

Archaeological studies at the site of the new Narva border station

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INTRODUCTION

The fieldwork at the new border station in the present Peetri square and Vestervalli street in Narva started in July 2014, lasted until November 2014 and was run by OÜ Agu EMS. During the construction work, an area of about 4000 m² was monitored, which includes approx-

imately 750 m² where excavations were made (Fig. 1; 3). The new border station was planned to an area, where human activities were known for hundreds of years: it was just west of the medieval town wall and early modern town fortifications were certainly known in the area. Despite that, neither desktop assessments nor preliminary studies were undertaken and human remains and different structures were found during construction work. Thus, archaeological excavations had to be started immediately at the area planned for the post holes of the new building. Parallel to and after the excavations, monitoring work was carried out to identify and locate construction remains, mainly belonging to the fortification system.

The archaeologically investigated area can be divided into two parts: the site chosen for the new building, where excavations took place; and the carport and the road area, where fieldwork was limited to monitoring and documenting. Over 35 postholes/ trenches $(2.5 \times 3 \text{ m})$ were planned for the construction of the new building, but only 22



Fig. 1. Situation plan of the trenches dug in 2014 (see Fig. 3 for location).

Drawing / Joonis: Paul Ööbik

Jn 1. 2014. aastal kaevatud šurfide asendiplaan (paiknemine vt jn 3).

could be executed, because one row of postholes was situated on top of the discovered flank wall which had to be preserved. This led to redesigning the whole buildings foundation from the originally planned post foundation to a pile foundation, which allowed adjusting the location of the piles to avoid damaging the existing remains of the structures. By the end of October the excavated posthole area was refilled and the ground level was raised by approximately half a metre.

The found fortification system and human skeletal remains offered us a lot of new information and they are discussed in more detail below by Ragnar Nurk and Martin Malve respectively.

MEDIEVAL AND POST-MEDIEVAL FORTIFICATIONS

In the present townscape of Narva the research area forms one of the few gaps in the otherwise well preserved zone of fortifications (Fig. 2). The excavations brought to light fragments of various stages of development of the Narva fortifications (Fig. 3). The main research area between the present Peetri square and the Vestervalli street is located in the area in front of the medieval castle and town wall that was complemented with rampart fortifications in the Post-Medieval Period (about the architecture history of Narva in general, see: Karling 1936; Kochenovskij 1991). The general location of the fortifications could quite adequately be predicted already before the excavations, relying upon historical plans, but now their exact placement was recorded, which hopefully helps to plan better future earthwork in this area. Also some construction-technical data was obtained and some surprising wall fragments were found which original function is unknown.

The late medieval defense system in this area included the western bailey of the fortress and the western section of the town wall. The surrounding wall of the castle, together with the artillery tower, *Rondelle*, built at its north-western corner probably at the turn of the 15th and 16th centuries, are preserved, while nothing of the town wall can be seen on the ground, with the exception of a stump at the northern side of the *Rondelle*. As a result of the Russian-Livonian War (1558–1583) Narva, which formerly had belonged to the Livonian Order, came into the possession of the Swedish kingdom. The medieval surrounding wall was complemented with some bastions of Italian type in the decades immediately after the war (*ca.* 1581–1634). The given section between the two bastions – Vanavall (Eng. 'Old Rampart') in the north and Kristervall in the south – remained basically unaltered and evidently the above mentioned artillery tower also retained, for the time being, a certain military importance. In the 1650s–1670s the first ravelin was built on the outer bank of the formerly existing ditch to reinforce the section between these two bastions.

Relatively few wall fragments, discovered during the excavations, belong to the described construction stage, i.e. when the medieval core was still fortified, without expanding the defendable area. The Middle Ages are represented by only a small wall fragment (2.48 m wide, Fig. 4), discovered in a location near the crossroads of the Peterburi road and Vestervalli street, where once the town wall could have run, or, to be more accurate, the wall section between the town wall and the western bailey of the castle, which blocked the access to the valley (ditch) between the castle and the town. The wall had been built on a limestone bluff (21.21 m above sea level) and is preserved in the discussed place to the height of 1 m. On the western side the decline of the bottom of the ditch could be observed. The depth of the ditch and the exact location of the opposite bank could not be established during the excavations. The historical section drawings, e.g. the plan of the fortress from 1681 (KrA:0406:28:031:015;

published: Karling 1936, Abb. 65), do not allow to decide for certain whether in this part of the ditch the counterscarp was built as a wall to the whole length or was it just cut out of limestone bedrock.



- - Earlier ditch / Varasem vallikraav
- Later post-medieval fortifications / Hilisemad uusaegsed kindlustused (1681–1864)
- 🗕 Later ditch / Hilisem vallikraav

Fig. 2. Schematic reconstruction of the SW-part of the fortifications of Narva. 1 – western bailey of the castle, 1a – NW-tower (Rondelle), 2 – town wall, 3 – Viru Gate, 4 – Old Rampart bastion, 5 – Kristervall half-bastion, 6 – old ravelin (1650s – 1670s), 7 – Triumph bastion (1680s – 18th c.), 9 – new (1st) ravelin (18th c.).

