

# Rescue excavations at the Vastseliina borough cemetery and the 16th–17th-century war-related mass grave

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#### INTRODUCTION

Vastseliina borough cemetery lies in an area between Vastseliina Castle and Piiri Tavern on the confluence of the Piusa River and Miikse creek on a north-south aligned cape (Fig. 1). The burial ground is on the eastern and northern part of the site, covering a triangular area (Fig. 1). Several smaller scale archaeological excavations have taken place in the cemetery (Valk 2008; 2009) during which a few human bones were discovered. Commingled bones have been found under the eastern part of the Piiri Tavern during renovation work, but also during farming and different excavation works in the area. In all, the area is well known among the local people as a burial place. The rescue excavations discussed in the present paper were the first extensive archaeological fieldwork that allowed to determine the period and nature of the burial site (Malve et al. 2018). Archaeological rescue excavations at the Vastseliina borough cemetery took place



- Fig. 1. Excavation sites of 2017 and 2018 (red), location of the Pilgrims Hall of the Vastseliina Castle medieval theme park (blue), and the preserved part of the cemetery (hatched).
- Jn 1. 2017. a ja 2018. a kaevandid (punasega), Vastseliina piiskopilinnuse keskaja teemapargi palverändurite maja asukoht (sinisega) ja säilinud kalmistuala (viirutatud).
- Drawing / Joonis: Raido Roog, base map / aluskaart: Estonian Land Board / Maa-amet

in connection to the building of the Pilgrim Hall of the medieval theme park at Vastseliina Castle. The building of the hall was preceded in 2015 by preliminary investigation during which a large amount of fragmented human bones and *in situ* burials were discovered (Lissitsina *et al.* 2016, 192–194). The site of the rescue excavations covered an area of *ca.* 150 m<sup>2</sup>. The most recent fieldwork of the cemetery was conducted in the summer of 2018 when the western end of the burial site was found and an *in situ* burial discovered (Piirits & Malve 2018). A hole filled with fragmented and re-buried commingled bones (*ca.* 2.1 × 1.5 m) was also discovered and partially opened from the western part of the cemetery.

The article describes the site, the excavations of 2017 (written by M. Malve), the burials and finds from the graves (Malve and T. Juus), human remains (Malve) and dental diseases (M.-A. Liblik).

## HISTORICAL BACKGROUND

Building of Vastseliina Castle started in 1342 and it soon became the most important border fortress of the Tartu diocese (Alttoa 1999, 160). An important trade route from Riga to Pskov ran through Vastseliina in the Early Modern Period (Tarvel 2013, 166). Vastseliina cemetery was a borough cemetery: in the Polish land revisions from the second half of the 16th century Vastseliina was referred to as a borough and it kept growing in the following century (Tarkiainen 2013, 278). There are no written records on the construction of the first parish church (Suuder 1991, 9). Vastseliina parish existed already before the Livonian War (1558–1583) and it is possible that the church was also built before the war. At the end of the 16th century, Vastseliina could have hosted an Orthodox church, since there are records of a paid Russian priest (1585–1587) and a deacon during the period of Polish-Lithuanian Commonwealth, but the church might have also been in the Castle (Selart 2013, 113). A new church was built in front of the Castle in 1651 and it was severely damaged during the Russian siege in 1702 (Suuder 1991, 9). After the church was destroyed, a new one was built in the Külaoru village, 6 km away from the Castle.

# BURIALS

# Single graves: coffins, the position of skeletons and grave orientation

During the rescue excavations 144 burials were documented, of which 143 were unearthed.<sup>1</sup> There were 109 single graves, two double graves, and four collective graves. Burial density of the cemetery was quite high. Often the earlier graves were damaged by the later ones. The placement of burials on the steep eastern slope of the cemetery also indicated a high burial density. The natural ground of the cemetery has not been preserved. The burial area has been levelled, but considering the modern ground level, the burial depth was approx. 0.4–1.5 m. Parts from several skeletons (burials nos 88, 89, and 105) had shifted away from the rest of the skeleton due to the slant of the valley.

Almost all the deceased had been placed to the grave in a supine-extended position on their backs, two had been buried on their side. According to the Christian burial tradition of the Medieval and Early Modern Period Europe, most burials were east-west aligned, i.e. head to the west, feet to the east. The only exception was burial no. 55 that was perpendicular to others, north-south aligned. Based on the position of its backwards bent left leg, the grave might have been dug too small and the burial might have been forced in the grave.



Fig. 2. Well-preserved board coffin (burial no. 14). Jn 2. Hästi säilinud laudkirst (matus 14). Photo / Foto: Raido Roog

Wood and nails from the coffins had been preserved in only a few cases. 28 burials (25.7% of single burials) were laid to rest in a coffin, most likely in a board coffin (Fig. 2). Coffin burials are indicated by remnants of wood from the coffin found at 20 deceased and coffin nails discovered from 18 burials. The highest number of nails for a burial was nine (burial no. 99). To connect the footboard and sideboard of the coffin of burial no. 23, a metal corner was used (Fig. 3): a first-time find in Estonia. Another noteworthy find was

<sup>118</sup> 

<sup>&</sup>lt;sup>1</sup> Burial no. 145 was not unearthed.

burial no. 36 that had a nail logged in its right 1st cuneiform (Fig. 4), that was nailed through the coffin lid. This could have been done so that the person buried would not become a revenant. A similar superstition is also common in Värska, Setomaa in southern Estonia.<sup>2</sup> In addition to the 28 deceased that were laid to rest in a coffin, it is highly likely that 12 more were buried in coffins based on the position of skeleton in the grave (40 altogether).

