

**A PRELIMINARY BIOANTHROPOLOGICAL STUDY
OF A 16th–17th CENTURY SKELETAL SAMPLE, DISCOVERED
AT THE “VOVIDENIA” CHURCH IN IAȘI (ROMANIA)**

**VASILICA-MONICA GROZA¹, LUDMILA BACUMENCO-PÎRNĂU³, CRISTINA
CORDOȘ³, MARIANA POPOVICI¹ and LUMINIȚA BEJENARU^{1,2}**

¹*Romanian Academy – Iași Branch*

“Olga Necrasov” Center of Anthropological Research

²*“Alexandru Ioan Cuza” University of Iași, Faculty of Biology, Romania*

³*Romanian Academy – Iași Branch, Institute of Archaeology
bejlumi@yahoo.com*

In this paper, the authors present a preliminary bioanthropological analysis concerning several skeletons discovered and exhumed in 2021 at the “Vovidenia” Church in Iași (Iași County, Romania). According to the information provided by archaeological investigations, the skeletons date between the late 16th century and early 17th century. The study focuses only on the reburied human remains discovered in “Unit 1/ Feature 1”, representing only a part of the total number of recovered human skeletons. In this particular feature, 14 skeletons were identified: seven belonged to males (aged between 25–65 years), two belonged to females (aged between 35–60 years), two belonged to children (12–14 years, *infans II*), and three were indeterminable, due to the very fragmented state of the bones. Biometric and morphological data is precarious, due to the unsatisfactory condition of skeletal preservation. Pathologies, abnormalities and non-metric traits were identified and analyzed: dental enamel hypoplasia, dental caries, radicular remains, radicular cyst, supragingival dental calculus, Wormian bones, osteoarthritis, sacral spina bifida occulta and sacralization.

Keywords: human skeletons, 16th–17th centuries, “Vovidenia” Church in Iași (Romania), bioanthropology

INTRODUCTION

The archaeological research, conducted in 2021 at the “Vovidenia” Church in Iași (Iași County, Romania) (Fig. 1) as part of a rehabilitation project, not only clarified some aspects regarding the construction of the edifice, but also brought new data about the community having inhabited that area during late 16th and early 17th centuries. Seven archaeological units of different dimensions were dug in specific areas of the church, both in its interior (Units 1, 2, 5, 6, and 7) and exterior (Units 3 and 4) areas (Fig. 2/a). According to the observations made, the foundation of the church is about 1 m thick, build with good quality limestone. It has varying depths of around 2.65–2.80 m *versus* the current floor of the church. From the very

beginning, the church (built during the reign of Vasile Lupu) had a standardized plan (porch, narthex, nave, and sanctuary/ altar).

Another interesting aspect of the archaeological research at “Vovidenia” Church refers to the funerary discoveries: graves and reburials. Most graves discovered within the excavation units predate the construction of the current church and were most likely in connection to an older one, situated in the same area. The construction of the “Vovidenia” Church disturbed many such graves, as shown by the numerous reburials of human remains along the foundation. Only one burial, found in Unit 4, can be attributed to the “Vovidenia” necropolis; according to the funerary stone found above, it belonged to Maria Schilet [33].

The present paper is a preliminary paleoanthropological report concerning the skeletal material exhumed at the “Vovidenia” Church in Unit 1/ Feature 1. The skeletons, coming from a reburial (Fig. 2/b), about 1.8×1.7 m in size, and oriented on a SE-NW axis, were found in the narthex of the church, in an oval pit. Filling of the pit was rather homogeneous, consisting of dark brown sediment, with few inclusions. This feature was partially overlapping a rectangular stone structure, similar to a pavement [33].

Following the analysis of each skeleton, a series of biometric and morphological characteristics were revealed, as well as pathologies and abnormalities. Some skeletons are very fragmented, not offering the possibility to evaluate the age at death and sex (indeterminable).

Identification of abnormalities and pathologies adds to the existing knowledge in terms of disease origins, its spreading, and evolution along long periods of time, as well as of the way people adapted to the changes produced in their environment [16,35].

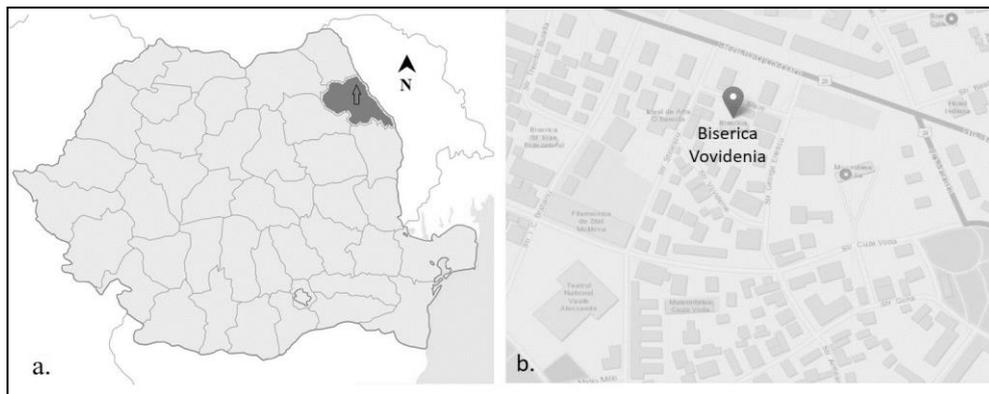


Figure 1. Location of the “Vovidenia” Church of Iași (Iași County, Romania): general (a); detail (b); (<http://ran.cimec.ro/>).