Jn 2. Narva edelakülje kindlustuste skemaatiline rekonstruktsioon. 1 – linnuse lääne-eeshoov, 1a – loodetorn (Rondeel), 2 – linnamüür, 3 – Viru värav, 4 – bastion Vanavall, 5 – poolbastion Kristervall, 6 – vana raveliin (1650.–70. aastad),

7 – bastion Triumph (1680. a-d – 18. saj), 8 – bastion Fortuna (1680. a-d – 18. saj), 9 – uus (1.) raveliin (18. saj).

Drawing / Joonis: Ragnar Nurk



Medieval / Keskaeg (–1558)

- Post-medieval fortifications / Uusaegsed kindlustused (– ca. 1800)
- Peter's Gate / Peetri värav (ca. 1822)

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Buildings / Hooned (mostly / peamiselt 1864–)
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- **Fig. 3.** Situation plan of the wall fragments found from the site of 2014. 1 chapel (?) walls, 2 town wall fragment, 3 wall fragments on the outer bank of the earlier ditch, 4 scarp wall fragment of the earlier ravelin (1650s 1670s), 5 scarp wall of the flank of Triumph bastion (after 1704), 6 scarp wall of the face of Triumph bastion (after 1704), 6a hewn limestone lining, 6b limestone gutter, 7 Peter's Gate, inner façade, 8 building wall against the town wall, possibly earlier than others, 9 pre-WWII buildings (–1944), 10 Soviet period cinema foundations, 11 area shown on Fig. 1.
- Jn 3. 2014. aasta kaevamistel leitud müürifragmentide asendiplaan. 1 arvatava kabeli müürid, 2 linnamüüri fragment, 3 – ringmüüriesise vallikraavi väliskaldal paiknevad müürifragmendid, 4 – varasema raveliini (1650.– 1670. a-d) eskarpmüüri fragment, 5 – Triumphi bastioni flangi eskarpmüür (pärast 1704), 6 – Triumphi bastioni fassi eskarpmüür (pärast 1704), 6a – tahutud paekivist vooder, 6b – paekivist renn, 7 – Peetri värav, sisefassaad, 8 – vastu linnamüüri ehitatud hoonemüür, võimalik, et teistest varasem, 9 – Teise maailmasõja eelne hoonestus, 10 – nõukogudeaegse kinohoone vundamendid, 11 – jn 1 kujutatud ala.

Drawing / Joonis: Ragnar Nurk

Approximately in line with the western side of the present Vestervalli street we came across several wall fragments, which were situated near the expected location of the outer bank of the ditch, either confluent or, in one case, transverse to it. Probably they are related to some buildings on the outer bank of the ditch. The fragments of extremely poor masonry, about 1–1.5 m wide, were preserved to the height of only some stone layers. On a relatively reliable historic plan, dating from 1650, compiled by Hindrich Seulenburg (KrA:0406:28:031:007; published: Karling 1936, Abb. 19), some structures of unspecified purpose are depicted immediately on the outer bank of the ditch in this section - possibly either dugouts in the bank of the dry ditch and/or stairs from the bottom of the dry ditch up to its outer bank.

Temporally the next find was a very small fragment of the scarp wall of the so-called old ravelin, more accurately its north-western front (face), which has been studied more exhaustively by Aleksandr Nikitjuk in 1997 (Nikitjuk 1997), when his excavation was located slightly northeast of this year's plot.

The construction of the Fortuna and Triumph bastions of the south-east part of the fortification zone started in the middle of the 1680s according to the large-scale project of the modernization of the bastion zone of Narva, compiled by the talented Swedish



Fig. 4. Town wall fragment. **Jn 4.** Fragment linnamüürist. Photo / Foto: Guido Toos



Fig. 5. Outer façade project for the Peter's Gate, 1822. **Jn 5.** Peetri värava välisfassaadi projekt 1822. aastast. (*RGVIA 349-19-4824*. Reproduction from: Kochenovskij 1991, Fig. 1.94)

fortification-engineer Erik Dahlberg. They constitute a part of the new ring of bastions on the northern and western sides of the town, which were naturally less protected and where 6 bastions together with 5 ravelins were to be built. This plan was largely realized. By 1700, when the Great Northern War began, the earthen parts of the new defence constructions on the south-eastern side of the town were basically completed, but the scarp walls were left to be built after the war, i.e. by the Russians, who finally captured the town in 1704, after the second siege. The scarp walls of the bastions on the northern side of the town, built during the Swedish reign, had vaulted galleries in the lower part, designed by Dahlberg (in Narva they served as gun casemates manned with gunmen, and countermines that could be blasted in the worst emergency together with the attackers). In south-eastern section the Russians built scarp walls without galleries. Already in Dahlberg's project one of the two town gates was designed in the middle of the curtain between the Fortuna and Triumph bastions (the other was built on the northern side of the town). Actually the western gate was built by the Russians only in 1822 – it was known as Peter's Gate (Fig. 5). Later, in 1864, the territory of the ring of

bastions was turned over to civil use. In the course of later town planning, Peter's square has been designed here, beyond the historical town core, together with the St. Petersburg road that runs through the former fortification zone and the valley between the castle and the town, to the bridge on the Narva River.

