

Anthropological Characteristics of Skeletal Remains from Medieval Vratsa Necropolis

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The article presents anthropological survey of the excavated skeletal remains from the medieval necropolis at T. Balabanov 1 str. in Vratsa. The physical characteristics of the population (height and body mass) were obtained for some of the individuals as well as variations and pathologies that provide information about the hereditary relationships and the health status of some individuals were examined too. The state of the material and its limitation in quantitative terms do not allow for general conclusion on the demographic picture of the Middle Age. But the addition of data from a paleo-anthropological unexplored area is necessary for the creation of empirical material to allow the detailed anthropological characterization of the population of medieval Bulgaria.

Key words: Anthropology, Archaeology, Necropolis, Vratsa, Anthropological characteristic

Introduction

Medieval Vratitsa* is well known in epigraphic and written sources. Since 2007 regular archaeological excavation has been carried out in its fortified part, but the realization of investor intentions in the central part of the modern city has led to the partial study of one of the medieval necropolis, probably linked to the suburb.

Within the area planned for construction 39 graves were revealed, 38 of which can be assigned to the broad chronological terms from the end of the 12th–14th century [8]. A huge part of the necropolis was destroyed before the intervention of the archaeologists. The compromised layer has a thickness of more than 1.20 m and includes the tombs dating back to the second half of the 13th and the 14th centuries. Only half-broken grave 22, dated with John Alexander's coin (1337-1371), was studied only in the western periphery.

The circumstances described above for the discovery and exploration of the necropolis have also precluded the inability of comprehensive anthropological analysis of the population. The good date of the graves based on the imitation of the Bulgarian and Latin coins from the first half of the 13th century allows us to present in this communication the data on the population inhabiting the suburb of Vratsa in that period.

* Vratitsa is the medieval name of present town of Vratsa

Material and Methods

A bone material of 39 individuals was provided for an examination at the National Anthropological Museum. The anthropological analysis was carried out according to the classical methodology [5]. Its results are used to calculate the height of individuals by the formulas of Pirson and Lee, summarized in Alekseev [1]. For the determination of sex, the data obtained from the pelvic marks [3] and the skull [6] were used. In cases where they are too fragmented, the sex is determined using metric scars - lengths of long bones, head diameters and bicondial diameters of shoulder and hip bones [2, 3]. Determining the age at the onset of death of the grown-up individuals is based on the degree of cranial sutures on the Olivier-Simpson scales and summarized by Alekseev-Debets. The age at onset of death in unrelated individuals is determined by the perforation and growth of permanent teeth [11]. The more detailed feature of the individuals buried in the medieval necropolis in Vratsa were supplemented by taking into account the body mass, taking into account the diameters of the femoral heads [9].

Results and Discussion

This paper about the necropolis at “T. Balabanov “1 str. in Vratsa gave for the first time an opportunity to illuminate (albeit partially) the anthropological characteristics of the medieval population of the town. Archaeological excavations were carried out between August and October, 2016 by a team led by A. Petrova – archaeologist at the Regional History Museum – Vratsa, and the results were published in “Contributions to Bulgarian Archeology”, vol. VII [8].

Out of the 39 subjects, a detailed anthropological analysis of 38 of them was carried out. The individual of the conditionally designated grave 16 falls chronologically outside the 12th-14th centuries, so the data obtained are not included in this study.

In the skeletal remains studied, the sex of 30 individuals was determined. The proportion of the buried men is equivalent to the proportion of buried women, their percentage being 42% men and 43% women, respectively (**Fig. 1**). Those buried in childhood in which the sex markings did not appear on the bone remains were 7 (15%).

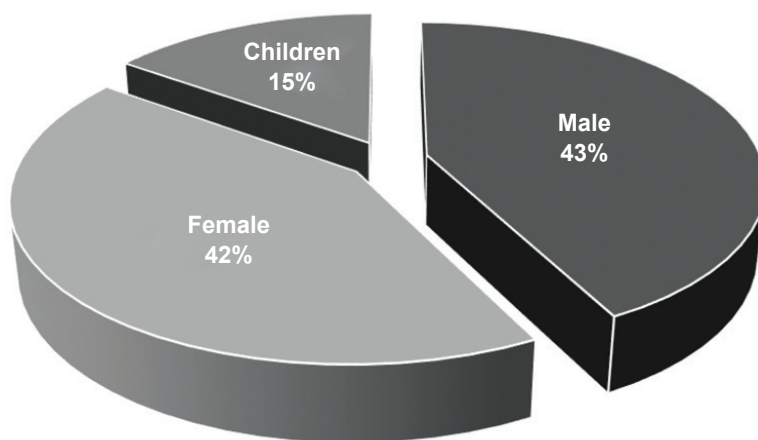


Fig. 1. Sexual distribution of buried individuals

In the age distribution of burials the highest proportion of mature individuals is found – matusus (35/40 to 60 years) (**Table 1; Fig. 2**). The mortality rate of infants I and infans II (7 to 14 years old) reached 30%, showing similar parameters with other necropolises. A similar distribution with a high proportion of the buried in these age groups is also observed in other medieval necropolises (12th–14th centuries), which indirectly confirms its representativeness [4].

