juurest ei saadud. Luustik kuulus naisele, kelle vanus oli surma hetkel 40+ aastat.