In connection with the new ring of bastions, fragments of the straight curtain wall between the Triumph and the Fortuna bastions, and of the scarp wall belonging to the southern flank of the Triumph bastion were recorded. The unearthed part of the scarp wall of the Triumph bastion generally followed the direction of the part of the scarp wall of the same flank, visible above the ground and restored during the Soviet period. The wall was about 1.1–1.3 m wide in the flank part and about 1.9–2.3 m wide in the curtain part. During the fortress period only the side facing the ditch, i.e. the south and west side, was visible. In a few places on the curtain wall, a slightly slanting lining (facade surface) of neatly hewn limestone of this side had preserved, particularly it was in the section in front of the Peter's Gate (Fig. 6). Later, at the end of the 19th and the beginning of the 20th century cellars of dwelling houses were built at the one-time ditch side of the curtain wall, so that the scarp wall served as one of the cellar walls. Before that the valuable lining of hewn stones was removed. The other (inner) side of the scarp wall was originally concealed by the earthwork. At certain intervals – on the flank at about every 6 m and on the curtain at about every 11–12 m – there were buttresses on the inner side of the wall. These were about 2 m wide along the wall, and projected about 1.5 m. Decided by different architecture it cannot be precluded that the scarp walls of



Fig. 6. Scarp wall of the curtain together with its partly preserved outer lining and later annexes. View to the direction of the Triumph bastion.

Jn 6. Kurtiini eskarpmüür koos selle osaliselt säilinud välisvooderdusega ja hilisemate lisandustega. Vaade Triumphi bastioni suunas.

the flank and curtain were built in different stages. The preserved part of the flank wall was characterised by the fact that in its lowest part it was built as a cover for the terrace cut in the bedrock, and widened only in the upper part on the inner side. Apparently during the Swedish period the scarp consisted of the limestone terrace in the lower part and the naturally slanting earthen rampart in the upper part. The earthwork of the bastions on the studied site had been destroyed already earlier, and so we were unable to record the profile of soil layers constituting the earthwork. In connection with the construction of the scarp wall the outer side of the fortifications became considerably steeper, and evidently some extra space was gained on the top of the fortification. The walls the Russians built, observed to the height of 1–2 m, surprise with their modest thickness. Relying upon the historical section drawings (RGAVMF 3-25-82, profile 4 – Triumph S-flank (vear 1747); RGAVMF 3-25-189-190, profile 3 - curtain (year 1752)) scarp walls existed in this section in the mid-18th century and their original height was about 5-8 m (the curtain wall was higher for an unknown reason). At the inner side of the scarp wall of the curtain a gutter with limestone walls was recorded, running aslant to the curtain wall and being possibly older than the latter (Fig. 7).

Lots of fragments of the foundations of both side walls of the Peter's Gate were also discovered (Fig. 8), which extended from the inner side of the curtain up to its scarp wall. The length of the passage that, despite common defence logic, ran completely straight perpendicularly through the curtain wall was measured to be about 29 m and its width was about 6 m – originally the passage had been vaulted (the width of the foundations was about 1.5–2 m). Also some fragments of the soil-supporting side walls of the inner passage to the gate were uncovered. Its walls had been splayed, not parallel, narrowing towards the vaulted part of the gate.



Fig. 7. Gutter visible in the inner side of the scarp wall of the curtain.

Jn 7. Kurtiini eskarpmüüri siseküljel nähtavale tulnud renn. Photo / Foto: Paul Ööbik



Fig. 8. Wall fragments of the inner façade of the Peter's Gate. View to the direction of the castle.

Jn 8. Peetri värava sisefassaadiga seotud müürifragmendid. Vaade linnuse suunas. Photo / Foto: Paul Ööbik



Fig. 9. Possible chapel remains and grave slab in secondary use.

Jn 9. Võimaliku kabeli müürid ja sekundaarses kasutuses olev hauaplaat. Photo / Foto: Paul Ööbik

Photo / Foto: Paul Ööbik



Fig. 10. Mass grave in trench 1. **Jn 10.** Ühishaud šurfis 1. Photo / Foto: Anneli Kalm

THE CHAPEL AND THE CEMETERY

According to the written sources, a chapel was located outside the town wall northwest of the castle (Karling 1936; Süvalep 1936), but the precise location of it is not mentioned. During fieldwork we saw a structure, which might - by the location, size and medieval finds - be the remains of the mentioned chapel (Fig. 9). The found foundation was built of small limestones using lime mortar. The widest part of the foundation wall reached up to 115 centimetres, the height of the preserved walls was between 90 and 110 centimetres. The approximate outer measures of the chapel were 8×6.5 metres, the top of the foundation remains and grave slab as well were situated today around 24.60 m a.s.l. From seven of the excavated trenches, human remains and articulated burials were found, which most likely originate from the cemetery of the chapel. Moreover, six burials were found during the construction works of the old border station in 1996–97 (Nikitjuk 1997). These finds indicate a greater extension of the cemetery towards the river, no burials were found at this area this year. Apparently the area belonging to the cemetery was once bigger, but it was destroyed with the construction of 19th - 20th-century buildings, which were dug deep into natural slate. Unfortunately no data about finding burials during this work is available.