The characteristic peculiarity of the inter-industrial societies for increased mortality of young women is also observed among the buried in the Vratsa necropolis. In the adultus group (20-30/35), women’s mortality is twice as great as that of men. This is most often attributable to the risks of pregnancy and childbirth [10].

Table 1. Sex-age distribution of the buried

	Inf. I	Inf. II	Juvenilis	Adult.			Matur.			all
				M	F	all	M	F	all	
N	3	3	3	1	2	3	3	5	8	20
%	15	15	15	5	10	15	15	25	40	100

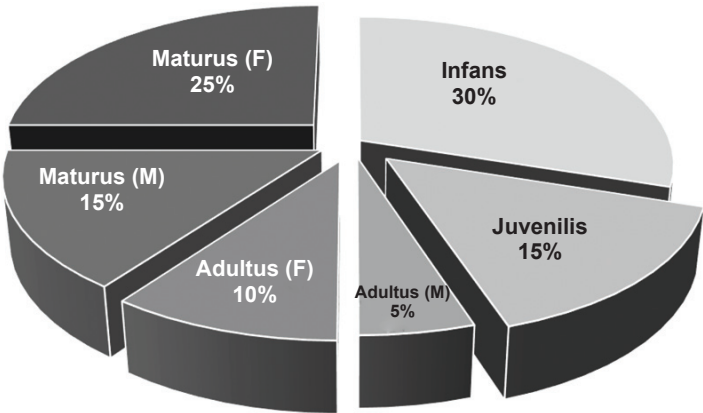


Fig. 2. Distribution of buried by sex and age

Physical development of the buried in the necropolis in Vratsa

The height was calculated for a total of 14 individuals (nine women and five men). The figures show that men’s height varies from 160.57 cm to 177.98 cm and for women – from 154.30 cm to 169.56 cm. The average height is respectively 168.61 cm for men and 161.84 cm for women. The average body mass for men is 67.16 kg and ranges from 62.85 to 72.70 kg while the estimated body mass in females ranges from 55.75 kg to 64.50 kg, averaging 61.02 kg (**Fig. 3**).

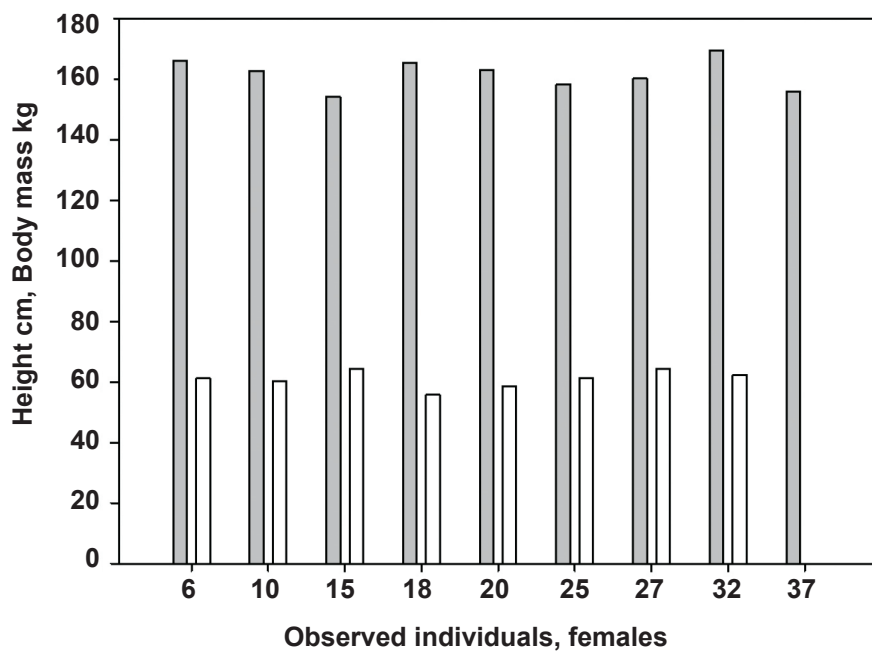
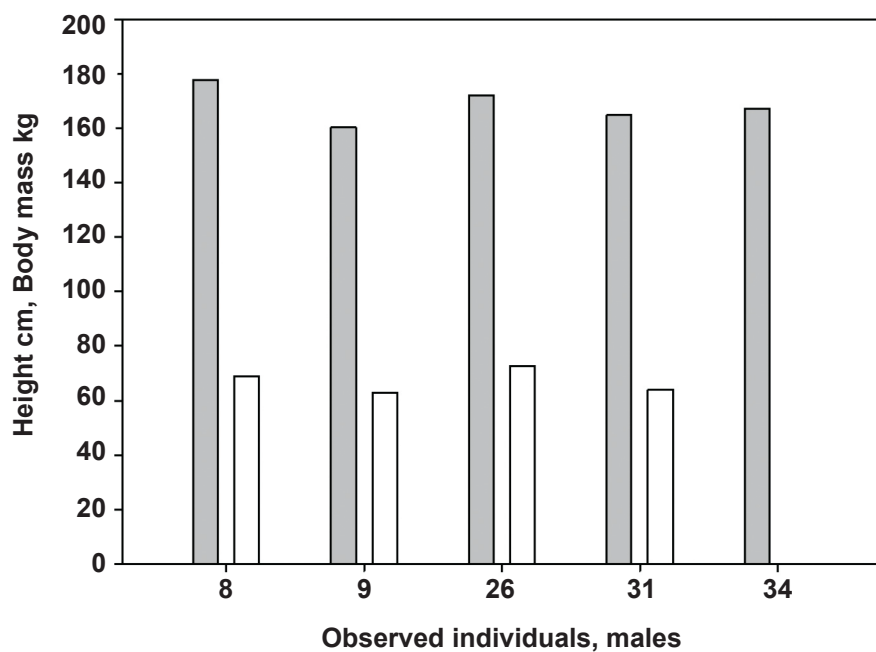


