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RISK FACTORS FOR THE DEVELOPMENT OF CARIES IN THE POPULATION OF THE ERA OF BRONZE LIVING IN THE TERRITORY OF THE MODERN POLTAVA REGION

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To provide high-quality treatment and prevention measures in modern dentistry, it is necessary to study the causes leading to pathology, from the moment of their appearance in the historical aspect. The objectives of this work are to study the mineralized dental deposits (as a major factor for the appearance and development of dental diseases) on teeth of people living in the modern Poltava region in the Bronze age. For this purpose 79 skeletons of the population from the territory of the modern Poltava region were examined. Among the skeletons in children's group, any pathological changes of dental tissue were not found. Pathological changes in the teeth of adults were also not discovered. The first precursors of caries and periodontitis – dental mineralized deposits- were found in women and men. So, in the study, mineral dental deposits were found in 25 people (32% of the population) In the skeletons of 4 woman (20% of the female contingent) and 21 men (50% of the examined skeletons of men). Only two types of deposits were identified: "thin line", "overhanging lump". Age of people with mineral deposits were from 14 to 60 years. The most frequently deposits are found at the age of 45-50 years. In most cases, dental deposits were found on the premolar and molars (22 cases out of 25), and a small number of front teeth (3 cases) were also affected.

Key words: dental mineralized deposits, Bronze age, skeletons, caries factors.

The connection of the publication with planned research works. The work is a fragment of the research topic of the Department of Therapeutic Dentistry with the Prevention of Dental Diseases of Poltava State Medical University: "Improvement of methods of diagnostics and treatment of hard tissues of teeth and periodontal tissues against the background of somatic pathology in children, taking into account socio-economic factors and psycho-emotional status" (State registration number – 0119U102852).

Introduction. A lot of modern scientific dental literature is devoted to the factors leading to the development of caries. At the same time, not enough attention is paid to the analysis of the historical time of appearance of individual causes of caries [1].

It is not determined, for example, the time of appearance in people of past centuries, such an important factor as dental deposits (the mineralized part of which is well preserved on teeth for thousands of years, in conditions of being in different soils and can be analyzed) [2]. So dental deposits in representatives of the Eneolithic (Copper Age – IV millennium – first half of the III millennium BC) from the territory of modern Ukraine have not yet been found [3]. Determining when risk factors have become pathogenic can help improve the treatment and prevention of common dental diseases. Hence, it seems important to study dental mineralized formations in teeth of people from communities of different historical periods.

The purpose of this work is to study dental mineralized deposits in teeth of people who lived in the territory of the modern Poltava region in the Bronze Age. To examine the skeletons of the population who lived in the Bronze Age to detect dental diseases, dental mineralized deposits, to determine their nature.

Object and methods of the research. For medical examination, bone material was used, which, according to archaeological data, belongs to the Bronze Age (mid-3rd millennium – 2nd millennium BC). The remains of 79 people of extremely poor preservation were examined (all the examined examples are preserved in the V. Krichevsky Poltava Museum of Local History). It should be noted that in all cases there are no complete frag-

Table – Types of MD revealed in the examined population of the Bronze Age

№	Sex	Age	MD Type	Teeth affected with MD	Surfaces of teeth with MD
1	**2**	**3**	**4**	**5**	**6**
1	♀	14-16	thin line	all	all
2	♀	20-23	thin line	lower front teeth	all
3	♀	25-30	overhanging lump	all	all
4	♀	55-60	overhanging lump	all	all
1	♂	18-20	overhanging lump	all	all
2	♂	18-21	thin line	all	all
3	♂	20-25	overhanging lump	all	all
4	♂	25-30	thin line	front teeth	all
5	♂	25-30	overhanging lump	all	all
6	♂	25-30	thin line	all	all
7	♂	25-30	overhanging lump	all	all
8	♂	30-35	overhanging lump	all	all
9	♂	35-40	overhanging lump	all	all
10	♂	40-45	overhanging lump	all	all
11	♂	40-45	overhanging lump	all	all
12	♂	45-50	thin line	all	all
13	♂	45-50	thin line	all	all
14	♂	45-50	overhanging lump	front teeth	all
15	♂	45-50	overhanging lump	all	all
16	♂	45-50	overhanging lump	all	all
17	♂	45-50	overhanging lump	all	all
18	♂	50-55	overhanging lump	all	all
19	♂	50-55	overhanging lump	all	all
20	♂	50-55	overhanging lump	all	all
21	♂	50-60	overhanging lump	all	all

Notes: Surfaces of teeth with MD – all (except for occlusal).

ments of bones However, the set of teeth was in good condition and completely preserved in 100% of cases.

Methods for determining pathological conditions of skeletal tissue were developed by the authors of this study, produced on the basis of the laboratory of historical and medical anthropology of the Communal institution "Center for the protection and research of archaeological monuments" of the Poltava Regional Council and the Department of Pediatric Therapeutic Dentistry with the prevention of dental diseases PSMU [4-9].

The results of the research and their discussion. The skeletons of 79 people were examined: 18 children's skeletons, 20 women's skeletons and 41 men's skeletons.

The average age in the female samples was 35 years old, the male samples was 40 years old, the average height in the female samples was 163.5 cm, and the male samples was 170.5 cm.

In the children's sample of skeletons, no pathological changes were revealed. There were no pathological changes in teeth of adults either. However, in women and men, precursors of caries and periodontal disease were found – dental deposits in the form of mineralized deposits (hereinafter – MD).

In total, MD were detected in 25 people (32% of the population): in the skeletons of 4 women (20% of the inspected female contingent) and 21 men (50% of the inspected male contingent). This circumstance, in it's turn, gives the right to assume that there was some difference in nutrition of men and women.