The majority of the excavated graves were orientated west-east with heads to the west. There were a few single burials with heads oriented to the east (no. 12 (trench 7)), but more were found in mass inhumations (nos. 6 (trench 1), 9 (trench 1)) (Fig. 10). Altogether 5 different mass graves were recorded in trenches 1, 2, 3 and 13, the biggest of them was found from trench 2, consisting of 5 burials (Fig. 11). In trench 13 a burial was found (no. 7 (trench 13)), which consisted of an adult female and an infant on her chest. Most of the inhumations were single, laying on their back in a stretched position with hands crossed on the chest. In one case (no. 3 (trench 3)), we suspected that the deceased was wrapped into fabric because the pelvic bones were compressed to each other, although no fabric was found from any of the burials. Traces of coffins were also found infrequently, only in few cases wood and coffin nails were found (nos. 15 (trench 2), 16 (trench 2), 19 (trench 7)).

It is known that the chapel was a rare example in the sense that it was open for public, not closed like other chapels in the convents inside order castles. According to Karling (1936) Tallinn had donated three marks every year since 1392 for maintaining the chapel, which might have been demolished in 1510. Next to the mentioned structure a grave slab in a secondary use was found (Fig. 12). It was possible to see a few letters written arced on the grave slab, but not enough to understand it. It seemed to us that it might just be a part of a bigger grave slab, which had been comprised of several slabs. It is indicated mainly by the writing on it, which starts from the very edge, while there is lots of free space on other parts of the slab. The slab was lifted and will be exhibited in the new border station house. During the lifting of the slab and its excavation work, a gutter was revealed which was connected with the possible chapel. The walls and the bottom of the gutter were made of limestone.

Fig. 12. Discovered grave slab. Text on the left side. Jn 12. Leitud hauaplaat. Kiri vasakul serval. Photo /Foto: Paul Ööbik

THE HUMAN SKELETAL REMAINS

An assemblage consisting of 94 skeletons was recovered from the site and was available for osteological analysis¹ (Malve 2015). Besides *in situ* material 10 skeletons were identified and analysed from the mixed material.² All gathered commingled bones were also osteologically studied.



Fig. 11. Mass grave in trench 2. **Jn 11.** Ühishaud šurfis 2. Photo / Foto: Anneli Kalm



¹ The sex of the adults was estimated using cranium and pelvic dimorphism (Buikstra & Ubelaker 1994, 16–20). In case the mentioned skeletal parts were absent or fragmentary, maximum length of the long bones (Garmus & Jankauskas 1993, 5–23) and maximum lengths of the bones of the foot (talus and calcaneus) were used (Garmus 1996, 28). The age at death of the adults was determined by the morphology of the pubic symphysis (Todd 1920, 285–334; Todd 1921, 1–70; Brooks & Suchey 1990, 227–238), tooth wear stages (Brothwell 1981, 72) and changes in the joints (Ubelaker 1989, 84–87).

Sex determination for subadults was not attempted because clear sexual traits develop only in the end of puberty (Buikstra & Ubelaker 1994, 16). The age of the subadults was analysed by the development of the bones and epiphyseal fusion (Schaefer *et al.* 2009), eruption of teeth (Ubelaker 1989, 63–65) and the length of the long bones (Allmäe 1998, 183).

² The topmost mixed layer was removed by an excavator until the intact burials appeared. In the course of soil removal several skeletons were recovered and collected as mixed material.

Most of the skeletons were incomplete and had suffered truncation, mainly as a result of small trenches, grave digging, and previous construction work in the cemetery. The surfaces of the bones were in good condition with no peeling or erosion. In many cases bones (e.g. crania and ribs) were highly fragmented due to exhumations from the clayish and rocky soil. Partial skeletons and commingled bones were reburied after the analysis, well preserved skeletons were stored for future studies.

Out of 104 skeletons 81 belonged to adults (77.9%) and 23 to children or subadults (younger than 18). Comparing to contemporaneous cemeteries the proportion of children/subadults was unusually low (22.1%).

Sex

Interestingly the adults were not equally divided between the sexes. There were 61 males and two possible males (60.6% of the sample), 11 females and one possible female (11.5% of the sample). For six individuals (5.8%) sex could not be determined. Additionally two adolescent skeletons (nos. 1 (trench 1) and 16 (trench 7)) could be sexed, both belonging to males.

The large percentage of males is noteworthy because usually the numbers of men and women in medieval and early modern cemeteries are quite equal (e.g. Kose churchyard (Malve *et al.* 2014); Lohkva village cemetery (Roog & Malve 2013, 246)). The difference might derive from the fact that only a certain part of the community used the cemetery. This will be discussed below.

Age

Out of 104 skeletons 81 belonged to adults. The age categories were divided into nine stages (Table 1). Of the total of 70 aged adults, 26 individuals (37.1%) were young adults, having died at the age of 18–35 years, 23 (32.9%) had died at 35–50 years, and 10 (14.3%) belonged to the middle/old adult age category, who had died at the age over 40. Eleven individuals had died at 25–40 years (15.7%).

The peak age at death of men was in the 18–35 and 35–50 age groups (Fig. 13). Females were divided rather equally in adult age categories. The subadults included 12 children under the age of three years and seven between 3–12 years.



Fig. 13. Age at death by sex in different age groups.