MATERIAL AND METHODS

The human remains found in the “Unit 1/ Feature 1” of the “Vovidenia” Church of Iași belong to 14 reburied skeletons (labelled as R1-R14). The original graves were most likely disturbed during the construction of the current church. As a result, the bones were mixed, with no anatomical connection among them. The preservation status of skeletons is unsatisfactory in the majority of cases [5]. The anthropological study was preceded by marking and bone restoration, in order to allow morphoscopic analysis, osteometry, estimation of age at death and sex, as well as palaeopathological evaluation [44].

Age at death for the 20-x years group was estimated by a combination of several criteria: pubic symphysis degeneration and sacro-iliac surface transformation [37]; changes in the spongy tissue from humeral and femoral epiphyses; involutions in skeleton; morphology of the rib sternal end; pathology specific to old age [25,40]; dental attrition [8,26]; cranial suture obliteration [10].

Estimation of sex for the subjects over 20 years was based on the following aspects: shape and degree of forehead inclination; size of mastoid apophysis; mandible robustness, teeth shape and size [42]; pelvis characteristics [6,9,15]; development of bone relief for muscle insertions and size of the joint surfaces; skeleton’s massiveness and robustness [10,40].

Estimation of age at death in the case of subjects under 20 years was based on the methodology suggested by Fazekas and Kosa, Schaefer *et al.*, Ubelaker [14,36,40].

The measurements and indices are established according to Martin and Saller techniques [29], and the morphometrical evaluation used the dimorphic scales of Alexeev and Debetz [1]. The absolute and relative values resulted from direct measurements and calculation of the conformational indices have been positioned in the scales proposed by Olivier [31].

Stature was calculated from the dimensions of the upper member long bones (*i.e.*, humerus, radius, ulna) and lower member long bones (*i.e.*, femur, tibia). The dimensional scales proposed by Bach, Breitingner, Manouvrier, Trotter and Glesser [3,7,28,39] were also used. Stature framing in the appropriate sex category was made according to Martin and Saller [29]. The cranial and postcranial abnormalities and pathologies were identified and analyzed according to the methods, criteria and techniques recommended by Mays, Kimmerle and Baraybar, Waldron, Ortner, Aufderheide and Rodriguez-Martin, Barnes [24,23,27,32,41]. Photographic documentation was obtained with a Canon Power Shot G9 camera.

RESULTS AND DISCUSSION

In the present paper we describe 14 skeletons from a reburial found in “Unit 1/ Feature 1”: seven belonged to males (aged between 25–65 years); two belonged to females (aged between 35–60 years); two belonged to children (12–14 years,

infans II), and three very fragmented skeletons were indeterminable. Osteometrical measurements are listed in Tables 1–2. In the cranial skeletons, we identified supragingival dental calculus (four cases), followed by dental enamel hypoplasia, dental caries, radicular cyst, radicular remains, Wormian bones (one case for each). In the postcranial segment, osteoarthritis was documented in five cases, followed by the sacral spina bifida occulta and sacralization - only one case for each.

INDIVIDUAL STUDY OF SKELETONS FROM UNIT 1/ FEATURE 1

Skeleton R1 – poorly preserved, belongs to a 35–40 years-old female.

From the *skull* we recovered the frontal bone, the left parietal and the left temporal squamae, the upper jaw and the mandible (incomplete).

The face of the skeleton is incomplete; middle wide nose (54: 27 mm), an antropine pyriform aperture and a nasal spine of IInd degree; the malar bones have a moderate-to-wide development, an intermediary disposition and relatively deep canine fossae (IIIrd degree); the palate is short (62: 41 mm), large (63: 45 mm) – brachystaphyline (63/62: 109.75 u.i.) and moderately deep, with a paraboloid-divergent dental arch.

The mandible is narrow (in correlation with the small width of the face), of medium depth, having a high robustness index ($69_{(3)}/69_{(1)}$: 44.83 i.u.); the mentum, pyramidal in shape, is slightly marked, the gonions, slightly outlined, being situated in the same plane as the ramus. The almost complete dentition displays no caries and, in general, is slightly eroded (IInd degree).

Postcranial skeleton: incomplete and poorly preserved, is represented by: tibiae and left femora (incomplete). The left femora is eurymer (90.00 i.u.) without pilastre (96.29 i.u.). The tibiae are eurymeric (right – 77.14 i.u., left – 76.81 i.u.).

Stature, calculated by considering the length of the long bones, is at the lower limit of the large category (162.41 cm).

