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NADIN FLAT NECROPOLIS

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At University Center for Forensic Sciences, on kind request of prof. Sineva Kukoč[1], human osteological material from Liburnian-Roman Nadin flat necropolis, were delivered. In order of getting more information on finding site as well as populations that lived there during this time period, collaboration of University in Zadar and University Center for Forensic Sciences was successfully carried out.

During archaeological researches, one grave cella with 18 graves was excavated. They were dated in 6th and 5th century BC. Only graves: 5, 8, 10, 11, 12, 13, 15, 18 and 18a were preserved in situ, while others were destroyed afterwords.

Aim oft his research was getting results of anthropological analysis of Nadin flat necropolis. Regarding to the fact that Nadin flat necropolis and burial mound 13 that was anthropological processed by P. Rajić Šikanjić[2] belonge to the same Gradina in Nadin, results of these two anthropological analysis will be compared and we will try to give conclusions about similarities and differences in life condicitions and its quality in these two necropolisess.

Anthropological analysis gives an insight in life quality of individuals, as well as whole community, through researche of diseases that were causes of death , food availability and quality, quality of medical care, average of estimated age at time of death, as well as social relations within populations. All those informations give an oportunity of better understanding of past including our ancessters' way of life.

Key words: Nadin flat necropolis , human osteological material, anthropological analysis

MATERIALS AND METHODS

18 graves within cella were anthropological analyzed and eight of them were preserved *in situ*. Preservation of bone remaines was qualified in five categories, from very poor to excellent, but for most of them was not possible to do standard anthropological meassurments due to extreeme bone fragmentation. Schematic representations, standard measurements and dental records were made for osteological material that was well preserved.[3] Due to bad preservation of bone remaines, gender was determined by observation and analysation of morphological characteristics mostly of pelvis, skull and mandible.[4]

Children's gender was not determined due to unexpressed and unreilable morphological bone changes.[5] Age at time of death for adults was determined on: degree of suture obliteration on skull bones,[6] morphology of pubic symphisis and auricular surface of illium, degree of degenerative changes on articular surfaces of long bones and vertebrae together with teeth examination.[7]

[1] *University of Zadar, Department for archaeology.*
[2] *RAJIĆ ŠIKANJIĆ 2006, 4, 795 – 799.*
[3] *MOORE – JANSEN, JANTZ 1990, 1 – 89.*
[4] *BASS 1995, 200 – 206.; UBERLAKER 1999, 52 – 60.; KROGMAN – ISCAN 1986, 200 – 259.; ZEČEVIĆ 2004, 194 – 202.*
[5] *HUNT – GLEISER 1955, 479.*
[6] *ZUPANIČ SLAVEC 2004, 39 – 41.*
[7] *BASS 1995, 12 – 25.; UBERLAKER 1999, 75-84.; KROGMAN – ISCAN 1986, 103-179.; ZEČEVIĆ 2004, 202-205.*

Due to very poor preservation of bone remaines from this location, age at time of death for adults was given in range of 10 years, while for some persons was possible only to determine if it was younger (les than 34 years) or older (older than 35 years) adult.

Age at time of death in children was estimated by: changes in dental status caused by formation and moving of deciduous and permanent teeth, degree of bone ossification in those parts of bone were epiphyses are acreeting with dyaphisses, together with lenght of dyaphysiss of long bones.[8]

Age range in children was detemined depending on bone preservation which was the main reason why it was not possible to detemine age in 50% of children, while for remaining 50% of children age was estimated in range of half year to 11 years.

During anthropological analysis some pathological changes were noticed and described, and were diagnosed according to criteria of postmortal diagnosis: alveolar resorption, caries, dental enamel hypolpasion, *cribra orbitalia*, Schmorle's nodes on vertebrae, eburnization of articular surfaces, periostitis and trauma.[9]

Dental enamel hypoplasia was diagnosed in cases of visible defects of dental enamel in form of lines, spots or recesses.[10] Its location was allso recorded.