Jn 13. Meeste ja naiste vanused surma hetkel erinevates vanuserühmades. Compiled by / Koostanud: Martin Malve

Stature

Height was estimated from the maximum femoral length using the formulae devised by Trotter (1970). The length of the femur of 35 men and six women could be measured. The ranges and means were as follows: 165.8–187.9 cm, 171.8 cm; 149.1–162.7 cm, 156.1 cm, respectively. Interestingly the height of two adult men exceeded 180 cm (nos. 14 (trench 2) 187.9 cm and 3 (trench 3) 181.5 cm). Mean statures, based on femoral length, for several Medieval and Early Modern sites are collected in Table 2. Compared to other analysed cemeteries, the men found in Narva were fairly tall, the average height was larger only among the men from the Early Modern period at Viljandi St John's churchyard. In contrast, the mean stature of the females was relatively low, which either could reflect the actual situation or may be influenced by the low number of female burials.

Age groups / Vanusegrupid	Age / Vanus	Number of individuals / Indiviidide arv	%
Infant / Väikelaps	0-3 y	12	11.5
Child / Laps	3-12 y	7	6.7
Adolescent / Nooruk	12-18 у	4	3.9
Young adult / Noorem täiskasvanu	18-35 y	26	25
Young / Middle adult / Noorem / Küpsuseas täiskasvanu	25-40 y	11	10.6
Middle adult / Küpsuseas täiskasvanu	35-50 y	23	22.1
Middle / Old adult / Küpsuseas / Vanem täiskasvanu	40+ y	10	9.6
Adults (indeterminate age) / Täiskasvanud (kindlaksmääramata eaga)	18+ y	11	10.6
Total / Kokku		104	100

Table. 1. Age at death for the burials found under the Narva Triumph bastion.**Tabel 1.** Narva Triumphi bastioni alt leitud maetute vanused surma hetkel.Compiled by / Koostanud: Martin Malve

Table 2. Mean statures from selected Medieval and Early Modern town cemeteries.**Tabel 2.** Keskmine kasv võrreldavatel kesk- ja varauusaegsetel linnakalmistutel.

Compiled by / Koostanud: Martin Malve

		Mean stature (cm)		
Site	Date	Male	Female	Reference
Viljandi St John's churchyard	14-16 cc	170.8	159.2	Kalling 1995
Viljandi St John's churchyard	16-18 cc	172.4	160.1	Kalling 1995
Pärnu	16-18 cc	169.6	157.2	Allmäe 2008a
Tartu St John's church and churchyard	13-14 cc	169.6	159.3	Kalling 1995
Tallinn	14–17 cc	169.9	158.1	Allmäe 2008b
Tallinn St Barbara	14–18 cc	166.4	155.3	Allmäe 2000
Narva	13–17 сс	171.8	156.1	Malve 2015

Pathologies³

Several diseases and traumas were recognised on the skeletons (see for details Malve 2015). This paper focuses on the injuries (Schmorl's nodes, fractures and cut wounds) found in skeletons, which could shed light on the lifestyle of the people buried at the cemetery.

Schmorl's nodes (intervertebral herniation) are thought to be caused by stress or strain to the spine during adolescence or early adult life. They are more common on males than

³ Pathologies were recorded after Ortner & Putschar (1985); Roberts & Manchester (2012).

females. At Narva they occurred on 35 individuals – 28 males (aged 18–45+ years), six females (aged 18–50 years) and one adult whose sex could not be determined (aged 19+ years).

Numerous cases of **trauma** were identified among the analysed group. Overall, the total of 19 adult individuals (out of 81) showed some form of skeletal trauma, which gives a crude prevalence rate of 23.5% among whom there were 15 men and four women.

15 individuals had sustained the total of 31 **fractures** (Table 3). Numerous healed fractures were recorded during osteological analysis. Males were more affected than females. The total of 11 males (17.5% of all males) aged 18–45+ years and four females (33.3% of all females) aged 30–50 years had fractures. Four individuals had multiple fractures affecting more than one bone (nos. 15 (trench 1), 11 (trench 2), 14 (trench 2), 4 (trench 5) and 7 (trench 5)). Multiple fractures can also be related to several diseases (e.g. osteoporosis). Most of the injuries were simple closed fractures and the majority were well healed and displayed no sign of infection. The axial skeleton (i.e. ribs, claviculae) and the arms (i.e. ulnae, radii and hand bones) were most frequently affected. Only two males had fractures in the femorae. Ribs were the most frequently broken bones. In one case, costal fracture had occurred not long before death and was still in the process of healing (no. 14 (trench 2)).

Among the mixed bones fragments of the right femur were found, which had pseudoarthrosis on the distal part of the shaft (Fig. 14). The fracture was very complicated and therefore

Table. 3. Summary of skeletal fractures. **Tabel 3.** Ülevaade luustikel leitud luumurdudest. Compiled by / Koostanud: Martin Malve