Dental abnormalities/ pathologies: At the level of the right canines (labial surface) on the upper jaw and the mandible, linear enamel hypoplasia (LEH) is present. The supragingival dental calculus (a moderate amount – 2) was identified on the buccal surface – in the lower right premolars (P₁, P₂), and the right canine (labial surface) on the upper jaw (Fig. 3). Dental enamel hypoplasia is a developmental anomaly caused by perturbed amelogenesis [17], whose presence indicates episodes of acute physiological stress suffered during the formation of dental crowns [17,38]. Enamel hypoplasia may be identified through the presence of ditches or either surface or deep small pits, horizontally or vertically arranged on the surface of the dental crown [18,38]. Usually, the hypoplastic defects appear bilaterally (left and right), both on the lingual surface of the crown, preponderantly on the labial/ facial one; in certain situations, they circumscribe the tooth [19]. Three types of enamel hypoplastic defects can be found – linear, pit and planar, which are believed to be formed by different mechanisms [17].

Regarding dental calculus, it appears as a mineralized plaque composed primarily of calcium phosphate. Depending on its localization, on either the tooth crown or the exposed roots, there are two forms of calculus: supragingival and subgingival [41]. Dental calculus appears most frequently on the teeth located closest to the salivary glands (especially mandibular incisors and maxillary molars) [35]. Dental calculus should be reported as "0" (absent), "1" (small amount), "2" (moderate amount), "3" (large amount) [8].

Skeleton R2. Poorly preserved, belongs to a young male (25–30 years old).

From *viscerocranium* only the mandible was identified. Characterized by a large robustness index ($69_{(3)}/69_{(1)}$: 44.12 i.u.), the mandible has a high horizontal ramus (70: 68.50 mm), with a pyramidal-shaped mental protuberance and slightly flared gonions.

Dentition (two teeth in alveoli – lower left canine and lower left first premolar (P₁)) has a moderate abrasion (IInd degree). Supragingival dental calculus (large amount – 3) is present in both teeth (Fig. 4).

From the *postcranial skeleton* we recovered: the right humerus (incomplete), the femurs (incomplete), the right tibia and a fragment of the left tibia. Postcranial skeleton is gracile. The femurs are eurycymenia (right – 91.67 i.u.; left – 94.92 i.u.) without pilastre (right – 86.67 i.u.; left – 89.83 i.u.), and the right tibia is eurycymenia (89.28 i.u.).

Stature, calculated only by the length of the right tibia, indicates a value of 170.90 cm (large category).

Skeleton R3. This (poorly preserved) skeleton is indeterminable in terms of age and sex.

Skull – absent.

From the *postcranial skeleton* there are present only the right tibia (incomplete), two fragments of the left femur, and a fragment of the right humerus.

The left femur is eurymer (85.29 i.u.), with pilastre (106.89 i.u.), while the tibia is eurycymenic (77.77 i.u.).

Skeleton R4. Poorly preserved, it belongs to a mature female (55–60 years old).

Recovered from *the skull* were: two fragments of the parietal bone, two fragments of occipital bone, the right squamous temporal bone, the left malar bone and the upper jaw (incomplete).

Dentition (teeth in alveoli – at the level of the upper jaw) has an accentuate abrasion (IIIrd–IVth degree).

The *postcranial skeleton* (small to medium robustness), incomplete and poorly conserved, is present through the humeri (incomplete), the right ulna (incomplete), the tibias, the right and the left femora (incomplete). The femurs are eurymere (right – 89.06 i.u., left – 88.88) without pilastre (right – 86.20 i.u., left –

87.71 i.u.). The tibiae are eurycnemic (right – 78.78 i.u., left – 77.27 i.u.) and the humeri are eurybrahic (right – 86.95 i.u., left – 84.78 i.u.).

Stature, calculated by considering only the length of the left femora and tibiae, indicates an average of 161.41 cm (large category).

Dental abnormalities/ pathologies – upper jaw: supragingival dental calculus (moderate amount – 2) is present at the level of the left first molar (M^1) on the buccal and occlusal surface. The right second incisor (I^2), the left first premolar (P^1) and the right second premolar (P^2) are present as radicular remains.

Dental attrition includes two prime components: occlusal attrition resulting from the contact between the biting surfaces of the upper and lower teeth, and interproximal attrition, a consequence of the slight movement produced between adjacent teeth in the same jaw [20,43]. Variations in the consistency of food, food preparation methods, and grit contained in food produce dental abrasion patterns, which is consistent with the well-documented patterns of attrition that reflect the biomechanics of mastication. Five degrees of dental abrasion established by Périer are used to highlight the disappearance of enamel and dentin [11]. The fifth degree is represented by pronounced abrasion, leading to the disappearance of the crown, which makes visible the pulp chamber. This is how radicular remains result.

At the level of the upper left second incisor (I^2) and upper left canine, a radicular cyst is present (Fig. 5). Radicular cysts result from the infection of the pulp cavity and root canal of an erupted tooth. It starts as an apical abscess or granuloma and secondarily acquires an epithelial lining from the remnants of the epithelial sheath of the dental root [32]. It may be located on any erupted tooth of the mandible or maxilla, being always intimately associated with the root of an erupted tooth [32].