The position of the hands<sup>3</sup> could be determined in 53 cases – in most burials, the hands were placed on the body; one was buried with hands on the side. The most common positions were one hand across the abdomen in a right angle and the other one placed on the thorax (in 14 burials) or both hands across the abdomen in a right angle (in 11 burials).

#### Mass graves and collective graves

Four mass graves<sup>4</sup> with 31 burials were discovered in the cemetery. Graves with several burials are rare in Estonian rural cemeteries and churchvards. Before the excavation season in 2017, no such graves were discovered; in addition to Vastseliina, one mass grave was recently found in Palamuse churchvard (Malve 2018). Mass grave no. 1 was thoroughly examined (Fig. 5), but collective burials nos 4 and 5 were excavated only partially. The deceased in the collective burials were placed in both alignment - some were placed with their head to the west, others to the east - most likely so all the deceased would fit in the grave. Burials nos 119, 126, and 146 in mass grave no. 5 were prone burials, and burials nos 103, 109, and 143 in the same grave were placed on their side. Both adults and subadults were laid to rest in mass graves. Mass grave no. 5 was the largest with four adults and 13 subadults.



- Fig. 3. The preserved left metal corner of the burial no. 23 coffin footboard.
- Jn 3. Matus 23 kirstu jalutsi vasakus nurgas säilinud metallist nurk.

Photo / Foto: Raido Roog



Fig. 4. The nail in the right first cuneiform nailed through the coffin lid (burial no. 36).

Jn 4. Läbi kirstukaane löödud nael parema jalalaba mediaalses talbluus (matus 36).

Photo / Foto: Raido Roog



Fig. 5. The excavated second layer of mass grave no. 1. Jn 5. Ühishaua 1 teine kiht väljapuhastatuna. Photo / Foto: Ragnar Saage

<sup>&</sup>lt;sup>2</sup> Pers. comm. Heiki Valk (TÜ).

<sup>&</sup>lt;sup>3</sup> The determining the position of hands is based on schematics by Valk 2001, 69: fig. 53.

<sup>&</sup>lt;sup>4</sup> Mass graves are an infamous form of common burial, usually used only in cases with larger numbers of bodies.

**Mass grave no. 1** consisted of six individuals: three males, two females, and one juvenile. The deceased were placed on top of each other in three layers. All skeletons in the grave were placed in a supine-extended position, but in a non-regular manner – hands and legs were criss-cross over others and the bodies were atop each other. These irregular positions indicate that the deceased had been thrown in the grave. Later, most likely during the 18th century, the mass grave was disturbed by the inhumation of burial no. 4. This also resulted in the removal of the right legs of burials no. 5 and 6. **Collective burial no. 2** consisted of the partially preserved skeletons of a possible woman and two subadults. **Collective buri** 



Fig. 6. Mass grave no. 5 after the removal of the third layer. Jn 6. Ühishaud 5 pärast kolmanda kihi eemaldamist. Photo / Foto: Raido Roog

**al no. 4** had been damaged by later burials and it was possible to ascertain the remains of two females, one male, and one subadult. The largest, **mass grave no. 5** (Fig. 6), was partly outside the borders of the trench and therefore it was not wholly unearthed. 18 burials were discovered in this grave, 17 of which were exhumed. The skeletons were placed in the grave in six layers. This mass grave consisted of two male, two female, and 13 subadult burials.

One double burial consisted of two males and the other of two females.<sup>5</sup> The deceased were inhumed with their heads to the west. Five individuals in mass grave no. 5 and the two males from one of the double burials had died a violent death. Deceased in the collective burials nos 2, 4, and in mass grave no. 5 showed no evidence of sharp force traumas. It is likely that these people died because of an epidemic.

## Finds from the graves

Several finds were discovered with the burials: mostly brooches (6), rings (6), pendants (3), coins (6), and knives (6). Grave goods were found in 22 burials, 30 items altogether. Based on the dating of the burial finds, the earliest burial was no. 106, who had a mid-15th century *scherf*. Burial no. 14 wore four signet rings that date from the second half of the 16th century or early 17th century. On a right hand finger she wore two lattice-patterned signet rings (Fig. 7: 1), and on a left hand finger two signet rings with bird figures (Fig. 7: 2). Several penannular brooches with rolled ends from the same period<sup>6</sup> were found at the Vastseliina cemetery (Fig. 7: 3). A penannular brooch with flat and simple animal- or lily-shaped ends (Fig. 7: 4) was discovered on the chest of an adult male (burial no. 69). Similar brooches have been found at the Siksälä village cemetery in Southern Estonia (Valk & Laul 2014, 102–104, fig. 80: 13–15) and at the Sēlpils cemetery in Latvia (Šnore & Zariņa 1980, 205, fig. 177: 9), and date from the 15th century. Burials nos 43 and 47 both had a Russian *denga*, minted in 1737 and 1748, respectively. The latter also had an Orthodox cross pendant dated to the

 $<sup>^{\</sup>scriptscriptstyle 5}$  During the fieldwork, the double burials were referred to as collective burials no. 3 and 6.