Dental caries was diagnosed when visible defects with demineralisation zone of dental enamel, tooth crown or tooth rooth were found. Tooth that was affected with caries and its exact location on it together with its dimensions were described and recorded.[11]

Alveolar resorption was diagnosed in presence of horizontal bone reduction in 3 or more milimeters.[12] Its location was also recorded.

Cribra orbitalia was diagnosed in presence of porosity of bone surface in one or both eye orbits.[13]

Periostitis was recorded in presence of new bone formation under the periost.[14] It was recorded both in active and healing form together with local or generalized periostal reaction.

Schmorle's nodes were diagnosed when kidney or round shaped defects were present on vertebral bodies. Their exact number and precise location due to anatomical position were also recorded.[15] These pathological changes were recorded only on vertebras of adults with completely preserved vertebral body.

Osteoarthritis was confirmed with macroscopic examination of whole skeleton in cases were at least one of next changes was present: osteophytes, eburnization and cartilage calcification.[16] Anatomical position with degree of expansion of these changes together with precise description of their shape were described and recorded.

Trauma induced bone changes and their exact location on bone were also described and recorded. They were clasified on antemortal and perimortal trauma, and postmortal damages.[17]

Animal bones were found in some graves.If it was possible, for every animal bone fragment that was found on this site was determined which bone was it and to which animal it belonged.[18]

RESULTS

Eighteen graves from prehistoric Nadin flat necropolis that belonges to Gradina on Nadin were analyzed. Bone remaines of 45 persons were isolated, five of them were women, nine were men, 22 of them were children and nine adults for which it was not possible to determine gender due to extreme bone fragmentation. Children representation in this necropolis was 48.9%. Burned bone remains of deceased were found in six graves. One bone was found in each of two graves and in remaining four graves there was more than one burned bone. In only one grave were found burned bones that belonged to children.

Average age of life for men was 36.7 years and for women 46 years. Only for 11 children was possible to determine average age of life and it was 8.5 years.

Caries was found in 42.9 % persons, apropos 16 % of all teeth.

Alveolar resorption was found in 28.6% persons, apropos in 35.9% of all teeth.

Dental enamel hypoplasia was found in 25% persons, apropos 33.87% of all teeth.

Cribra orbitalia in healing form was found on bone remaines of one adult and one child. These two persons were the only two persons with preserved eye orbits.

Schmorle's nodes were recorded in 27.3% of all persons that had preserved vertebras.

Pathological signs of osteoarthritis were found in preserved articular surfaces of 11 persons (50% of all adults) on: eight on vertebras, two on ulnas, one on radius, humerus, pelvis, metacarpal and metatarsal bone, femora, two on patelas and tibias, four on talus and calcaneus.

Visible signs of periostitis were present in three adults (13.6% of all adults), on scapula of man from grave 4, on first cervical vertebra (atlas) of adult from

[8] *UBERLAKER 1999, 63 – 71.*
[9] *BROTHWELL 1981, 119 – 174.; UBERLAKER 1999, 107 – 118.*
[10] *ROBERTS – MANCHESTER 2007, 75 – 77.*
[11] *AUFDERHEIDE – RODRIGUEZ MARTIN – LANGSJOEN 1998, 402 – 405.*
[12] *AUFDERHEIDE – RODRIGUEZ MARTIN – LANGSJOEN 1998, 400 – 402.*
[13] *ROBERTS – MANCHESTER 2007, 229 – 233.*
[14] *ROBERTS – MANCHESTER 2007, 172 – 173.*
[15] *AUFDERHEIDE – RODRIGUEZ MARTIN – LANGSJOEN, 96 – 97.*
[16] *CHUBINSKAYA – KETTNER 2002, 161.*
[17] *AUFDERHEIDE – RODRIGUEZ MARTIN – LANGSJOEN 1998, 19 – 50.*
[18] *HILLSON 2005.; DOBNEY – O'CONNOR 2002.; ADAMS – CRABTREE 2008.*