Postcranial abnormalities/ pathologies: the left femur is affected by osteoarthritis (Fig. 6), a degenerative joint disease caused by cartilage loss in a joint. This leads to lesions due to direct contact between the bones so that, in the attempt of repairing the lesion, joint's bone reacts by producing another bone [2]. The cause determining osteoarthritis is yet unknown, however there are certain factors which amplify the risk of developing this disease, such as: heredity, overweight, joint lesions, repeated overstrain in certain joints, lack of physical activity, nervous lesions and aging [21].

Skeleton R5. It belongs to a male subject, 35–40 years old.

From *the skull* we identified bones and fragments belonging to the neurocranium (the frontal bone, three fragments from the parietal, the right temporal bone, two fragments from the occipital bone) and the face (the mandible – incomplete); their study is limited to a few measurements and morphoscopic aspects.

The mandible is narrow (of medium depth, with a high robustness index ($69_{(3)}/69_{(1)}$: 38.46 i.u.); the mentum, pyramidal in shape, slightly marked, and the gonions, slightly outlined, are in the same plane as the ramus. Dentition (four teeth in alveoli) has a moderate abrasion ($I^{\text{st}} \rightarrow II^{\text{nd}}$ degree).

From the *postcranial skeleton* we recovered: the long bones – the humeri (incomplete), the femurs (incomplete) and the tibiae. The postcranial skeleton is gracile. The femurs appear flattened (right – 83.07 i.u.; left – 84.37 i.u.) with pilastre (right – 112.72 i.u.; left – 112.96 i.u.), and the tibiae are eurycnemic (right – 75.00 i.u., left – 74.66 i.u.). The left humerus, provided with a moderate deltoidian surface, is eurybrahic (81.25 i.u.).

Stature, calculated by considering only the length of the tibiae, falls over the middle category (169.86 cm).

Skeleton R6. Poorly preserved, belongs to a mature male (60–65 years old).

The skull is incomplete and fragmented: the frontal bone, the parietals, the temporal squamae, the mandible (incomplete), the upper jaw (incomplete) and the right malar. Dentition is absent.

The forehead, in relation to the width of the skullcap, is stenometope (9/8: 66.43 i.u.), with marked glabella (IIIrd degree).

From the *postcranial skeleton* present are especially the bones from the lower limbs (some incomplete), the coxal bones, the sacrum bone and one dorsal vertebra. The right femur is eurymer (88.70 i.u.) without pilastre (90.16 i.u.).

Postcranial abnormalities/ pathologies: most bones are affected by degenerative osteoarthritis (the femurs, the left tibia, the right humerus, the dorsal vertebra) (Fig. 7).

At the level of the sacrum bone, sacralization of the 5th lumbar vertebra (L5) was observed (Fig. 8), a defect causing the fusion between this vertebra and the sacrum bone; as a result, the lumbar spinal column loses a segment. The morphologic aspect of the sacrum bone is normal, but it presents a supplementary sacral foramen. On the contrary, if the first sacral segment is separated from the sacrum bone, this defect is called lumbarization S1. In both cases, the defect can be complete or incomplete, unilateral or bilateral, symmetric or asymmetric [2,4].

Skeleton R7 – well-preserved, it belonged to a mature male (30-35 years old).

The skull, almost completely restored, has a brachycranic conformation (8/1: 82.58 i.u.), orthocranic (20/1: 61.33 i.u.) and tapeinocranic (20/8: 77.89 i.u.), with a stenometope forehead (9/8: 65.99 i.u.). As morphoscopic aspects, we notice the sphenoid shape of the skullcap in *norma verticalis* and the “house” shape in *norma occipitalis*, a moderate development of the glabella (degree II→III), the moderately curved occipital being also associated with an external occipital protuberance of the IInd degree, the development of the mastoid apophyses – IIIst degree, and the supramastoidian outline.

The face is narrow (46: 121 mm), medium to high (48: 71 mm; 47: 120 mm), hyperleptoprosopic (47/45: 96.00 i.u.) and leptene, respectively (48/45: 56.8 i.u.); the orbits, of small size (51: 38 mm; 52: 34.50 mm), are hypsiconch (52/51: 90.79 i.u.), slightly rectangular. The canine fossae are superficial (IIst degree), with

narrow malar bones; the palate, of very medium depth (62: 45 mm), is medium narrow (63: 40 mm), brachystaphyline (63/62: 88.88 i.u.), with a paraboloidal dental arch and low abrasion degree of the teeth (Ist degree), slightly more pronounced for the molars (IInd degree).

Skull abnormalities/ pathologies: at the level of the occipital bone (on the lambdoid suture), four Wormian bones are observed (Fig. 9). Wormian bones, also called intersutural or Inca bones, are small bones occurring within cranial sutures. They are present in the frontal and occipital bones and, in some cases, they lead to erroneous diagnoses of the cranial fractures [30]. Wormian bones can be a common occurrence and they seem to be genetically conditioned in some populations [22].

Supragingival dental calculus (moderate amount – 2) is signalled at four teeth on the upper jaw – right side [canine, premolars 1,2 (P¹, P²) and molar 1 (M¹)] (Fig. 10).