<sup>6</sup> Estimation by Heiki Valk (TÜ).



- Fig. 7. Finds from the Vastseliina borough cemetery: 1 lattice-patterned signet rings and 2 signet rings with bird figures (burial no. 14), 3 penannular brooch with rolled ends (burial no. 57), 4 penannular brooch with flat and simpler animal- or lily-shaped terminals, 5 pendant (burial no. 6 in mass grave no. 1), 6 knife (burial no. 9 in mass grave no. 1), 7 shield-shaped ring (burial no. 102), 8 cross pendant.
- Jn 7. Vastseliina alevikalmistu leiud: 1 võreornamendi ja 2 linnufiguuriga pitsatsõrmused (matus 14), 3 rullotstega hoburaudsõlg (matus 57), 4 – lamedate degenereerunud liilia- või loomapeaotstega hoburaudsõlg, 5 – ripats (matus 6 ühishauas 1), 6 – nuga (matus 9 ühishauas 1), 7 – laia kilbiga sõrmus (matus 102), 8 – ristripats. (TÜ 2645: 58, 59, 60, 61, 76, 77, 47, 48, 84, 109.)

Photo / Foto: Martin Malve

same period. A similar cross pendant was also found from adjacent grave no. 48. Only one item regarding clothing was found: a belt buckle. Finds characteristic of rural cemeteries – rustic items such as brooches and knives – indicate that most of the buried were locals. Based on the grave goods, the cemetery can be dated to the period from the 15th century to the middle of the 18th century.

Burial no. 6 in the mass grave no. 1 had a pendant (Fig. 7: 5) on her chest and a signet ring with bird figure on a left hand finger, and burial no. 9 had a knife (Fig. 7: 6) on the pelvic area. Based on these finds, this mass grave dates either from the second half of the 16th or the early 17th century. In the mass grave no. 5 two deceased were buried with grave goods. Burial no. 102 had a shield-shaped ring (Fig. 7: 7), representing the final, 15th-century stage of this artefact type (Valk & Laul 2014, 118–120, fig. 96: 1, 2, 9) and burial no. 112 had a penannular brooch with rolled ends dating from the 15th or 16th century.<sup>7</sup> The mass grave no. 5 dates most likely from the 15th or 16th century.

In addition to the items found in the graves, finds from disturbed graves – small brooches, closed rings, and belt buckles<sup>8</sup> were discovered in the soil. A noteworthy stray find is a cross pendant from the 13th or 14th century (Fig. 7: 8), similar having been found in southern Estonia (Ligi & Valk 1993, 191, LXXXI: 6) and in areas surrounding the lower course of the Daugava River in Latvia (Mugurēvičs 1974, 227–228, fig. 2: 21). The small brooch (: 146) and closed rings (: 15, 164) date from the 17th to 18th century (Valk 2001, 47, 49), and a small robust round brooch (: 10) belongs to the same period (Valk 2004, 432).

<sup>&</sup>lt;sup>7</sup> Estimation by Heiki Valk (TÜ).

<sup>&</sup>lt;sup>8</sup> Coins have not been included since it is not clear if they were grave goods.

#### **HUMAN REMAINS**

During the excavations, 144 *in situ* skeletons were discovered, 143° of which were exhumed (Malve & Liblik 2018). All skeletons have been included in the statistics, including highly fragmented ones, and the skeletons where determining sex and age was not possible. 49 skeletons could be fully excavated, other 94 had been damaged by later burials, during earthworks, or were partially out of borders of the trench. The skeletons were well preserved, damages caused by erosion and topsoil weight were minimal.

The analysed sample from Vastseliina borough cemetery consisted of 99 adults (69.2%) and 44 subadults (30.8%) (Fig. 8). 63% of the adults were males (including three possible males) and 35% females (including four possible females). In the case of one adult it was not possible to determine the sex since the few preserved bones were also highly fragmented (burial no. 107). From subadults it was possible to determine the sex of two burials: one was male (burial no. 115) and the other female (burial no. 96).<sup>10</sup> Compared to other cemeteries from the same period, Vastseliina had a significantly higher percentage of male burials; the ratio of male-to-female burials is usually more even (e.g. Siksälä village cemetery 27.5% and 24.6% (Malve 2014, 310), and Tartu St Jacob's cemetery 20.7% and 22.0% (Liblik 2017, 18)). A similar higher occurrence of male burials has been observed among the buried at the gallows hill in Tallinn, where more than 80% of adult burials were males (Malve 2017a, 19), and in soldier-related burial sites such as the cemetery discovered under the Triumph Bastion in





<sup>&</sup>lt;sup>9</sup> The sex of the deceased was determined according to the morphological traits of pelvis and skull bones (Buikstra & Ubelaker 1994, 16–20) and the maximum length of the long bones (Garmus & Jankauskas 1993, 5–23) and tarsal bones (Garmus 1996, 28). The age at death of adults was derived according to the changes in wearing of the teeth (Brothwell 1981, 72), pubic symphyseal face (Todd 1920; 1921; Brooks & Suchey 1990) and wearing of the limb joints caused by ageing (Ubelaker 1989, 84–87), as well as the size and development of the bones (Schaefer *et al.* 2009). The age of subadults was determined according to the development and eruption of the teeth (Ubelaker 1989, 64), the maximum length of the long bones (Allmäe 1998, 183–184) and the epiphyseal fusion (Schaefer *et al.* 2009). The sex of the subadults were not determined because clear traits develop only in the final stage of puberty (Buikstra & Ubelaker 1994, 16). Significant pathologies were also specified (Ortner & Putschar 1985; Roberts & Manchester 2012). Stature of the adults were calculated after the length of the long bones (Trotter 1970, 71–83). <sup>10</sup> The same methods were used as for determining the sex of the adults.