Fig. 3. Correlation of height/body mass in the buried women and men in Vratsa necropolis

Interest is attributed to the ossification of the left blade observed in the buried man (50-60 years) in grave 22 – *ligamentum transversumsuperius scapulae*. This resulted in the closure of the incisura scapularis and turning it into an aperture (Fig. 4). The same is another variation fixed on the left shoulder bone – foramen supratrochlearishumeri. In the literature, such variations are considered in connection with heredity as well as a consequence of mechanical joint load [7]. The same variation is observed in the woman buried in grave 37, 30-40 years. In two individuals (female and male buried in grave 10 and 31) there was fixed variation on the sternum – foramen corpus sterni (Fig. 5).

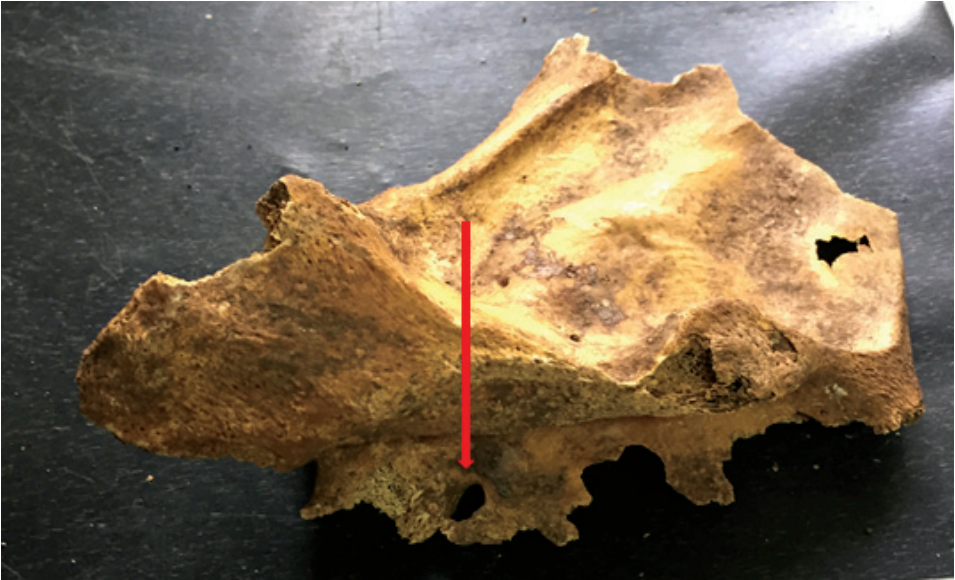


Fig. 4. Ligamentum transversum superius scapulae. Grave 22, male.



Fig. 5. Foramen corpus sterni: a. grave 10, female; b.grave 31, male

In two individuals, buried in grave 31, 35-40 years, and in grave 32, 25-35 years - are found inner bones localized around the lambdoid suture (**Fig. 6**).

The odontological analysis was performed on 26 individuals, with eight of them carious processes was shown. According to the World Health Organization (WHO) main findings, it was found that 3% of the individuals surveyed had an ongoing carious process at the time of death. The relative share of diseased teeth of the studied individuals is 6.97%, with the most infected teeth belonging to the woman buried in grave 20. It has been found that out of the 30 tooth affected by the caries process are 12 of them or 40% of the available teeth. The smallest number of teeth affected by a carious process are observed in the grave 37 (female, 30-40 years) - in the 30 available teeth, a carious process was found in only one.