GRAVE	PRESENT BONES	NUMBER OF ANIMAL BONES
3	-CATTLE: distal part of metacarpal bone, two teeth, -SHEEP/GOAT: phalanx, two teeth, astragalus, articular surface of scapula, -PIG: phalanx, articular surface of scapula, -CAT: maxilla with one tooth *in situ* and one extracted tooth	9
6	-SHEEP/GOAT: two teeth (molars), distal part of metatarsal bone -PIG: phalanx -DEER: phalanx	5
9	-SHEEP/GOAT: 2 tibial bones, distal epyphisis, metacarpal bones, 4 teeth, teeth of lamb -PIG: metatarsal bone fragment, -DEER: 2 teeth -fragment of scapula probably from animal with large teeth, -4 fragments of snail shells, -see shell's fragment	17
11	-SHEEP/GOAT: metatarsal bone, -see shell	2
14	-SHEEP/GOAT: distal part of humerus, distal part of radial bone, proximal part of ulna, tooth	4
16	-SHEEP/GOAT: mandibula -HORSE: tooth (mandibular P2), -fragment of see shell	3
18	-SHEEP/GOAT: 3 teeth -DEER: distal part of metacarpal bone with multiple large postmortal incissures	4
18a	-Snail shell	1
19	-CATTLE: radial bone (cub) -SHEEP/GOAT: tooth	2

Table 1. Overwiev of animal bones found in graves. Among all graves, only burials 11, 18 and 18a were intact.

grave 14 and on long bones of woman from grave 19.

Pathological signs of active generalised periostitis were found in nine children (40.9% of all children).

On fragment of right ulna, that belonges to man from grave 6, bone deformation in posterior part of frontal plane was recorded.

Animal bones were found in 9 graves. For 47 of those bones was possible to determine to which animal they belonged to and which bone is it exactly (Table 1).

DISCUSSION

Although, from archaeological point of view this prehistorical period was very well explored, only two prehistorical necropolises in Croatia were anthropological analyzed and those results were published. Results of analysis of location Vinkovci Nama[19] were published in 2003, while results of antropological analysis of bone remains from Nadin burial mound[20] were published in 2006.

This research presents comparison of results of antropological analysis of human bone remains from two different graveyards of the same settlement Gradina in Nadin. Those two are tuburial mound that is archaeological dated in older period (9th – 6th century) and Nadin flat necropolis, dated in 6th/5th century.

This type of commparison provides better insight in changes in life standard within the same sattlement through longer time period. Comparison must be made with caution because archaeologisits still have not given the answer on why were Liburnians, at the same time, using two different burial styles of. Possible answer may lay in differences between sociological status of decived or different ancestral traditions.

Liburnians were burring their decived by ritus of incineration or inhumation. Inhumation ritus included two burial ways: in common graveyard on flat location nearby or below sattlement or in stone accumulations scattered in large space away from the settlement. In both ways decived were buried in fetal position

[19] *ŠLAUS 2003, 27, 257 – 267.*
[20] *RAJIĆ ŠIKANJIĆ 2006, 4, 795 – 799.*

Fig. 1. Dental caries in man from grave 13.

Fig. 2. Alveolar resorption in woman from grave 18.

(laied on side in shriveled position), or in rare cases in stretched position.[21]

Demographic analysis of 18 graves from Nadin flat necropolis, with 45 persons buried in them (five women, nine men, 22 children), showed that average estimated age at time of death for men was 36.7 years, for women 46 years and for children 8.5 years.

From the same sattlement Gradina in Nadin, 19 graves from burial mound were anthropological analyzed, with 37 persons buried in them (nine women, nine men, 7 children, 12 persons with unknown gender). Most of those persons died in age between 26 and 45 years of life (30%), while only small number of them lived more than 45 years (13.3%). There were 23.3% of younger adults.[22] In commparison with these results is obvious that lifetime was longer in persons from Nadin flat necropolis.

The difference in estimated average lifetime between men and women is also very interesting. Altough sample is very small and age at time of death was given in wider range, it is still necessary to look back at research of A.Kurilić.[23] There are some theories that put accent on women's status in Liburnian society that was a rather unusall for that time period. It is consequence of life circumstances, when women had responibillities for house keeping, famillly budget and cattle breed, while men were, at the same time, on the see. According to important role of the woman, probably responsibillity was accompanied with better life quality and therefore longer lifetime. To give any stronger conclusion according to population it is necessary to analyze bigger sample of osteological material.