Narva, where male burials made up 61% of all burials (Ööbik *et al.* 2015, 184). The larger percentage of male burials is possibly related to the cemetery being located next to the Vastseliina Castle and it could be that it was used as a burial ground of the castle.

# Mass grave and sharp force traumas

Five skeletons in collective grave no. 1 showed evidence of sharp force traumas. Only one skeleton had no wounds; this individual might have died as a result of trauma to the soft tissues. The wounds were long, straight, and narrow, V-shaped and with smooth edges. Such damage is made by a keen-edged weapon, e.g. sword, sabre, or bardiche.11 During the osteological examination, five skeletons had at least 38 cut wounds altogether. On average, one skeleton had more than seven wounds that were mostly located on the cranium (Fig. 9). Most common were head wounds followed by neck wounds that were discovered on two skeletons. Other skeletal parts - costae, scapulae, and pelvic bones (Fig. 10) - presented only a few wounds. Most of the wounds were located on the top of the cranium. Also the posterior part of the parietal bones was struck by blows. Parietal traumas are one of the most common type of battle wounds. Since head wounds cause a lot of bleeding, even injuring the soft tissue will hinder the enemy and makes defeating them easier. Most of the head wounds had penetrated the skull. The location of the wounds indicate a situation, where the victims had been attacked from the back, e.g. as in escaping. The amount of blows to the right and to the left side of the body were equal. The number and location



Fig. 9. Fatal sharp force traumas in the occipital and calvarial parietal bones (burial no. 8).

Jn 9. Surmavad terariista lõikejäljed kolju kukla- ja laeosas (matus 8).

Photo / Foto: Martin Malve



Fig. 10. Sharp force trauma of the posterior side of the right pelvic bone (burial no. 6).

Jn 10. Terariista haav parema puusaluu selgmisel küljel (matus 6).

Photo / Foto: Martin Malve

of blows to the skull indicate that either there were multiple assailants or the victim was in different positions during the attack. The blows were struck in different angles. The number and nature of the injuries are characteristic of battle and numerous skull wounds point to the lack of protective headgear. The location of the head wounds is a clear sign that the blows were aimed to kill the victim.

<sup>11</sup> Pers. comm. Ain Mäesalu (TÜ).

In addition to the mass grave and a double burial, two males who died as a result of violence, were found in single burials. The first one had three sharp force traumas in the posterior part of the skull (parietal and occipital bones) and two on the frontal bone; all wounds showed signs of healing. Two wounds, that had started healing, in the middle  $\frac{1}{3}$  part of the left ulna indicate parrying the blows. The second male had five cut marks in his 4th and 5th cervical vertebrae. The head and first five vertebrae of the deceased were apart from the rest of the neck. This indicates that the head was removed from the body by sharp blows. Among the commingled remains also two skulls with peri-mortem cut marks were found. Altogether, 11 individuals with skeletal cut marks were found in Vastseliina cemetery. Based on the peri-mortem injuries, a skull found in the Haapsalu Cathedral is very similar to the ones in Vastseliina: it had nine sharp force traumas (Malve 2017b, 26). Discoveries similar to those in Vastseliina are also known from other locations in Europe, e.g. from the battle of 1361 in Visby, Sweden (Ingelmark 1939), the battle of 1520 in Uppsala, Sweden (Kjellström 2005), and from a mass grave of the 1461 battle of Towton in England (Fiorato *et al.* 2007). In these sites, the wounds were also found mainly in cranium areas.

The rest of the skeletons presented other pathological changes typical to Medieval and Early Modern Period burials. These are mostly related to the skeletal aging (e.g. osteoarthritis), diet (e.g. dental caries), or could be caused by physical activity degeneration or congenital abnormality (e.g. intervertebral disc herniation).

#### **Dental diseases**

The burials were studied for both dental and skeletal pathologies. As a result, it was noted that dental pathologies were overall more common than skeletal pathologies. The dental pathologies studied were dental calculus (Brothwell 1981, 155, fig. 6.14: B), dental caries, dental enamel hypoplasia (DEH; vertical and horizontal grooves, and pits; Guatelli-Steinberg & Lukacs 1999), periapical lesions, alveolar reduction (Brothwell 1981, 155, fig. 6.14: A), and *ante-mortem* tooth loss (AMTL; Roberts & Manchester 2012, 74). Of the 143 unearthed burials, 81<sup>12</sup> had teeth and/or dental sockets. 1798 erupted and preserved teeth, of which 119 were deciduous and 1679 permanent, were examined. In addition, 84 teeth lost ante-mortem and 168 teeth lost post-mortem were registered. Altogether information on 2050 erupted and 161 unerupted teeth was available. In the case of nine 3rd molars, it was not possible to determine if the teeth had been present due to the fragmentary state of the alveolar bones.