Skeleton no. /	Trench no. /	Sex /	Age /	Bone /	Zone /
Matuse III	Summ	Jugu	Vallus		ASUKOIIL
8	1	<u>6</u>	20-22 y	left ulna	distal
10	1	8	30-40 y	left clavicula	lateral
15	1	3	45-50 y	left ulna/radius	midshaft
15	1	3	45-50 y	left II metacarpal	distal
15	1	3	45-50 y	right/left X–XI ribs	midshaft
11	2	8	40-45 y	right III metacarpal	distal
11	2	ð	40-45 y	right III intermediate hand phalange	proximal
14	2	ð	35-45 y	right ulna/radius	distal
14	2	ð	35-45 y	right femur	proximal
14	2	8	35-45 y	left femur 1/3	proximal
14	2	8	35-45 y	right III–IV ribs, unhealed	midshaft
15	2	8	40-50 y	right VI rib	midshaft
17	2	8	18-20 y	left clavicula	lateral
4	3	8	40-50 y	left clavicula	midshaft
2	5	3	45+ y	left III–VI ribs	midshaft
3	5	Ŷ	30-40 y	right ulna	distal
4	5	Ŷ	40-50 y	right II rib	midshaft
4	5	Ŷ	40-50 y	right III proximal hand phalange	midshaft
7	5	8	18–22 y	left X rib	midshaft
7	5	8	18–22 y	left IV metacarpal	distal
13	5	Ŷ	35-45 y	right X rib	midshaft
12	7	Ŷ	35-45 y	V–VI thoracic vertebra	body
2	13	8	25-30 y	right humerus	distal

it is remarkable that the individual had survived such a trauma. The polished and smooth surface of the new joint suggests that even after the injury, the individual had been actively using the leg.

Blunt force trauma to the skull was noted in five adult males aged 17–50 years (Table 4). These were mostly small single circular healed injuries, but in two cases there were more than one lesion on the cranium. Usually traumas were on the anterior surface of the frontal bones: right side (n=2) and left side (n=3). Two males had received a blow also to the right parietal bone. It was not possible to establish whether these were sustained by accident or as an act of violence.

An adult male of 40–50 years (no. 3 (trench 4)) had two **cranial wounds** on the left parietal bone (Fig. 15). The blows had not penetrated the inner table. The edges of the cut were clean and had the same colour as the rest of the skull. The wounds had no signs of healing, indicating that they were *peri mortem* cuts. As the edge of the cut was clean, it was caused by a very sharp-edged weapon, such as a sword. The first cut was longer (62.42 mm) compared to the second wound (30.34 mm) which crossed the previous one. It is difficult to say whether the man was killed due to the blows on the cranium or the fatal blow was received in another area of the body.

Table 4. Summary of depressed traumas on crania. **Tabel 4.** Ülevaade koljude lohukujulistest vigastustest. Compiled by / Koostanud: Martin Malve

Skeleton no. / Luustiku nr	Sex / Sugu	Age / Vanus	Bone / Luu	Size / Mõõtmed (mm)
1 (trench 2)	3	25-35 y	left frontal bone	19 × 21
1 (trench 2)	3	25-35 y	left frontal bone	15 × 23
6 (trench 2)	3	17-25 y	right frontal bone	14 × 21
10 (trench 2)	3	22-30 y	right parietal bone	33 × 46
15 (trench 2)	3	40-50 y	right frontal bone	18 × 21
2 (between trenches 7 and 3)	3	40-45 y	left frontal bone	28 × 10
2 (between trenches 7 and 3)	3	40-45 y	right parietal bone	9×7





Fig. 14. Pseudoarthrosis that had formed in the distal part of the right femur. Jn 14. Ebaliiges parema reieluu distaalses osas.

Photo / Foto: Martin Malve

- **Fig. 15.** Adult male cranium with two cut wounds on the left parietal bone.
- **Jn 15.** Kaks terariista lõikejälge täiskasvanud mehe kolju vasakul kiiruluul.

Photo / Foto: Martin Malve

DISCUSSION

The big number of young male burials found under Narva Triumph bastion was noteworthy, compared to the small ratios of women and subadults. It is not easy to interpret such a difference; however, some explanations can be suggested.

First of all, women and subadults could have been buried mostly to some other parts of the cemetery. Alternatively the proportion of men simply could have been higher in that community. This is seen, for example, among medieval burials from Tartu St John's church, where it has been associated with immigration (e.g. merchants, craftsmen) (Kalling 1995, 50). However in the case of Narva, the cemetery was located outside the town walls, where the burial ground was used by people who lived either in a suburb or in the surrounding villages. They also could have been peasants who had come from rural areas to the town to find a better living. Those people, most often men, had a low status and usually their work was simple and physically challenging. They were buried in the cemeteries which were outside of the Medieval and Early Modern town wall rather than inside the town. Also numerous healed traumas were identified on skeletons, which may be associated with hard physical labour and more dangerous nature of their activities.

It is also possible that the buried people were prominent Catholics or soldiers of higher rank, although all the noticed traumas on the bones suggest otherwise. Such upper class burials have been mentioned in written sources connected to St Catherine's chapel just outside the castle in Viljandi (Vabamäe & Alttoa 1999).

Thirdly, several researchers have observed significant numbers of young adult men buried in the cemeteries connected with execution sites (see Stirland 2009, 34; Heapost 1995, appendix 9). However, since the burials of subadults (including infants) were detected in the cemetery, the burial ground cannot be connected with executions. Also no traces of execution (such as fractured cervical vertebrae due to hanging or cut marks indicating decapitation) were detected on the skeletons during osteological analysis.

