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Bruxism as a Marker of Violation of Psychological Adaptation in Computer Game Players

Bruksizm jako marker zaburzenia adaptacji psychologicznej u graczy komputerowych

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SUMMARY

Aim: To study the relationship between the psycho-emotional state of computer game players with the development of bruxism, its early diagnosis in people at risk, increasing the effectiveness of preventive measures in people with this pathology.

Materials and methods: At the first stage of the study, a survey of 120 people (85 - men, 35 - women) aged 18 - 30 years was conducted. The computer club was chosen as the place of the poll. The questionnaire is represented by questions that were aimed at identifying clinical manifestations of bruxism. Also, the subjects were asked to take an automated FPI test to assess the psycho-emotional state. In the second stage of the study, according to the results, the main group of patients with bruxism was identified. It consisted of 68 people aged 18-30 years (50 – men, 18 – women). The control group of people consisted of 20 volunteers (10 – women, 10 – men), who did not show clinical manifestations of bruxism and temporomandibular joint dysfunction and who do not play computer games.

Results: According to a survey of 120 people aged 19-29, who often play computer games, it was found that 48.33% had bruxism. In 96.55% of the analysis of the FPI test revealed signs of mental distress. In the control group, the results of FPI in most indicators were average.

Conclusions: The prevalence of bruxism among young people who play computer games was 48.33%, which is associated with psycho-emotional distress of this category of people: increased neuroticism, sudden aggression, depression, irritability and emotional lability. Diagnosis by questionnaire allows to detect manifestations of the disease in the early stages of development.

Key words: bruxism, masticatory muscles, computer games, addiction

Słowa kluczowe: bruksizm, mięśnie żwacze, gry komputerowe, uzależnienie

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INTRODUCTION

The word bruxism is translated from the ancient Greek language as „gnashing of teeth". The more common nocturnal form of the disease, when gnashing occurs during sleep, but there is also a daytime form of the disease [1]. As a rule, a person may not even guess for a long time that he will gnash his teeth at night until his family members tell him about it. The diurnal form of the disease is often noticed by the patient himself.

Any form of bruxism has a negative effect not only on tooth enamel, but also on the work of the jaw joints.

According to statistics, about 10% of the population complain of gnashing of teeth during sleep. However, the final cause of the disease has not been established. It is believed that the main cause of bruxism is nervous tension and frequent stressful situations [2-4]. However, there is no consensus on what influences the emergence of bruxism. Nervous tension can cause nocturnal bruxism, because during sleep a person can not control the muscles of the face, and they can involuntarily contract, causing the gnashing of teeth [1, 5]. Therefore, bruxism is more common at night than during the day, because when we do not sleep, it is much easier to control the facial muscles.

Today's pace of computerization exceeds the pace of development of all other industries. Modern man begins to interact with the computer constantly - at work, at home, in the car and even on the plane. Computers are rapidly being introduced into human life, taking their place in our minds, and we often do not realize that what we start will depend on their performance. With the advent of computers, computer games appeared, which immediately found a lot of fans. With the improvement of computers, games have improved, attracting more and more people. According to forecasts, in the coming years the market of electronic games will steadily expand. A whole class of people who are fans of computer

games is being formed in society; the game becomes their main activity. The range of social contacts they have is very narrow, all other activities are aimed only at survival, to meet physiological needs; the main thing is to satisfy the need to play on the computer. Experience shows that many of them do not benefit from this hobby at all, and some seriously need help. Most of them are people with well-known psychological problems: poor personal life, dissatisfaction with themselves, and as a consequence, loss of meaning in life and normal human values. The only value for them is the computer and everything connected with it.

For mental health, the greatest danger of computer games is addiction [6, 7]. Dependence on computer games a person is most exposed, because the events in computer games are not repeated and occur quite dynamically, and the gameplay itself is continuous. Before the end of any game, there are some logical stages, which, for the most part, are quite tightly tied together, which forces the subject not to be distracted, but to perceive the passage of the whole game from beginning to end as a single process. Young people are especially prone to them [8].

AIM

The aim was to study the relationship between the psycho-emotional state of computer game players with the development of bruxism, its early diagnosis in people at risk, increasing the effectiveness of preventive measures in people with this pathology.

MATERIALS AND METHODS

Methods: at the first stage of the study sociological (questionnaire, FPI test), at the second stage - general clinical and special clinical (objective examination, history taking, general examination, palpation of the TMJ and masticatory muscles, diagnosis of static occlusion and dynamic), medical and statistical.

Materials: 1) results of the questionnaire (the questionnaire contains 10 questions related to the presence and clinical manifestations of bruxism in respondents), the number of respondents - 120 people,

2) the results of an automated FPI test to assess the psycho-emotional state. The questionnaire includes 12 diagnostic scales, the results of psychodiagnostic research are evaluated on a 10-point standard scale (from 1 to 10 points), the number of respondents - 120 people.

3) the main group of patients with bruxism (68 people aged 18 to 30 years, including 50 - men, 18 - women) and the control group - volunteers of 20 people (10 - women, 10 - men), who did not show clinical manifestations of bruxism and TMJ dysfunction and who do not play computer games.