Most of the buried had normal dentition, but there were nine burials with abnormalities. The most peculiar was burial no. 31, where the ectopic eruption of three teeth was present: upper right PM<sup>2</sup> had erupted in the location of upper right C<sup>1</sup>, C<sup>1</sup> in the location of PM<sup>1</sup>, and PM<sup>1</sup> in the location of PM<sup>2</sup> (Fig. 11). Considering that the PM<sup>1</sup> is usually the first of the three to erupt (Russak *et al.* 2001), it is unclear what might have caused this abnormality that often indicates a disturbance of the growth pattern of the individual (Yaseen *et al.* 2011, 3–7).

75 burials (92.6%) had at least one of the observed dental pathologies, the prevalence of which is shown on Fig. 12. The commonest was dental calculus followed by dental enamel hypoplasia. The latter is usually an indicator of stress during the dental growth period (Goodman & Rose 1990, 64), such as a nutritional deficiency or a childhood illness (Roberts & Manchester 2012, 75). Both dental calculus and dental caries result from insufficient dental hygiene and diet (see below).

<sup>&</sup>lt;sup>12</sup> In addition, there were two infants aged 0±2 months with unerupted teeth. Since all of their teeth were unerupted, they are not counted as having teeth or dental sockets. Their teeth are included in the number of unerupted teeth.

The main cause for periapical lesions is usually an advanced stage of dental caries, which allows the bacteria to reach the alveolar bone through the root canal (Hillson 1996). If this happens, it is very likely that a localised inflammation will occur and a collection of pus (abscess) will form (Hillson 1996, 284).

Alveolar reduction is mainly caused by advanced inflammation of the gums caused among other by advanced dental calculus (Lõvi 1968, 48). AMTL is mostly caused by advanced dental caries and trauma in younger people, and advanced inflammation of the gums in older (Arcini 1999, 79). Considering that all the burials in Vastseliina, who had lost at least three teeth during their lifetime, also presented advanced alveolar reduction, there seems to be a cause-and-effect connection.

Similar studies have been conducted on burials of five other cemeteries in Estonia dated to Medieval and Early Modern period: St Jacob's cemetery in Tartu (Liblik 2017), village cemetery at Tääksi (Allmäe 1998; 1999), St John's cemetery in Pärnu (Limbo 2009; Allmäe & Limbo 2008; 2010), old parish cemetery at Hargla (Malve *et al.* 2012), and the cemetery of the Church of the Transfiguration of Our Lord in Tallinn (Allmäe 2008). The presence of DEH has not been previously studied. Figures 13 and 14 present the comparisons of the prevalence of the observed dental pathologies among adult (Fig. 13) and subadult burials (Fig. 14).

Figure 15 presents the demographic profiles of the samples from Vastseliina, Tartu, and Hargla. In Tallinn, the studied material consisted of 29 adult burials, in Tääksi the sample consisted of 59 subadult and 45/46 adult burials, and in Pärnu 42–51 adult burials.<sup>13</sup> The last three samples could not be profiled since the information has not been published.



- Fig 11. Ectopic eruption of the upper right canine and premolars (Burial no. 31, on the left side of the photo). Dental sequence (center to left): two incisors, 2nd premolar, canine, 1st premolar, three molars. Dental sequence should be two incisors, canine, 1st premolar, 2nd premolar, three molars.
- Jn 11. Silmahamba ja eespurihammaste ektoopiline lõikumine ülemisel paremal lõualuul (luustik nr 31, fotol vasakul pool). Hammaste järjekord (keskelt vasakule): kaks lõikehammast, II eespurihammas, silmahammas, I eespurihammas, kolm tagapurihammast. Hammaste järjekord peaks olema: kaks lõikehammast, silmahammas, I eespurihammas, II eespurihammas, kolm tagapurihammast.





- Fig. 12. Prevalence of dental calculus (A), DEH (B), dental caries (C), periapical lesions (D), alveolar reduction (E) and AMTL (F) among the buried at the Vastseliina borough cemetery. The number indicates the number of burials with the pathology present.
- Jn 12. Hambakivi (A), emaili hüpoplaasia (B), kaariese (C), periapikaalsete tühimike (D), lõualuude taandumise (E) ja surmaeelse hammaste väljalangemise (F) esinemine Vastseliina alevikalmistul. Tulbal olev arv väljendab maetute arvu, kel esines vaadeldavat patoloogiat.

Compiled by / Koostanud: Mari-Anne Liblik

<sup>&</sup>lt;sup>13</sup> The variation among the adult burials from Tääksi and Pärnu has not been explained.