The mandible, of medium to large height and thickness (69₍₁₎: 31.50 mm, 69₍₃₎: 14 mm), appears moderately robust (69₍₃₎/69₍₁₎: 44.44 i.u.), with a button-shaped mental protuberance and slightly flared gonions; dentition is represented by the two molars (M₁ and M₂), premolar 1 (P₁) and canine (C) – (right), the rest of the teeth being lost *post-mortem*.

The *postcranial skeleton* is represented by the bones from the upper and lower limbs (femurs – incomplete; the fragments of the humeri and right ulna – incomplete). The right humerus, based on diameter, is eurybrachic (88.00 i.u.) and the femurs are platymere (slightly asymmetric: right – 77.02 i.u.; left – 76.71 i.u.), without pilastre (right and left – 96.77 i.u.).

Stature, calculated by considering the length of the femurs, indicates an average of 173.33 cm, a value that falls within the large category for male statures.

Skeleton R8 – child of approximately 13–14 years (*infans II*), indeterminable sex.

The cranial skeleton is missing from the osteological inventory (destroyed by anthropic causes) and the postcranial skeleton is represented only by the right *femur* (diaphysis length – 325 mm), the age at death being estimated based on its size.

Skeleton R9. This (poorly preserved) skeleton is indeterminable in terms of age and sex.

Skull – absent. The *postcranial skeleton* is represented by: left *femora* (incomplete), left tibia, two fragments from the right tibia and a fragment of the right humerus.

Skeleton R10. Incomplete and fragmented, it belonged to a 55–60 year-old male subject.

From the *skull* we recovered only the mandible (incomplete), which presents a small robustness index (69₍₃₎/69₍₁₎: 32.25 i.u.); the mentum, with a pyramidal shape, is slightly marked, and the gonions, slightly outlined, are in the same plane

as the ramus. Dentition (seven teeth in alveoli) shows intense abrasion (IIIrd → IVth degree).

Postcranial skeleton is represented by: the right femora, the tibiae (the left tibia – incomplete), three fragments from the fibulas, the left humerus, one fragment from the right humerus, the right radius, one fragment from the left radius, one fragment from the left cubitus, coxal bones (incomplete), four lumbar vertebra, astragals and calcaneus, the sacrum bone and a fragment of rib.

The postcranial skeleton is of medium robustness. The right femur is eurimer (93.75 i.u.) without pilastre (92.06 i.u.). The tibiae are eurycnemic (right – 82.81 i.u., left – 82.53 i.u.) and the humeri are eurybrach (right – 86.04 i.u., left – 86.36 i.u.).

Stature falls into the middle category (165.08 cm), at the lower limit.

Dental abnormalities/ pathologies: dental caries (root caries – IInd degree) affected the left mandibular second molar (M₂) (Fig. 11). It is known that dental caries have a multifactor etiology, presenting various degrees of gravity, from opaque stains to large cavities affecting the teeth [35]. Spreading of this disease in historical populations is associated with a carbohydrate-rich diet [12]. The specialized literature indicates that the main factors influencing dental caries are: environmental (oligoelements present in food and water), pathogenic agents (bacteria causing the disease), exogenous (diet, oral hygiene) and endogenous factors (teeth shape and structure) [34].

Postcranial abnormalities/ pathologies: the left humerus (upper epiphysis), the left tibia (upper epiphysis), four lumbar vertebra and calcanei are affected by degenerative osteoarthritis (Fig. 12).

Sacral spina bifida occulta is signalled in segment S4–S5 of the sacrum bone (Fig. 13). Spina bifida (spinal dysraphism, spinal defect, neural tube defect, open spine) includes all forms of congenital spine abnormalities resulting in a faulty neural arch, which allows the meninx or neural elements to herniate [13]. Occult spinal dysraphism can be located on any spinal segment, starting at the atlas and ending at the sacrum; however, it is most frequently encountered in the lumbosacral region (L5–S1), recording incidences up to 25% [4]. Sacral spina bifida occulta was frequently identified and reported by palaeopathologists as a congenital anomaly [24].

Skeleton R11. This skeleton belonged to a child of approximately 12–13 years (*infans II*).

From *the cranial skeleton* we only recovered the frontal bone and parietals; *the postcranial skeleton* is represented by the right tibia (diaphysis length – 251 mm), a fragment from the left tibia, the left femora (diaphysis length – 320 mm) and a fragment from the right femora.

Skeleton R12. Poorly preserved, this skeleton is indeterminable in terms of age and sex.

Skull – absent. From the *postcranial skeleton* we recovered: the long bones (the left tibia, one fragment from the right femora, three fragments from the left fibula, the right radius, the left radius (incomplete), one fragment from the right ulna); the sacrum bone, the coxal bones, a fragment of the sternum and one dorsal vertebra (incomplete). At the level of the right radius, traces of oxidation are observed.

Skeleton R13. This (incomplete and fragmented) skeleton belonged to a 60–65 year-old male subject.

From the *skull* we recovered only three fragments of the parietal bones, a fragment of the left malar and four radicular remains.

Postcranial skeleton is represented by fragments of the femurs, the tibiae, the fibula, the right humerus, the right ulna, the right clavicle, the right scapula, and fragments of the coxal bones and ribs. At the level of the right ulna there are traces of oxidation.