The most likely explanation is that the cemetery was a burial ground for soldiers. Several identified traumas in the skeletons may indicate to the men of war. From Pärnu 18th century Russian St Alexander Nevsky garrison cemetery, also a number of healed traumas and fractures on skeletons were documented (Malve 2012). Since most of the men were from the mass graves, they might have been killed in a battle (e.g. Veibri mass grave; Lõhmus *et al.* 2011). But in Narva only one man had *peri mortem* injuries which can be associated with a sword-fight so it is impossible to connect it with a certain event. Possibly this could be the burial ground for the warriors and hospital, where the dead soldiers, who had deceased due to an outbreak of some infectious disease, were buried. For example according to the written sources about 200 soldiers died after pestilence in Tartu garrison (Laidre 2008, 101).

The large number of young male burials with several traumas (Schmorl's nodes, fractures and cut wounds) makes this cemetery very intriguing and offers several interpretations. Most likely the Narva burial ground was used as a cemetery for soldiers. But the burial ground was also used by civilians, as several women and subadult graves were found there.

CONCLUSIONS

This study gives us a better understanding of both the Medieval and Early Modern townscape of Narva. The amount of *in situ* burials and fragments of the foundation in the area allows us to suggest that we have found the medieval St Antony's chapel, which is mentioned in

various sources. Although the found 19th – 20th-century buildings have probably destroyed a part of the excavated cemetery, we now can firmly circumscribe the cemetery borders at this part of the town. The total number of burials – 104 – indicates that the found and excavated cemetery outside the city wall may have been used by the Narva soldiers. This is indicated by the amount of different injuries on skeletons and the overall quantity of male burials compared to women and children.

Monitoring works in the carport area gave us a better view of Narva's early-modern fortification system and allowed us to document it more precisely. Locating one of the 19th-century Narva's symbols, the Peter's Gate, may be called a pleasant surprise as well.

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ARHEOLOOGILISED UURINGUD NARVA UUE PIIRIPUNKTI ALAL

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Arheoloogilised uuringud Narva uue piiripunkti alal algasid 2014. aasta juulis inimsäilmete leidmise tõttu ehitustööde käigus. Kokku kestsid välitööd ligi 4000 m² objektil, millest arheoloogilisi kaevamisi teostati umbes 750 m² suurusel alal (jn 1; 3), sama aasta novembrini. Selle aja jooksul kaevati piirivalve uue hoone postvundamendi rajamiseks vajalikest aukudest välja *in situ* 94 luustikku, lisaks sellele leiti samalt alalt ka keskaegse hoone müürid, mida võib pidada kirjalikes allikates mainitud Püha Antoniuse kabeliks (jn 9). Oletatavate kabelimüüride kõrvalt leiti ka sekundaarses kasutuses olev hauaplaat, millel olid säilinud üksikud tähed (jn 12). Järelevalvetöödel tuvastati ning dokumenteeriti Narva linna varauusaegsed kaitserajatised ning suudeti ka kindlaks määrata 19. sajandil rajatud Peetri värava asukoht ning ehitusviis.

Praeguses Narva linnapildis moodustab uuringute ala ühe vähestest lünkadest muidu nii hästi säilinud kindlustusvööndis (jn 2). Kaevamistel tuli nähtavale fragmente Narva kaitseehitiste mitmetest arenguetappidest (jn 3). Põhiline uuringute ala praeguse Peetri platsi ja Vestervalli tänava vahel paikneb keskaegse linnuse ja linnamüüri esisel alal, mida uusajal täiendati muldkindlustustega. Kaitseehitiste üldist paiknemist oli võimalik juba enne kaevamisi ajalooliste plaanide põhjal ennustada, ent mõnede leitud müürifragmentide funktsioon jääb lahtiseks.

Keskaegse linnatuumiku kaitsmisele keskendunud ehitusetapist (aastani 1680) pärinevad vähesed kaevamistel leitud müürifragmendid. Keskaega kuulub vaid arvatav linnamüürifragment (laiusega 2,48 m, jn 4) Peterburi mnt ja Vestervalli tn ristmiku põhjanurga lähedusest. Umbes praeguse Vestervalli tänava läänekülje joonel satuti mitmetele väheldastele kehvas laos müürifragmentidele, mis on arvatavasti seotud mingite vallikraavi väliskaldal paiknenud ehitistega. Ajaliselt järgmine leid oli väga väike fragment siinse nn vana raveliini eskarpmüürist, täpsemalt selle loodepoolsest esiküljest (fassist).

Narva kindlustusvööndi kaguosa bastioneid Fortuna ja Triumph hakati ehitama 1680. aastate keskpaiku vastavalt tuntud Rootsi fortifikatsiooni-inseneri Erik Dahlbergi Narva bastionaalvööndi moderniseerimise projektile. Selle, uuema bastionaalvööndiga seoses fikseeriti fragmente eskarpmüüridest, mis kuulusid Triumphi bastioni lõunapoolsele flangile ning selle ja Fortuna bastioni vahelisele kurtiinivallilõigule. Eskarp ehitati selles lõigus müürina välja alles Vene perioodil, hiljemalt umbes 18. sajandi keskpaigaks. U 1–2 m kõrguses säilinud muldkindlustuste eskarpmüüri laius flangi osas oli u 1,1–1,3 m ja kurtiini osas u 1,9–2,3 m (sh puhtalt tahutud paekividest voodriosa u 40 cm, vt jn 6). Hiljem, 19. saj lõpus – 20. saj alguses olid kurtiinimüüri kunagisele vallikraavi poolsele küljele ehitatud ühe elumaja keldriruumid – eskarpmüüri oli ära kasutatud nende ühe seinana. Enne seda oli hinnaline raidkivivooder eemaldatud. Eskarpmüüri teine külg oli algselt muldkehaga varjatud. Flangil u iga 6 m järel ja kurtiinii u iga 11–12 m järel olid müüri sise-küljel kontraforsid. Erineva arhitektuuri põhjal otsustades ei saa välistada, et flangi- ja kurtiinimüür pärinevad eri ehitusjärkudest. Kurtiini eskarpmüüri siseküljel fikseeriti ka üks paekivist seintega renn, mis paiknes kurtiinimüüri suhtes poolviltu ning võis olla sellest varasem (jn 7).