- Fig. 13. Prevalence of dental calculus (A), DEH (B), dental caries (C), periapical lesions (D), alveolar reduction (E), and AMTL (F) among the adult burials at the borough cemetery at Vastseliina, St Jacob's cemetery in Tartu, village cemetery at Tääksi, St John's cemetery in Pärnu, old parish cemetery at Hargla, and cemetery of the Church of the Transfiguration of Our Lord in Tallinn. Missing figure – no information on the presence of the pathology or if it was studied.
- Jn 13. Hambakivi (A), emaili hüpoplaasia (B), kaariese (C), periapikaalsete tühimike (D), lõualuude taandumise (E) ja surmaeelse hammaste väljalangemise (F) esinemine Vastseliina alevikalmistule, Tartu Püha Jakobi kalmistule, Tääksi külakalmistule, Pärnu Jaani kalmistule, Hargla vanale kihelkonnakalmistule ja Tallinna Issanda Muutmise Kiriku kalmistule maetud täiskasvanute hulgas. Esinemissagedus puudub nende kalmistute puhul, mille kohta pole informatsiooni, et antud patoloogiat oleks esinenud või uuritud.

Compiled by / Koostanud: Mari-Anne Liblik



- Fig. 14. Prevalence of dental calculus (A), DEH (B), dental caries (C), periapical lesions (D), alveolar reduction (E), and AMTL (F) among the subadult burials at the borough cemetery at Vastseliina, St Jacob's cemetery in Tartu, village cemetery at Tääksi, St John's cemetery in Pärnu, old parish cemetery at Hargla, and cemetery of the Church of the Transfiguration of Our Lord in Tallinn. 0.0% – pathology was not present; missing figure – no information on the presence of the pathology or if it was studied.
- Jn 14. Hambakivi (A), emaili hüpoplaasia (B), kaariese (C), periapikaalsete tühimike (D), lõualuude taandumise (E) ja surmaeelse hammaste väljalangemise (F) esinemine Vastseliina alevikalmistule, Tartu Püha Jakobi kalmistule, Tääksi külakalmistule, Pärnu Jaani kalmistule, Hargla vanale kihelkonnakalmistule ja Tallinna Issanda Muutmise Kiriku kalmistule maetud alaealiste hulgas. 0,0% – patoloogiat ei esinenud; esinemissagedus puudub nende kalmistute puhul, mille kohta pole informatsiooni, et antud patoloogiat oleks esinenud või uuritud.

Compiled by / Koostanud: Mari-Anne Liblik



**Fig. 15.** Demographic profiles of the burials with teeth/dental sockets from borough cemetery at Vastseliina, St Jacob's cemetery in Tartu, and old parish cemetery at Hargla. The number on the bar indicates the number of burials; the range of the age group is in the brackets.

Jn 15. Säilinud hammaste või hambasompudega maetute jagunemine vanuserühmadesse Vastseliina alevikalmistul, Tartu Püha Jakobi kalmistul ja Hargla vanal kihelkonnakalmistul. Tulbal olev arv väljendab maetute arvu; sulgudes on antud vanuserühma vanusevahemik.

Compiled by / Koostanud: Mari-Anne Liblik

Compared to burials from other cemeteries, Vastseliina had the highest prevalence of dental calculus (slightly higher among adults and remarkably higher among subadults). The larger difference among children could indicate that the subadults of Vastseliina ate more foods rich in either carbohydrates (encourages accumulation of dental plaque) or proteins (encourages calcification of dental plaque) (Roberts & Manchester 2012, 71). Considering that dental caries was also quite common among the subadults in Vastseliina, the former is more likely. Even though Vastseliina had the highest prevalence of dental calculus, the prevalence of alveolar reduction is not the highest. This is most likely due to the fact that most of the dental calculus in Vastseliina was minimal or medium.

In the case of teeth lost ante-mortem, it is possible that some were extracted since it is impossible to determine whether the tooth had fallen or was pulled out. No signs of dentistry were found on the teeth of the burials from Vastseliina borough cemetery.

#### DISCUSSION

There are several records from the Early Modern Period of people fallen in battle being buried in mass graves near the towns. So far, none of these burial sites have been discovered or they have been destroyed by later earthworks and construction works in Estonia. Only two mass graves older than the Modern Period (20th century wars), where people fallen in battle or as a result of any other act of violence have been buried, have been discovered in Estonia. The first was found in 2008 in Salme, Saaremaa, where two ships with 35 men fallen in battle were buried during the Pre-Viking Age (Konsa *et al.* 2009; Peets *et al.* 2011; Peets *et al.* 2013). The second was discovered in 2010 in Veibri, a village near Tartu (Lõhmus *et al.* 2011), where 10 slaughtered men were found in a mass grave dated to the mid-13th century. There is also information on several mass graves of possible soldiers in Narva Triumph Bastion, but the buried did not die in a conflict (Ööbik *et al.* 2015, 188). The discovery in Vastseliina is the third known mass grave of victims of violence and first mass grave dated to the Early Modern Period. The longest and bloodiest battle known in Vastseliina took place during the Livonian War when the Russian army besieged and defeated Vastseliina Castle in 1558 (Renner 2006, 47). Since during the 16th and 17th century Livonia was an active battle ground, it is not possible to determine exactly when the people were murdered.

Compared to other rural cemeteries in Estonia, Vastseliina stands clearly out based on the graves with multiple burials. Unfortunately, it has not been possible to determine the origin of the deceased but it is likely that the aDNA and stable isotope analyses provide more information on them in the future. In addition to the large number of multiple burial graves and skeletons with signs of violence, Vastseliina cemetery is also remarkable for the high percentage of male burials. The unusually large proportion of men and the amount of burials with peri-mortem injuries indicate that in addition to local people, also warriors and locals who died in battle near the castle have been buried to the cemetery. The mass grave discovered in Vastseliina cemetery is important also for the neighbouring areas, since similar mass graves related to battle have not been discovered neither in Latvia, Lithuania nor in Finland. The collective grave with six burials dating from the 16th to the 17th century both creates a perception of the brutal battles of the period, and also gives more information on the warfare, burial customs, and usage of weapons during the Early Modern Period.