Postcranial abnormalities/ pathologies: the coxal bones are affected by osteoarthritis (Fig. 14).

Skeleton R14. Incomplete and poorly preserved; it belonged to a mature male (60-65 years).

From the *skull* we recovered the left half upper jaw and the left malar bone. Dentition (five teeth in alveoli) shows intense abrasion (IIIrd–IVth degree).

The postcranial skeleton is represented by right femora (incomplete), fragments of the left radius, fragments of the clavicles and ribs, a sternum fragment with traces of oxidation, seven dorsal vertebrae (four incomplete), a fragment of the sacrum bone, right calcaneus, tarsals, metatarsals and phalanges. *The stature* could not be calculated.

Postcranial skeleton presents a medium robustness; the right femora is platymeric (81.82 i.u.), without pilastre (86.36 i.u.).

Postcranial abnormalities/ pathologies: seven dorsal vertebrae with marginal osteophytes – signs of degenerative osteoarthritis (Fig. 15).

CONCLUSIONS

This bioanthropological approach analyzes 14 reinterment skeletons of the 16th–17th centuries, discovered in “Unit 1/ Feature 1” at “Vovidenia” Church of Iași, providing information concerning the age at death, sex, biometric and morphological data, and pathological aspects.

We identified 14 subjects – seven 25–65 year old males, two females, 35–60 years old, and two children (*infans II*) 12–14 years old. Three of the skeletons were very fragmented and a proper determination was impossible. Biometric and

morphological data is precarious, due to the unsatisfactory condition of skeletal preservation. Therefore, the anthropological type could not be specified.

The presence of abnormalities, pathologies and non-metric traits reported for these 14 skeletons is moderate. At cranial level, we identified supragingival dental calculus (four cases – two ♂ and two ♀), followed by dental enamel hypoplasia (one case – ♀), dental caries (one case – ♂), radicular cyst (one case – ♀), radicular remains (one case – ♀), and Wormian bones (one case – ♂). In the postcranial segment, osteoarthritis (osteophytes and bone porosity) is noticed in five cases (four ♂ and one ♀), followed by sacral spina bifida occulta and sacralization – only one case for each (two ♂).

The paleoanthropological analysis of the entire osteological material discovered at the “Vovidenia” Church will offer, together with the archaeological documentation, the opportunity of enriching the picture of the medieval population of Iași.

Table 1

Cranio-facial and stature dimensions (in mm) and indices
in the skeletal sample exhumed at the “Vovidenia” Church from Iași (Unit 1/ Feature 1)

Martin No.	Character	R1, ♀ 35–40 years old	R2, ♂ 25–30 years old	R3, indeterminable	R4, ♀ 55–60 years old	R5, ♂ 35–40 years old	R6, ♂ 60–65 years old
1	G-op (maximum cranial length)	–		–	–	–	–
8	Eu-eu (maximum cranial breadth)	–		–	–	–	140
9	Ft-ft (minimum frontal breadth)	95.5		–	–	–	93
10	Co-co (maximum frontal breadth)	122		–	–	–	–
12	Ast-ast (maximum occipital breadth)		–	–	–	–	–
20	Po-b (height of the calotte)		–	–	–	–	–
45	Zy-zy (maximum face diameter)		–	–	–	–	–
47	N-gn (total face height)		–	–	–	–	–
48	N-pr (the height of the facial massif);		–	–	–	–	–

Table 1 (continued)

51	Mf-ek (the orbit's breadth)		–	–	–	–	–
52	Height of the orbit		–	–	–	–	–
54	Al-al (nasal breadth)	27		–	–	–	–
55	N-ns (the height of the nose)	44		–	–	–	–
63	Enm2-enm2 (internal palatal breadth)	–	–	–	–	–	–
65	Kdl.-kdl.	–	–	–	–	–	–
66	Go-go	–	–	–	–	–	–
68	Depth of the mandible	–	–	–	–	–	–
69(1)	Height at the g.m. level	29	34	–	–	32.5	–
69(3)	Thickness at the g.m. level	13	15	–	–	12.5	–
8/1	Cranial index	–	–	–	–	–	–
20/1	Auricular – longitudinal index	–	–	–	–	–	–
20/8	Auricular-transversal index	–	–	–	–	–	–
9/10	Frontal-transversal index	78.28	–	–	–	–	–
9/8	Frontal-parietal index	–	–	–	–	–	66.43
12/8	Parietal-occipital index	–	–	–	–	–	–
47/45	Total facial index	–	–	–	–	–	–
48/45	Facial superior index	–	–	–	–	–	–
52/51	Orbitary index	–	–	–	–	–	–
54/55	Nasal index	61.36	–	–	–	–	–
45/8	Cranial-facial transversal index	–	–	–	–	–	–
69(3)/69(1)	Mandibular robustness index	44.83	44.12	–	–	38.46	–
Stature		162.41	170.90	–	–	161.41	169.86

Table 1 (continued)