RESULTS

At the first stage of the study, a survey of 120 people (85 - men, 35 - women) aged 18 to 30 years was conducted. The computer club was chosen as the place of the poll. The questionnaire is represented by ten questions, which were aimed at identifying clinical manifestations of bruxism.

1. Do you gnash your teeth while sleeping?
2. Has anyone heard that you gnash your teeth while sleeping?
3. Have you noticed that you wake up with clenched teeth?
4. Do you feel pain or fatigue in your jaws when you wake up?
5. Do you have a feeling of loosening your teeth when you wake up?
6. Do you have a feeling of pain in your teeth or gums when you wake up?
7. Do you have a headache in the temples during awakening?
8. Do you feel a jaw „jamming" / heaviness when opening the mouth on waking?
9. Have you ever noticed that you grit your teeth during the day?
10. Have you ever noticed that you gnash your teeth during the day?

The subjects were also asked to take an automated FPI test to assess the psycho-emotional state [9, 10]. The questionnaire includes 12 scales that diagnose neuroticism, spontaneous aggression, depression, irritability, excitability, sociability, poise, reactive aggression, shyness, openness, extraversion-introversion, emotional lability, masculinity-femininity. The results of psychodiagnostic research are evaluated on a 10-point standard scale (from 1 to 10 points). The following intervals of indicators are distinguished: from 1 to 3 - low level, from 3.1 to 4 - below average, 4.1-6.9 - average, 7-7.9 - above average, 8-10 - high level.

In the second stage of the study, according to the results, the main group of patients with bruxism was identified. It consisted of 68 people aged 18 to 30 (50 - men, 18 - women). The control group of people consisted of 20 volunteers (10 - women, 10 - men), who did not show clinical manifestations of bruxism and TMJ dysfunction and who do not play computer games. Further clinical examination consisted of history taking, general examination, palpation of the TMJ and masticatory muscles. Additionally, static and dynamic occlusion was diagnosed, and vertical occlusion distance was assessed.

According to the results of the survey, 120 people aged 19-29, who often play computer games, found that 48.33% had bruxism. In 96.55%, the analysis of the FPI test revealed signs of mental distress: increased levels of neuroticism, sudden aggression, depression, emotional lability, irritability, decreased level of balance and self-criticism. In the control group, the results of FPI in most indicators were average. At clinical examination of patients of the first group the nature of the closure of the teeth - planar, control - point. On palpation of the masticatory muscles in the first group, painful sensations in the areas of the lateral pterygoid and actually masticatory muscles, on palpation of the TMJ, a crunch was detected.

DISCUSSION

Psychological research has found a strong link between nocturnal bruxism in young people playing computer games with the level of situational anxiety. Anxiety as a personality trait was also slightly higher in players with nocturnal bruxism, which gives reason to talk about personal anxiety as a factor that leads to bruxism. The prevalence of bruxism among young people who play computer games was 48.33%, which is associated with psycho-emotional distress of this category of people: increased

neuroticism, sudden aggression, depression, irritability and emotional lability.

According to various authors, the prevalence of bruxism is from 5 to 90% in adults and from 10 to 50% in children; its decrease is observed in persons older than 60 years (Montagna P., 2013; Safari A., 2013; Lobbezoo F., 2014; Varalakshmi S., 2014; Vertrugo R., 2015). Significant discrepancies are due to imperfect diagnosis, as the verification of the diagnosis is still based on subjective data of questionnaires during sleep as the first symptoms of the disease (Macaluso G., 1998; Yoshida K., 1998; Bleicher V.M, 2002; Brokar D., 2009; Montagna P., 2013; Lobbezoo F., 2014; Kostenko E.Ya., 2016). Bruxism is a frequent manifestation of a generalized process, which is characterized by various somatic disorders and is caused by psychological stress. As a rule, the first to diagnose this pathology is a dentist.

At the local level, bruxism leads to a violation of the natural occlusion of the teeth, which significantly complicates the restoration of the correct ratio of the dentition (Klitinsky Yu. V., 2006; Slavychek R., 2008; Montagna P., 2013; Lobbezoo F., 2014; Varalakshmi S., 2014; De Meyer M., 2015; Jeffrey S., 2015; Vertrugo R., 2015).

Diagnosis by questionnaire allows you to detect manifestations of the disease in the early stages of development. As a prevention of bruxism and psycho-emotional disorders, the time of playing video and computer games should be limited. The use of a computerized psychodiagnostic system helps in the early stages of bruxism to determine the behavioral and personal characteristics of the patient, which can initiate the disease, knowledge of the psychological status of the patient helps to build an effective professional model of "doctor-patient" relationship. Further study of the etiology and central pathophysiological mechanisms of bruxism is needed. Requires a multidisciplinary approach of neurologists, psychiatrists, somnologists and dentists in the treatment of this disease. The treatment of anxiety and depressive disorders with drugs should be approached consciously, as it is often possible to induce bruxism in a patient.

CONCLUSIONS

1. The manifestation of nocturnal bruxism is significantly influenced by the level of anxiety, both situational and personal.
2. People with nocturnal bruxism have pronounced signs of psychological maladaptation on the FPI questionnaire scales: vitality, emotional functioning and mental health and need correction of psychological state and level of stress.
3. Nocturnal bruxism in computer game players is a marker of impaired psychological adaptation.

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Conflict of interest:
The Authors declare no conflict of interest

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