## CONCLUSION

During the archaeological excavation 144 burials were documented. 109 single burials and two double burials were discovered. Also two collective burials and two mass graves with 31 burials were discovered in the cemetery. Compared to other rural cemeteries in Estonia, Vastseliina stands clearly out based on the graves with multiple burials. Five individuals in the mass grave no. 5 and the two males from one of the double burial had died a violent death – all of them presented with sharp force traumas. Collective burial no. 1 is the first mass grave likely related to an armed conflict dated to the Early Modern Period. In addition to mass grave and double graves, two individuals who died as a result of violence, were found in single graves. Deceased in the collective burials nos 2, 4, and in the mass grave no. 5 presented without sharp force traumas. It is likely that these people died as a result of an epidemic.

99 adult and 44 subadult skeletons were discovered in Vastseliina cemetery. Osteologically, 63 male and 35 female skeletons were sexed. In addition to the large number of multiple burial graves and skeletons with signs of violence, Vastseliina cemetery is also remarkable for the percentage of male burials. The unusually large proportion of men and the amount of burials with peri-mortem injuries indicate that in addition to local people, also warriors and locals who died in battle near the castle have been buried to the cemetery. The burials were studied for both dental and skeletal pathologies. As a result, it was noted that dental pathologies were overall more common than skeletal pathologies. Based on the grave goods, the cemetery can be dated to have been in use from the 15th century to the first half of the 18th century. Mass grave no. 1 is dated from the 16th to the 17th century, the period when several wars took place in Livonia.

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#### VASTSELIINA ALEVIKALMISTU JA 16.–17. SAJANDI ÜHISHAUA PÄÄSTEKAEVAMISED

Martin Malve, Mari-Anne Liblik ja Taisi Juus

Vastseliina alevikalmistu asub Vastseliina piiskopilinnuse ja Piiri kõrtsi vahelisel alal, Piusa jõe ja Meeksi oja ühinemiskohal, põhja-lõunasuunalisel looduslikul neemikul (jn 1). Arheoloogilised päästekaevamised toimusid seoses Vastseliina piiskopilinnuse keskaja teemapargi palverändurite maja ehitusega. Kaevamistel dokumenteeriti 144 matust, millest üles võeti 143. Üksikmatuseid oli 109. kaksikmatuseid kaks ning ühishaudu neli. Suurele matmistihedusele viitas luustike paiknemine ka kalmistuala järsul idanõlval. Peaaegu kõik surnud olid hauda asetatud selili-siruli asendis, kaks indiviidi oli maetud külili. Valdavalt paiknesid hauad ida-läänesuunaliselt. Erandlik oli luustik 55, mis paiknes võrreldes ülejäänud matustega risti, põhja-lõunasuunaliselt. 28 matust (25,7% üksikmatustest) oli sängitatud kirstus, tõenäoliselt oli tegemist laudkirstudega (jn 2). Kirstus matustele viitavad 20 surnu juures täheldatud kirstupuidu jäänused ning 18 luustiku juurest saadud kirstunaelad. Matus 23 kirstu jalutsi- ja küljelaua ühendamiseks oli kasutatud metallist nurka (jn 3). Märkimisväärne oli matus 36, kus surnu parema mediaalse talbluu sisse oli löödud kirstunael (jn 4). Lisaks 28 kindlalt kirstus maetule võis surnukeha luude paiknemise järgi hauas öelda, et kirstus oli maetud veel u 12 surnut (kokku u 40 luustikku). Käte asendit sai määrata 53 luustikul - enamasti olid käed kehale asetatud, ühel juhul olid need sirgelt maetu kõrval.

Kalmistult avastati neli ühishauda, milles oli kokku 31 surnut. Ühishauda 1 oli sängitatud kuus indiviidi (jn 5) – kolm meest, kaks naist ja üks nooruk. Ühishauas 2 olid osaliselt säilinud ühe võimaliku täiskasvanud naise ja kahe alaealise luustikud. Ühishaud 4 oli saanud ülematmistega kannatada ja seal õnnestus tuvastada kahe naise, ühe mehe ja ühe alaealise säilmed. Kõige suurem, ühishaud 5 (jn 6), jäi osalt kaevandi alalt välja, mistõttu seda terviklikult ei avatud. Ühishauas 5 tuvastati kaks meest, kaks naist ja 13 alaealist.