Martin No.	R7, ♂ 30–35 years old	R9, indeterminable	R10, ♂ 55–60 years old	R12, indeterminable	R 13, ♂ 60–65 years old	R 14, ♂ 60–65 years old
1	178	–	–	–	–	–
8	147	–	–	–	–	–
9	97	–	–	–	–	–
10	127	–	–	–	–	–
12	104	–	–	–	–	–
20	114.5	–	–	–	–	–
45	125	–	–	–	–	–
47	120	–	–	–	–	–
48	71	–	–	–	–	–
51	38	–	–	–	–	–
52	34.5	–	–	–	–	–
54	26	–	–	–	–	–
55	–	–	–	–	–	–
63	40	–	–	–	–	–
65	–	–	–	–	–	–
66	–	–	–	–	–	–
68	–	–	–	–	–	–
69(1)	31.5	–	31	–	–	–
69(3)	14	–	10	–	–	–
8/1	82.58	–	–	–	–	–
20/1	61.33	–	–	–	–	–
20/8	77.89	–	–	–	–	–
9/10	76.38	–	–	–	–	–
9/8	65.99	–	–	–	–	–
12/8	70.75	–	–	–	–	–
47/45	96	–	–	–	–	–
48/45	56.80	–	–	–	–	–
52/51	90.79	–	–	–	–	–
54/55	27.47	–	–	–	–	–
45/8	85.03	–	–	–	–	–
69(3)/69(1)	44.44	–	32.25	–	–	–
Stature	173.33	–	165.80	–	–	–

* According to Martin and Saller (1956-1966)

Table 2

Measurements of long bones – children (Unit 1/ Feature1)

Dimension		Humerus	Radius	Cubitus	Femora	Tibia
		Maximum length				
Skeleton R8 13–14 years (<i>infans II</i>)	right	–	–	–	325	–
	left	–	–	–	–	–
R11 12–13 years (<i>infans II</i>)	right	–	–	–	–	251
	left	–	–	–	320	–

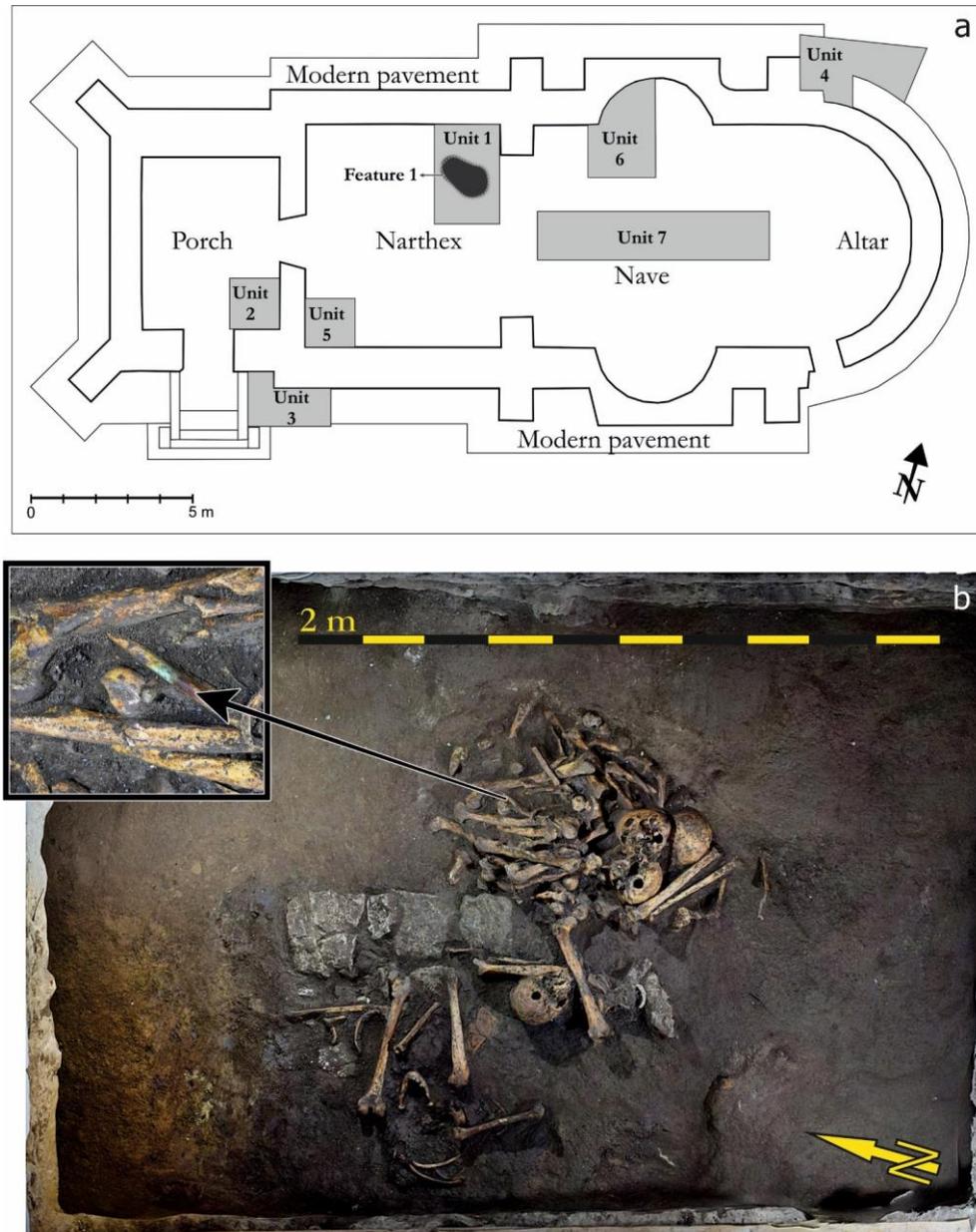


Figure 2. Archaeological context: a – general plan of the “Vovidenia” Church and location of archaeological units, b – Feature 1 in Unit 1, with details of oxidation traces.

