

Obsessive-compulsive disorder during the SARS-CoV-2 pandemic (case report)

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The novel coronavirus 2019 (COVID-19) pandemic has affected not only the somatic health of people but also their mental health and the organization of mental health care. Self-isolation, quarantine, extensive media coverage of the situation, a large amount of inaccurate information, and conflicting recommendations – all this has led to an increase in admission of patients who have not previously had mental illness to psychiatrists. As a confirmation of the influence of the above factors on the population's mental health, we present a case report of a 25-year-old patient who first came to a psychiatric clinic due to the obsessive-compulsive disorder that developed due to the pandemic.

Keywords: novel coronavirus infection; COVID-19; SARS-CoV-2; obsessive-compulsive disorder.

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The 2019 new coronavirus disease (COVID-19) pandemic has had a major impact on the health of people around the world. As of June 2021, more than 175 million cases of COVID-19 were registered in the world, which caused more than 3.7 million deaths. In the Russian Federation more than 5 million confirmed cases and more than 125,000 deaths were noted [1]. The pandemic has affected not only people's physical health, but also their mental health and the organization of psychiatric care. Restrictive measures taken by many countries to reduce the rate of transmission of SARS-CoV-2 have caused major social and economic upheavals around the world. Many people found themselves in isolation, were forced to switch to remote work, and leave their relatives [2–5]. The news about the unpredictable, rapid spread of the virus, which was widely reflected in the media, caused anxiety and stress among the population, which are normal psychological reactions to the changing state of the environment, according to the World Health Organization (WHO) [6]. In addition, daily news about the number of infected and dead people, as well as the lack of knowledge and pathogenetic treatment of the disease, led to violation of psychological well-being [7–14].

Mental disorders that occur during an epidemic are caused by various reasons and are divided into two groups. The first group is caused directly by the impact of the virus on the psyche. Various exogenous-organic reactions can occur due to SARS-CoV-2 infection, its direct effect on the brain, virus-induced hyperinflammatory and hypercoagulation conditions and post-infectious immune-mediated processes [15].

The second group, which we would like to discuss in more detail, includes patients whose mental disorders occur as a result of exposure to psychotraumatic factors: isolation, separation from relatives, changes in working conditions and reduction of funds, fear of infection and concern for the health of relatives. People

began to experience significant anxiety about their health, which was reflected in demand for personal protective equipment and an increase in the number of requests for medical care, often for no apparent reason. These circumstances also led to an increase in demand for psychiatric care, including among people who have never previously sought it.

Among the disorders diagnosed during the epidemic, the following predominate: post-traumatic stress disorder (PTSD), adaptation disorders, anxiety, depressive reactions and insomnia [12, 16]. Most often, people complain of constant fear, expectation of threats, feeling of loneliness, constant thoughts about possible infection, irritability, irrational actions related to quarantine (from denial of its necessity to fanatical adherence to all established regulations, creating their own rules) [17].

Statistics indicate that young people who are studying at university, are not married, and actively follow the news are most likely to develop mental disorders during the epidemic [18]. It is also worth noting that there is a predisposition to the development of symptoms of mental disorders in individuals with such character traits as anxiety and suspiciousness [19].

To confirm the impact of psychotraumatic factors associated with the epidemic on people's mental health we present a clinical observation.

Patient B., born in 1995, presented with complaints of anxiety, «heaviness in the head», difficulty concentrating, inability to work.

Medical history

Heredity is not burdened by mental illnesses. The patient's mother is an engineer, she is emotional, anxious by nature, and tends to show excessive custody of her son. His father, who was the general manager of a seafood company, currently does not

work because of disability due to a severe gunshot wound. The patient is an only child in the family. He grew up as an obedient, calm child, and did not lag behind in development. His parents spoiled him by overindulgence. He attended kindergarten from the age of 3, was shy and timid, occasionally took the initiative in games and communication. He went to school at the age of 7, hardly adapted to the team, was unsociable. He didn't like studying, nor did he have any favorite subjects. Up to the 7th grade, he suffered from excess weight, which caused him to be bullied by his peers, reacted painfully to it, and shared his experiences with his mother. He tried to communicate more with his peers so that they would not offend him. His mother, concerned about her son's excess weight and the children's attitude towards him, began to turn to various specialists and conduct different medical examinations. Among other things, a consultation of an endocrinologist was recommended, who diagnosed hyperglycemia and prescribed metformin, against which the patient's weight returned to normal. He started playing sports, following a diet, gained self-confidence, and found it easier to communicate with his peers. At the same time, relations with parents became more complicated. They wanted a divorce, and he tried to dissuade them from it. There was a conflict: he threatened to leave home in the case of the divorce. In high school, he began to go to school with pleasure, made a lot of friends, had his own company. He spent most of his free time playing active games, as he was afraid of re-gaining weight. In the 11th grade, he began to prepare for admission to the Faculty of Economics of Moscow Aviation Institute. When taking the Unified State Exams, he was very worried, couldn't get his mind together and concentrate, and passed them worse than the mock exams. Nevertheless, the points were enough for admission to the Institute. In the first year, difficulties arose in relations with his classmates, as self-doubt and shyness returned. Later, after getting used to new people, he became more sociable, and relationships improved. He began to attend parties more often, where he consumed alcoholic beverages, and sometimes tried to smoke marijuana. He started dating girls to «improve his communication skills», but he didn't want to start a serious relationship. To maintain physical fitness and attract the attention of women, he actively worked out in the gym. After graduation, he got a job as an analyst in a pharmaceutical company. Once again, it was difficult for him to adapt to a new team, and to cope with the work. Six months later, he was laid off and moved to a new job. At the new place, good relations with colleagues quickly developed, and he liked his job. He began to meet with a girl, his colleague, and soon they began to live together. He quickly got promoted – was appointed to the position of the main analyst.