Only two types of MD were found: 1) "thin line", 2) "overhanging lump".

The age of people with MD were from 14 to 60 years old **(table)**. Most often MD are observed at the age of 45-50 years (6 cases were noted in the male collection of skeletons, which is 10% of the adult population). Basically, all groups of teeth with MD (22 cases out of 25), sometimes only the front teeth are affected (3 cases out of 25).

The apparent difference in the coverage of one or another tooth surface is a possible evidence of the prevailing hygienic traditions and rules of food intake in some communities of the Bronze Age.

Conclusions.

1. Diseases in the oral cavity according to the bone material were not found.
2. MD were detected in 32% of the examined skeletons.
3. With MD, 20% of the studied female and 50% of the male contingent.
4. Two types of MD were found: "thin line", "overhanging lump".
5. The age of people with MD ranged from 14 to 60 years.
6. Most often MD are observed at the age of 45-50 years (10% of the examined skeletons).
7. MD were found in all groups of teeth (22 cases, out of 25) and frontal teeth are covered (3 cases out of 25).

Prospects for further research. It should be pointed out that it is necessary to continue working with the bone remains of the population of this historical time, who left burials in this area, in order to collect data on health and dental pathology.

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ФАКТОРИ РИЗИКУ РОЗВИТКУ КАРІЄСУ У НАСЕЛЕННЯ ЕПОХИ БРОНЗИ, ЩО МЕШКАЛО НА ТЕРИТОРІЇ СУЧАСНОЇ ПОЛТАВСЬКОЇ ОБЛАСТІ

Чуприна Л. Ф., Каськова Л. Ф., Артем'єв А. В.

Резюме. Факторам, що призводять до розвитку каріозного процесу, присвячено багато сучасної наукової стоматологічної літерури. Разом з тим, аналізу історичного часу появи деяких причин виникнення карієсу приділяється не достатньо уваги. Не виявлений, наприклад, період часу виникнення у людей минулих століть такого важливого фактору як зубні відкладення (мінералізована частина яких гарно зберігається на зубах на протязі тисячоліть і в умовах знаходження в різних видах грунту і може бути ефективно використана для досліджень). Так зубні відкладення в представників енеоліту (мідно-кам'яний вік – IV тис. – перша половина III тис. до н.е.) на території сучасної України поки що не виявлені.

Мета даної роботи дослідити зубні мінералізовані нашарування на зубах людей що проживали на території сучасної Полтавської області в епоху бронзового віку .

Об'єкт і методи дослідження. З метою вивчення зубних мінералізованих відкладень у найдревнішого населення с території Полтавської області були оглянуті скелети 79 осіб бронзового віку (18 дитячих, 20 жіночих, 41 чоловічих скелетів).

Результати досліджень та їх обговорення. Серед скелетів дитячої групи змін патологічного характеру зубної тканини не виявлено. Патологічних змін в зубах дорослих людей, також не виявлено. У жінок і чоловіків знайдено перші провісники карієсу и пародонтопатій – зубні мінералізовані нашарування.

Висновки. Всього зубні нашарування виявлені у 25 осіб (32% населення). В скелетах 4-х жінок (20% з оглянутого жіночого контингента) та 21-го чоловіка (50% з оглянутих скелетів чоловіків). Виявлено тільки два типи нашарувань: «тонка лінія», «нависаючий ком». Вік людей з нашаруваннями від 14 до 60 років. Найбільш часто нашарування виявляються у віці 45-50 років (10% дорослого населення). В більшості випадків зубні нашарування виявлено на кутніх зубах (22 випадки з 25), також уражена невелика кількість фронтальних зубів (3 випадки).

Ключові слова: зубні мінералізовані відкладення,бронзовий вік, скелети, фактори карієсу.

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Chuprina L. F., Kaskova L. F., Artemiev A. V.

Abstract. A lot of modern scientific dental literature is devoted to the factors leading to the development of caries. At the same time, not enough attention is paid to the analysis of the historical time of the appearance of individual causes of caries. It is not determined, for example, the time of occurrence in people of past centuries, such an important factor as dental deposits (the mineralized part of which is well preserved on the teeth for thounds of years, under conditions of being in various soils and can be analyzed). So dental deposits in representatives of the Eneolithic (Copper Age – IV millennium – first half of the III millennium BC) from the territory of modern Ukraine have not yet been found.

The purpose of this work is to study dental mineralized deposits in the teeth of people who lived in the territory of the modern Poltava region in the Bronze Age.

Object and methods of the research. In order to study dental mineralized deposits in the ancient population from the territory of the Poltava region, the skeletons of 79 people of the Bronze Age (18 children, 20 women, 41 male skeletons) were examined.

Results of the work and their discussion. In the children's sample of skeletons, no pathological changes were revealed. Pathological changes in the teeth of adults were also not noted. In women and men, the precursors of caries and periodontal disease were found – dental mineralized deposits.

Conclusions. In total, dental deposits were found in 25 people (32% of the population). In the skeletons of 4 women (20% of the surveyed female contingent) and 21 men (50% of the surveyed male contingent). Only two types of them were found: "thin line", "overhanging lump". The age of people with deposits is from 14 to 60 years. Deposits most often observed at the age of 45-50 years (10% of the adult population). Basically, all groups of teeth occurred to be with deposits (22 cases out of 25 were identified), sometimes the frontal teeth are covered (3 cases).

Key words: dental mineralized deposits, bronze age, skeletons, caries factors.

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The Authors declare no conflict of interest.

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