Children's mortality in total population is very high and amounts 48.9% of all children. In other researches made by other authors expected level of children's mortality is 1/3[24] of total population. The exact frequency of children's mortality is very difficult to estimate and the main reasons are characteristics of children's bone remaines that are smaller, gracile and submissive to fast degradation. In some cultures custom was to bury deceased children under doorstep, fireplace and other locations that were not in graveyard which was aimed to the rest population. Only 18.9% of children were buried in burial mound 13 and it is considered that total average with necropolis is realistic and it corresponds the average of preindustrial time period.

Dental caries is one of the most frequent teeth disease, it occurs in shape of opaque spots or recessions in tooth. Most common causative agents of caries are: presence of trace elements in food and water, effects of different pathological agents that include bacteria, nutrition, dental hygiene, form and structure of tooth.[25]

Visible signs of caries are present in three persons: one man (Fig. 1), one woman and one person with unidentified gender (42.9% of all persons that had preserved teeth), apropos 16 % of teeth were affected with caries. In analyzed sample from burial mound 13, caries was noted in 4.5% of all present teeth. A great difference in frequency of caries was noted within same population from Nadin flat necropolis. It is possible that those findings indicate different social status of deceased person, apropos differences in life standard, nutrition and dental hygiene.

Alveolar resorption is process of descent of alveolar bone due to paradenthosis that appears as consequence of: formation of teeth plaque induced by bacterial ac-

[21] *BATOVIĆ 2005, 26 – 29.*
[22] *RAJIĆ ŠIKANJIĆ 2006, 4, 795 – 799.*
[23] *KURILĆ 2005, 48 – 51.*
[24] *VELJANOVSKA 1990, 248.; ŠLAUS 2006, 104 – 105.*
[25] *ROBERTS – MANCHESTER 2007, 65.*

tivity, mechanical iritation due to mineralisation of teeth plaque as well as metabolic diseases (scurvy, lack of some proteins).[26] Paradenthosis results with teeth loss, altough it is very important to highlight that caries and abscess can also cause tooth loss. Bone loss can appear as horizontal or irregular defect, and it appears more often in older age, in persons with insuficient oral hygiene, as well in persons who consume food rich with saccharose.[27] Food that is rich with carbohydrates favors formation of alveolar resorption,[28] and lot of researches support connection between caries prevalence and alveolar resorption.[29]

One person of unindentified gender and one woman 60 - 69 years old (Fig. 2) alveolar resorption was present (28.6% of all persons with preserved teeth), apropos 35.9% of all teeth were affected with alveolar resorption. Frequency of alveolar resorption in most populations is similar to frequency of dental caries appereance and that trend is present in this population too.[30] This data confirmes insufficient dental hygiene, inssuficient nutrition (based on carbohydrates) as well unfavorable life status of deceased person from Nadin flat necropolis. Alveolar resorption was not recorded in analyzed sample from burial mound 13.

Dental enamel hypoplasia is quantitative defect that is caused with reduction of enamel's thickness and it is visible as one or more shallow horizontal lines on tooth crown. Most of hypoplastic defects of dental enamel is related to physiological stress (like hereditar anomalies,[31] food insufficiency, infectious diseases, metabolic disorders and trauma).[32] It appears as lines, spots and recessus, most frequent on labial surface of incisors and canines. These defects develop during tooth growth and so they remain a permanent signature of subadult stress.[33] Examination of permanent teeth makes possible to determine if person was in some life period exposed to food insufficiency. If hypoplasia of dental enamel is present on incisors it indicates that the person was exposed to these unfavourable conditions in period of four months to six or seven years of life, and if it is determined on canines than we have an insight in person's life in period of seven to 14 years of life.

Dental enamel hypoplasia was recorded in 33.87% of all teeth, apropos in two persons (25% of all persons had preserved teeth): in one older woman (Fig. 3) and one younger man, while in burial mound 13 was recorded only in 4.8% of all examinated teeth.