Panuseid esines 22 surnu juures, kokku 30 leidu. Kõige varasem leidude põhjal dateeritud luustik oli matus 106, kelle juurest saadi 15. sajandi keskpaigast pärinev šerf. Matus 14 sõrmedes oli kokku neli pitsatsõrmust, mis pärinevad 16. sajandi II poolest ja 17. sajandist (jn 7: 1–2). Kalmistult leiti mitmeid rullotstega hoburaudsõlgi, mis pärinevad 16. sajandist ja 17. sajandi algusest (jn 7: 3). Täiskasvanud mehe rinnalt (matus 69) avastati lamedate degenereerunud liilia- või loomapeaotstega hoburaudsõlg (jn 7: 4), mis pärineb 15. sajandist. Kahele matusele (43 ja 47) oli kaasa pandud denga, vastavalt 1737. ja 1748. aastast. Matuste 47 ja 48 juures olid samasse perioodi kuuluvad õigeusu kaelaristid. Rõivastusega seotud esemetest leiti üks pannal. Külakalmistule iseloomulikud nö talupoeglikud leiud nagu sõled ja noad viitavad maetute kohalikule päritolule. Kalmistu võib leitud hauapanuste järgi ajaldada 15. sajandist kuni 18. sajandi I pooleni. Ühishauast 1 leiti matus 6 rinnalt ripats (jn 7: 5) ja vasaku käe sõrmest pitsatsõrmus ning matus 9 vaagna piirkonnast nuga (jn 7: 6). Nende leidude järgi pärineb ühishaud 16. sajandi II poolest või 17. sajandist. Ühishauast 5 leiti esemeid kahe surnu juurest: matus 102 juurest 15. sajandisse kuuluv laia kilbiga sõrmus (jn 7: 7) ja matus 112 juurest tõenäoliselt 15.–16. sajandisse kuuluv rullotstega hoburaudsõlg. Ühishaud 5 pärineb tõenäoliselt 15.–16. sajandist. Üksikleidudena saadi 13.-14. sajandist pärinev ristripats (jn 7: 8), pandlaid ning 17.-18. sajandist pärinevaid vitssõlgi ja -sõrmuseid.

Analüüsitud Vastseliina alevikalmistu valimik koosnes 99 täiskasvanust (69,2%) ja 44 alaealisest (30,8%) (jn 8). Täiskasvanutest olid 63% mehed (neist kolm võimalikud mehed) ja 35% naised (neist neli võimalikud naised) ning ühe täiskasvanu puhul polnud luude vähesuse ja fragmentaarsuse tõttu sugu võimalik määrata (matus 107). Erinevalt samaaegsetest tavakalmistutest torkab silma selge meestematuste ülekaal. Meeste suurem hulk on seotud tõenäoliselt kalmistu asukohaga linnuse kõrval. Viis indiviidi ühishauast 1 ja kaks meest kaksikmatusest olid surnud vägivaldselt. Ühishaudadesse 2, 4 ja 5 maetute puhul ühtegi terariistaga tekitatud vigastust ei tuvastatud. Tõenäoliselt on need inimesed surnud mõne haiguspuhangu tagajärjel.

Ühishauas 1 asunud kuuest luustikust viiel tuvastati osteoloogilise analüüsiga kokku vähemalt 38 lõikejälge, millest enamik oli koljuluudel (jn 9). Ülejäänud skeletiosadel – roietel, aba- ja puusaluul (jn 10) – avastati vaid üksikuid haavu. Enamik vigastusi asus kolju kuklaosas. Selline traumade asukoht võib viidata põgenemisele, kus ohvreid on rünnatud selja tagant. Lisaks ühishauale ja kaksikmatusele leiti kahe vägivaldselt surnud mehe skeletid ka üksikhaudadest. Segatud inimluude hulgast leiti samuti kaks surmaaegsete lõikejälgedega koljut. Kokku tuvastati Vastseliina alevikalmistult 11 indiviidi, kelle skelettidel olid terariista lõikejäljed.

Hambahaigustest uuriti hambakivi, kaariest, emaili hüpoplaasiat, periapikaalseid (hambajuurt ümbritsevaid) tühimikke, lõualuude taandumist ja surmaeelset hammaste väljalangemist. Hambad või hambasombud olid säilinud 81 matusel; infot saadi 1798 säilinud lõikunud hamba, sh 119 piima- ja 1679 jäävhamba, 84 eluajal väljalangenud ning 168 surmajärgselt kaduma läinud hamba, samuti 161 lõikumata hamba kohta. Üheksa matuse puhul leiti hambumuses väärarenguid, sh luustik nr 31, kellel tuvastati hammaste ektoopiline lõikumine (jn 11). Hammaste või sompudega luustikest 92,6% esines vähemalt üks hambapatoloogia, neist sagedaseim oli hambakivi (jn 12). Jälgi hammaste parandamisest ei leitud. Sarnaseid uuringuid on senini avaldatud viie samaaegse, kesk- ja varauusaegse kalmistu matuste kohta (jn 13, 14). Demograafiliselt on Vastseliinaga võimalik võrrelda neist kahte: Tartu Püha Jakobi ja Hargla vana kihelkonnakalmistut (jn 15). Võrreldes teiste kalmistutega esines hambapatoloogiad Vastseliina täiskasvanud maetute hulgas vähem, va hambakivi.

Vastseliina alevikalmistu eristub selgelt teistest Eesti maakalmistutest mitme luustikuga haudade rohkuse poolest. Lisaks vägivallajälgedega luustikele on Vastseliina kalmistu puhul tähelepanuväärne ka meeste skelettide arvukus. Meheluustike tavatult suur osakaal ning surmaaegsete vigastustega surnud näitavad, et lisaks kohalikele elanikele on kalmistule maetud ka linnuse juures peetud lahingutes langenud sõjamehi.