Samuti leiti hulk fragmente Peetri värava (ehitatud u 1822, jn 5) mõlema külgseina vundamentidest (jn 8), mis ulatusid vastu kurtiinimüüri ja olid sellest hilisemad. Tavapärasest kaitseloogikast erinevalt risti läbi kurtiinivalli kulgenud käigu pikkus oli u 29 m ja laius u 6 m – kindluse perioodil oli see käik võlvitud (vundamentide laius u 1,5–2 m).

Välitööde käigus koguti ja võeti üles 94 luustikku, lisaks tuvastati osteoloogilise analüüsi käigus veel kümne indiviidi säilmed. Läbi vaadati ka kõik segatud inimluud. Tervemad skeletid säilitati edaspidisteks uuringuteks. Enamik leitud matustest olid väikeste šurfide, ülematmise ning varasema ehitustöö tulemusena mittetäielikud. Samas oli võimalik tuvastada erinevatest šurfidest mitmeid ühishaudu (jn 10–11).

Leitud 104st matusest 81 olid täiskasvanud ning 23 lapsed ning kuni 18-aastased, mis näitab võrreldes teiste kalmistutega ebatavaliselt väikest alaealiste osakaalu (vt tabel 1). Täiskasvanute hulgas esines ebaproportsionaalselt palju mehi (61), naisi tuvastati vaid 11. Vanuserühmadest esines arvukamalt suhteliselt noores eas (18–35 a) maetuid mehi (vt jn 13). Naisi oli enam vähem võrdselt kõikidest vanusegruppidest. 12 last oli surnud enne kolmandat eluaastat ja seitse vanuses 3–12 aastat. Võrreldes teiste Eesti samaaegsete kalmistutega, olid siia maetud mehed küllaltki pikka kasvu (keskmine 171,8 cm), suurim kasv hinnanguliselt 187,9 cm (vt tabel 2).

Luustikel tuvastati rohkelt erinevaid patoloogiaid, millest lähemalt vaadeldi traumasid (luumurde ja terariista lõikejälgi). Arvukalt esines lülisamba vigastusi (nt Schmorli sõlmi), mida võib põhjustada noorpõlves tehtud pidev raske töö. Lülivahekettasonga tuvastati 28 mehel ja kuuel naisel.

Osteoloogilise analüüsi käigus avastati 19 isikul erinevaid traumasid (23,5% täiskasvanute arvust). Paranenud luumurde tuvastati 15 indiviidil: 11 mehel ja neljal naisel, kellel esines kokku 31 luumurdu (tabel 3). Neljal luustikul oli rohkem kui üks paranenud murd. Enamasti oli tegemist üksikute hästi paranenud kinniste murdudega. Kõige rohkem esines fraktuure kereosas, s.t roietel ja rangluudel ning ülajäsemeluudel (küünarvarre- ja kodar- ning sõrmede luudel). Vaid kahel mehel olid reieluude murrud. Kõige rohkem oli roiete paranenud vigastusi. Ühel juhul oli indiviid oli enne paranemisjärgus roideotste täielikku ühinemist surnud (nr 14 (šurf 2)). Väga huvitav vigastus tuvastati segatud luude seast leitud reieluul, mille distaalses osas oli pärast luumurdu tekkinud ebaliiges (jn 14). Liigese kasutamisest andsid märku selle ümardunud ja läikivad luuotsad. Viiel mehel esines koljuvigastusi, need paiknesid peamiselt otsmikuluudel (tabel 4). Olemasolevate vigastuste järgi pole võimalik öelda, kas need on tekkisid õnnetuste või vägivalla tagajärjel. Ühe 40–50-aastase mehe koljut leitud surmavaid vigastusi võib pidada mõõgaga tekitatuteks (jn 15).

Suurel noorte meeste osakaalul kalmistu materjalis võib olla mitmeid põhjendusi. Naised ning lapsed võidi matta kalmistu teise piirkonda, samuti võis meeste hulk antud kogukonnas olla ebaproportsionaalselt suur näiteks sisserände tõttu. Surnuaed asus linnamüürist väljaspool, seega võisid surnuid sängitada ka linna ümbritsenud külade või eeslinnade elanikud, samuti ka maalt linna tulnud talupojad. Antud kalmistut ei saa ei kirjalike allikate ega ka osteoloogiliste analüüside põhjal seostada hukkamiskohaga. Kõige tõenäolisemalt võib seda pidada sõjameeste surnuaiaks, mis seletaks meeste suurt osakaalu, aga ka surnute rohkeid paranenud vigastusi. Sõdurid võisid surra näiteks mõne suurema haiguspuhangu tagajärjel.