Cribra orbitalia is consequence of infections, anemia, thalassemia, sicle cell anemia, most frequently is

Fig. 3. Dental enamel hypoplasia on teeth of woman from grave 18.

Fig 4. *Cribra orbitalia* in child from grave 14.

a consequence of iron deficiency.[34] Active form affects infants and younger children, while in adults it occurs in sanation phase.[35] The presence of *cribra orbitalia* gives an important insight in stress degree to which archaeological populations were exposed to.[36]

Cribra orbiatalia in sanation phase is recorded in one older man (older then 35 years) and in one child (Fig. 4). It is not possible to bring conclusions about population only regarding to this information, because these two orbits are only two preserved of all skulls.

Dental enamel hypoplasia and *cribra orbitalia* are indicators of subadult stress and they give us an insight in food quality and sufficiency in children. If *cribra orbitalia* frequency is perceived together with number of persons with dental enamel hypoplasia it is possible to conclude that this population was exposed to higher risk of physiological stress (food insufficiency, infectious diseases, metabolic disorders and trauma) during childhood.

[26] *ORTNER 2003, 593.*
[27] *ROBERTS – MANCHESTER 2007, 73 – 74.*
[28] *SCHEPARTZ – FOX – BOURBOU 2009, 200.*
[29] *LARSEN 1995, 24, 189.*
[30] *PIETRUSEWSKY – TSANG 2003, 111, 211.*
[31] *ROBERTS – MANCHESTER 2007, 75 – 77.*
[32] *ŠLAUS 2006, 124.*
[33] *ROBERTS – MANCHESTER 2007, 75 – 77.*
[34] *ROBERTS – MANCHESTER 2007, 229 – 233.*
[35] *AUFDERHEDE – RODRIGUEZ MARTIN – LANGSJOEN 1998, 400 – 402.*
[36] *LARSEN 2002, 128.*

Fig. 5. Schmorle's node on vertebra of man from grave 3.

Fig. 6. Osteoarthritis in man from grave 13.

Prevalence of *cribra orbitalia* was recorded in burial mound 13 in 40% persons, all adult women. There were not found preserved children eye orbits, so it was not possible to bring conclusion about frequency of this pathological condition in children. Totaly amount of data about cribra orbitalia and dental enamel hypoplasia indicates significantly lower life standad of deceased persons buried in Nadin flat necropolis.

Schmorle's nodes are associated with intervertebral disk degeneration and their most frequent location is on lower thorachic and lumbar vertebras. They are consequence of trauma, to be more precise they are consequence of infection caused by trauma, then osteoporisis, neoplasm,[37] and they also indicate sever mechanical load of spine and give an insight in life quality and intensity of physical labour in concrete community. They usually appear in adults older than 40 years as nods with 1 cm in diameter. Their dimensions are getting larger as person is getting older.[38]

In three persons: two men 30 - 40 year old (Fig. 5) and woman 60 - 69 years old, Schmorle's nodes are detected (27.3% of all persons with preserved vertebras). Schmorle's nodes were not found on analysed sample from burial mound 13.

Osteoarthritis is neuromechanical disease of joints which primary occurs in older age, but it can also occur on joints of younger persons that were previously damaged. This pathological condition affects synovial joints, and it can be recognized through eburnization of articular surfaces, osteophytes and porosity of articular surface.[39] It is consequence of both mechanical and biological factors that destabilize normal bracing between destruction and formation of articular cartilage.[40]

Leading symptom of osteoarthritis is pain and in advanced stages of disease restricted mobility. Joint deformations, crepitations that occur during physical activity and finnaly muscle attrophy are a result of physical inactivity due to painful joints. Mechanical stress and physical activity contribute development of osteoarthritis and that is the reason why frequencies of osteoarthritis in concrete community gives an insight in amount of physical work to wich individuals in community were exposed.[41] Eleven persons, that is 50% of all adults with preserved articular surfaces had visible signs of osteoarthritis (Fig. 6.). This data shows that this community was exposed to large amount of physical work, apropos mechanical stress and physical activity. In research published by P. Rajić Šikanjić informations about osteoarthritis were not brought.