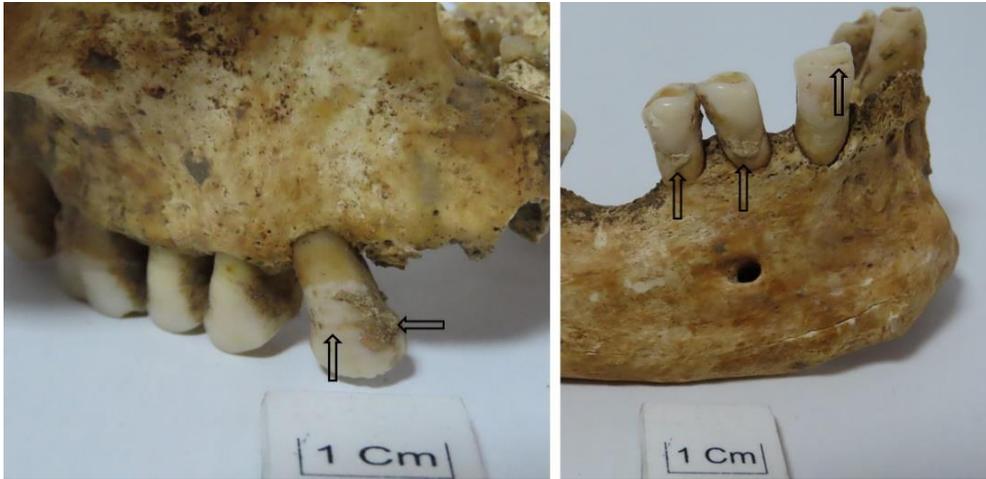


Figure 3. Skeleton R1, ♀, 35–40 years old: linear enamel hypoplasia (LEH) – upper and lower right canines (labial surface); supragingival dental calculus (moderate amount – 2) – on the upper right canine (labial surface), and on the buccal surface of the lower right premolars (P_1 , P_2).

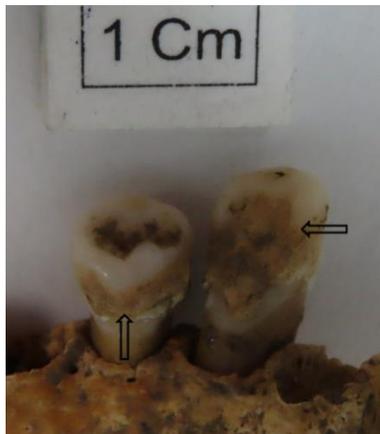


Figure 4. Skeleton R2, ♂, 25–30 years old: mandible with supragingival dental calculus (large amount-3) – left canine and left first premolar (P_1).



Figure 5. Skeleton R4, ♀, 55–60 years old: upper jaw with supragingival dental calculus (large amount – 3) – left first molar (M^1) on the buccal and occlusal surface; radicular remains – right second incisor (I^2), left first premolar (P^1), and right second premolar (P^2); radicular cyst at the level of the left second incisor (I^2) and canine.



Figure 6. Skeleton R4, ♀, 55–60 years old: left *femur* affected by osteoarthritis.



Figure 7. Skeleton R6, ♂, 60–65 years old: degenerative osteoarthritis on *femurs*, left *tibia*, right *humerus*, dorsal *vertebra*.



Figure 8. Skeleton R6, ♂, 60–65 years old: sacralization of the last lumbar vertebra (L5).



Figure 9. Skeleton R7, ♂, 30–35 years old: occipital bone with four Wormian bones.



Figure 10. Skeleton R7, ♂, 30–35 years old: upper jaw (right side) with supragingival dental calculus (moderate amount – 2) – canine, first and second premolars (P¹, P²), and first molar (M¹).



Figure 11. Skeleton R10, ♂, 55–60 years old: mandible with root caries (IInd degree) at the level of the left second molar (M₂).



Figure 12. Skeleton R10, ♂, 55–60 years old: degenerative osteoarthritis on left humerus (upper epiphysis), left tibia (upper epiphysis), lumbar vertebra, and calcanei.



Figure 13. Skeleton R10, ♂, 55–60 years old: sacrum bone with spina bifida occulta in S4-S5 segment.



Figure 14. Skeleton R13, ♂, 60–65 years old: coxal bones (incomplete) affected by osteoarthritis.



Figure 15. Skeleton R14 – ♂, 60–65 years old: osteoarthritis with marginal osteophytes on dorsal vertebrae.

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