The high relative frequency of caries and their lack of treatment found in the person buried in grave 20 may have led to worsening nutrition and the development of iron deficiency anemia. The impact of this disease is seen in the cripples in the eyebrows – cribraorbitalia (**Fig. 7**).

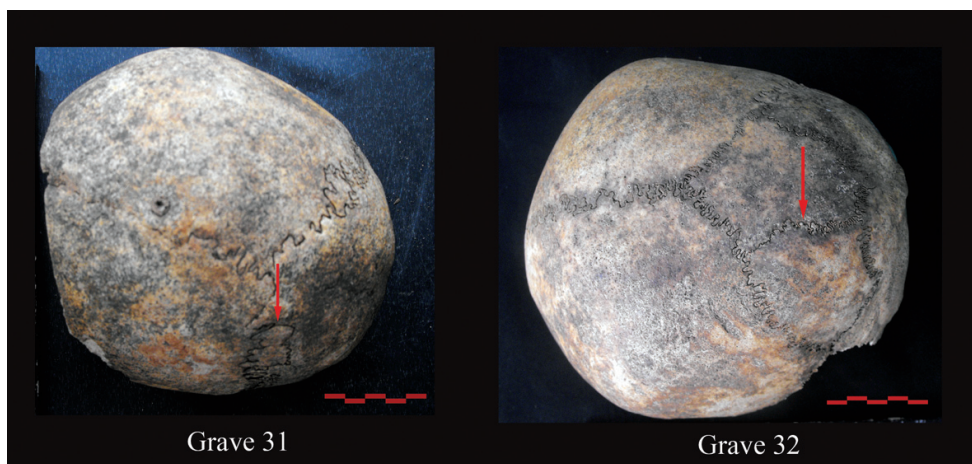


Fig. 6. Wormian bones: a. grave 31, male; b. grave 32, female



Fig. 7. Grave 20: a. abscess around the tooth root; b. carious process; c. cribra orbitalia

In the 31-year-old man buried in grave 31 (35-40 years), fracture was found in the proximal third of the right radius diaphysis, healed without bone fragments. In the same individual, arthrosis changes occurred in the wrist joint (**Fig. 8**).

Osteophyte changes in the vertebrae are observed in most of the buried grown individuals (**Fig.9**).

Conclusion

The presented results of the anthropological survey of the buried in the necropolis on “T. Balabanov “1 in Vratsa are distinguished by a fragmentation that does not allow general conclusions for the population living in the medieval city in the 12th–14th



Fig. 8. Grave 31, male: a. improperly healed fracture of right radius; b. artrosis changes in the wrist joint

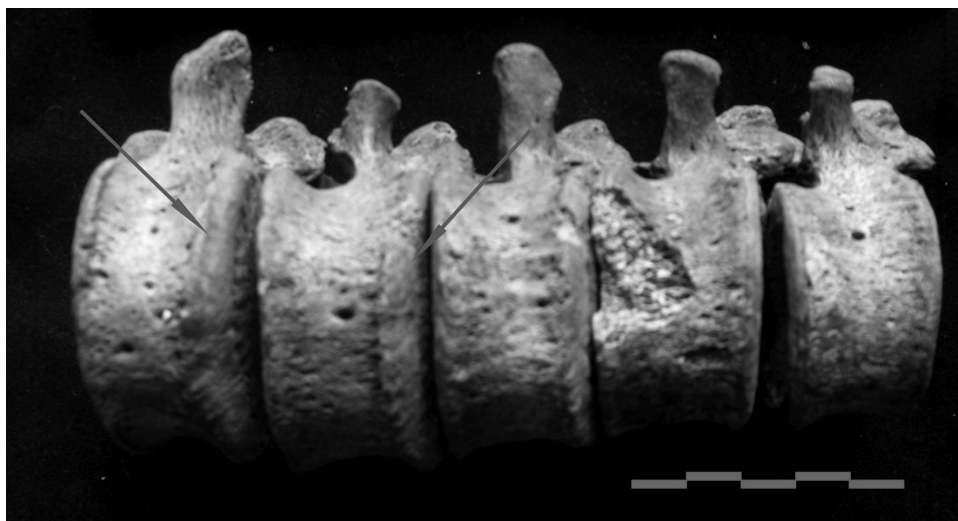


Fig. 9. Grave 10, female, 35-40 years. Osteophyte changes on the edges of the lumbar vertebrae

century. However, given the scanty data for this period, the addition of new facts is necessary for the accumulation of an empiric material, allowed the presentation of a detailed anthropological feature of the population of medieval Bulgaria.

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