Periostitis is inflammation that affects bone periost and it ussually occurs in shape of tiny spots. It is result of trauma, infection[42] (which can be response of organism on different diseases, like syphilis, venous insufficiency and skin ulcer) and/or specific activities that person performed during her lifetime.[43] Visible signs of periostitis were recorded in 13.6% of adults and in 40.9% of children (Fig. 7.). Since signs of active generalised periostitis were found in these children, it is very possible that they have not survived some specific or non specific infectious diseases. In burial mound 13 periostitis was recorded only on tibial bones, in 26.1% of them. This local periostitis is most probably consequence of trauma and it is ussually located on tibial bones. The main reason for that is the fact that the medial bone surface has the thinnest muscle layer.

[37] *ROBERTS – MANCHESTER 2007, 140.*
[38] *PFIRRMANN – RESNICK 2001, 368 – 374.*
[39] *ROBERTS – MANCHESTER 2007, 134 – 137.*
[40] *CHUBINSKAYA – KUETTNER 2002, 161.*
[41] *ŠLAUS 2006, 202 – 204.*
[42] *ROBERTS – MANCHESTER 2007, 172 – 173.*
[43] *AUFDERHEIDE – RODRIGUEZ MARTIN – LANGSOJEN 1998, 179.*

Fig. 7. Periostitis in child younger than one year of life from grave 5.

Every single mentioned case of periostitis should be observed for itself and if it is possible then collect datas about possible causes that induced local inflammation of periost. According to bone dimensions of one child it is obvious that this child was probably still born with signs of expressed active periostitis most probably caused by sistematic infection. It is very interesting case of person from grave 14 who has large osteophyte on her first cervical vertebra (atlas) that could caused obstruction of cervical arteria with causal diziness. Signs of periostitis that can be reaction on local infection induced with this problem are visible on the same atlas.

In man from grave 6, who is 50 – 60 years old, on posterior surface of frontal plain on present fragment of right ulna, bone deformation is visible .Since bone was not preserved completely, it was not possible with certainty to determine cause of bone deformation, but it is possible that this person had antemortal hand fracture that has not healed properly due to insufficient medical care. This is the only one person with diagnosed trauma, so we can not give conclusions about medical care quality in this population.

During anthropological analysis different animal bones were analyzed (Fig. 8). Unfortunately most of graves were not preserved *in situ* that greatly limits enactment of conclusions. Only graves 5 8, 11, 12, 13, 15, 18 and 18a were intacted burrials while others were significantly disrupted. That is one of the reasons that animal bones were found in graves 11, 18 and 18a that were entirely closed and that can be connected with funeral rite. Liburnians buried different objects together with deceased persons, mostly jewlery, parts of folk customs and personal gadgets, while weapon and pots were very rare. Fratgments of vessels are often found around graves as remains of postmortal customs.[44]

Fig. 8. Animal bones from grave 18.

In grave 11 metatarsal bone of sheep or goat, together with one see shell, were found and they indicate that this animal were most probably food for humans. That is also confirmed with finding of deer's metacrpal bone from grave 18 that has visible signs of multiple postmortal cutouts most probably caused by human teeth. In the same grave were also found teeth of sheep or goat, while in grave 18a were found snail shells that can have a religious meaning.

The list of animal bones found in this location indicates that people usually used domestic animals

[44] *BATOVIĆ 2005, 28 – 29.*

(sheeps, goats, pigs, cattle), in rare cases that was wild animal (usually deer), see shells and snails. All mentioned matches the general picture of Liburnian homestead and economy.[45] As the covering slab was not preserved it is most probably that animal bones afterwards got in the grave as funerary rituals. Only three empty jars were found in the grave, which indicates that the food was not

Only larger surprise was cat osteological bone remains finding, but as that grave was disrupted, we can not exclude the possibility that those bones have got at that grave subsequently.

CONCLUSION

Results of anthropological analysis of two necropolis from Gradina in Nadin were perceived. Total of 82 persons, of which 29 children were reviewed. Those are two different necropolises, burial mound 13 and Nadin flat necropolis, which differ by type of burrial and time dating. Burial mould 13 is archaeological dated in older period (9 th - 6 th century) in relation to Nadin flat necropolis (6 / 5th century).

Through anthropological analysis this research tried to give answers on questions like are there any differences in life quality and life conditions of people that were buried in theese two necropolises.

Detailed anlysiss of subadult sress related pathological changes on Nadin flat necropolis , shows higher frequency of theese changes, which confirms that there were periods of starvation to which the large number of children were exposed to during the childhood. This is also confirmed with high mortality rate in children as well as findings of periostitis on large number of children's bone remaines.

Generalised periostitis findings indicate sistematic infections that children were exposed to, possibly because of immunity weakened by unsuficcient nutrition, poor medical care as well as low life standards.

Numerous indicators of mechanical stress found on bone remaines indicate that this population was exposed to higher frequency of physical labour. Food type and quality differences between theese two necropolises are also obvious. Frequency of caries in Nadin flat necropolis is higher and indicates low-grade nutrition, mostly based on carbohydrates.

It is very intersting that neither one trauma was recorded in Nadin flat necropolis, which was unespected, considering belligerent nature of Liburnians.

The results show that the life quality decreases during the 6 / 5 century in relation to older period, which is expected, because Liburnians lost their political and economy power during that period.

[45] *BATOVIĆ 2005, 52 – 54.*

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SAŽETAK

NADIN – NEKROPOLA NA RAVNOM

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Autori u ovom radu pokušavaju rasvijetliti kvalitetu i uvjete života, kao i opću demografsku strukturu stanovništva željeznog doba u Nadinu. Prilikom istraživanja 2005. godine u Nadinu istražena je cela 1 s 18 grobova, od kojih su samo neki sačuvani in situ. Nakon antropološke analize utvrđeno je da je minimalan broj sahranjenih osoba 45, od kojih 5 žena, 9 muškaraca, 22 djece te 9 odraslih osoba, kojima se zbog iznimne fragmentiranosti nije mogao odrediti spol. U ovoj celi prevladava obred pokapanja, a zastupljeno je i spaljivanje: naime, u šest grobova pronađene su kosti spaljenih pokojnika. Prosječna doživljena dob za muškarce iznosi 36,7 godina, a za žene 46 godina. Za 11 djece bilo je moguće odrediti prosječnu doživljenu dob u trenutku smrti koja je iznosila 8,5 godina.

Usprkos većim postmortalnim oštećenjima korteksa, uočene su sljedeće patološke promjene: zubni karijes kod dvije osobe (42,9 %), odnosno u 16 % zubi, alveolarna resorpcija kod dvije osobe (28,6 %), odnosno 35,9 % zubi, hipoplazija zubne cakline kod dvije osobe (25 %) , odnosno 33,87 % zubi. Od osoba koje su imale sačuvane kralješke, tri osobe (27,3 %) imale su vidljive Schmorlove defekte. Jedanaest osoba imalo je znakove osteoartritisa (50% od svih odraslih osoba) na očuvanim zglobnim plohama. Kod jedne odrasle osobe i jednog djeteta vidljiva je cribra orbitalia u sanaciji. Ujedno su ovo jedine dvije osobe sa sačuvanim orbitama. Znakovi periostitisa vidljivi su kod tri odrasle osobe, odnosno 13,6 % od ukupnog broja odraslih osoba. Kod devetero djece (40,9 % od ukupnog broja djece) vidljivi su znakovi aktivnog generaliziranog periostitisa.

Osim ljudskog osteološkog materijala u 9 grobova pronađene su i životinjske kosti, od kojih je za ukupno 47 kostiju bilo moguće odrediti kojoj vrsti pripadaju i o kojoj se kosti radi. Popis zastupljenih životinja je sljedeći: ovca, koza, svinja, govedo, jelen i mačka. Također su pronađene i puževe kućice i školjke.

Za daljnje rasvjetljavanje demografske strukture stanovništva potrebne su dodatne analize.