In February 2020, after the announcement of the beginning of the new coronavirus infection pandemic, anxiety and fear of infection appeared. He read a lot of literature on infectious diseases, followed the news closely, tried to conduct his own analysis of the development of the epidemic and make a forecast. There was a fear of infection in public places, including at work. He carefully observed a social distance, wore a mask, and avoided people with symptoms of respiratory diseases. He decided to isolate himself and took a vacation. He bought individual protection items in large quantities, as he was afraid that they would suddenly disappear from sale. He also created a stock of essential foods. After the end of the vacation, an official quarantine was introduced, and all employees were transferred to distant work. During the isolation period, he left the house only to take out the

garbage. According to him, when leaving the house, he ran down the stairs and tried not to inhale the outdoor air. After returning home, he washed and treated all clothes with an antiseptic. He constantly told his girlfriend to strictly observe the rules of personal protection, because he thought she could infect him. He strictly forbade her to touch him if she didn't wash her hands with an antiseptic and didn't change her clothes after being outdoors. He carefully supervised the handling of any items she brought home. He also asked her to keep a social distance and wear a mask and gloves for an hour after returning home. He processed products from the store with detergents, first in the package, then after removing the package and asked his girlfriend to do the same. There were frequent quarrels, because the patient insisted on his partner's staying at home most of the time, while she was not afraid to go out. When he was at home and didn't have contacts with anyone, he felt safe, and the rest of the time he was very anxious and afraid of infection. By the end of May 2020, the self-isolation regime was canceled, and it was necessary to return to the office. For the first two weeks, he took a taxi, tried not to interact with anyone, used all personal protective equipment (a respirator, gloves, and kept a social distance). At the same time, he admitted that other people may not follow the rules so strictly and there was still a high probability of infection. Two weeks later, at work, he experienced a feeling of lack of air, «suffocation». He immediately phoned his mother, regarding his feelings as symptoms of the coronavirus infection. He didn't call a doctor, so as not to be a source of infection. He stayed at home for two days, the attacks of lack of air did not recur. He took valocordin, used steam inhalations. In June, the condition worsened again: there was a feeling of «clouding in the head», nausea, memory loss, dizziness, insomnia, tension in the eyes, severe fatigue. He went to the hospital, underwent an examination: MRI, ultrasound of blood vessels, and a lot of tests. The diagnosis of coronavirus infection was not confirmed, but the alarm remained. His condition improved slightly only when walking and exercising. He independently concluded that his worries about possible infection led to the fact that «the psyche was disturbed». As prescribed by a neurologist, he took mexidol, actovegin, milgamma, but did not feel any improvement. He continued to work, but his productivity declined, concentration was disrupted, and he was constantly experiencing anxiety, which did not go away with careful compliance with all the measures recommended by the media for protection against coronavirus. His girlfriend, made a decision to break off the relationship because she couldn't stand his constant monitoring of her behavior and his suspicion that she might infect him. Against the background of these events, he decided to seek help from S. S. Korsakov Psychiatric Clinic. He was consulted by a psychiatrist and hospitalized.

Mental status on admission

The patient entered the office and sat down on a chair right next to the door, away from the doctors. He was wearing a medical mask and rubber gloves. At the doctor's request, he took off his gloves. The skin on the hands was dry, macerated, in small cracks from endless washing and treatment with disinfectants. The patient was correctly oriented in time, place, and his personality, but anxious and focused on his condition. He complained to the doctor of heaviness in the head, unpleasant sensations when turning the head, increased fatigue, «decreased short-term memory», «inability to concentrate», «blurred vision in the eyes», sleep disorders. He said that he regretted closely

following the development of the situation with the epidemic and fanatically observing all the instructions. Although he understood this, he couldn't cope with himself, because if he hadn't done it, it would have caused constant anxiety and fear. He said that since February 2020, he hardly left his home, traveled by taxi, and experienced constant concern about the adequacy of hygiene products and antiviral protection. He assumed that «there really was a threat before», but at the moment he wanted to stop thinking about it. The patient was in low mood and worried about the damage his current condition had done to his professional and personal life. He noted that he felt calmer in the hospital but continued to comply with the regime. He was actively interested in the prognosis and duration of upcoming therapy but was concerned about mental deterioration. No perceptual deceptions or suicidal thoughts were detected. He was seeking help, ready for treatment, as he felt he was unable to get rid of painful thoughts on his own.

Admission diagnosis according to the International Classification of Diseases 10th Revision (ICD-10): «F42. Obsessive-compulsive disorder».

Prescribed therapy: 1. Hydroxyzine — 25 mg 3 times a day 2. Mirtazapine — 15–30 mg at night. After two weeks of therapy, there was no positive dynamics in the patient's condition: anxiety, fear, low mood, sleep disorders, and a feeling of constant threat of infection remained. It was decided to change the treatment regimen to fluvoxamine 100 mg and bromdihydrochlorophenyl-benzodiazepine 0.5 mg at night.

Results of magnetic resonance imaging (MRI): MR-single foci of increased MR-signal in the right frontal lobe, most likely of vascular origin. Conclusion: without pathology

Duplex scanning of extracranial parts of the brachiocephalic arteries: echographically, there were no signs of hemodynamically significant changes in the brachiocephalic arteries basins at the extracranial level, minor local compaction of the intima-media complex (IMC) in the area of the ostium of the right subclavian artery and bifurcation of the common carotid artery (CCA) on the right. The course of the vertebral arteries was relatively straight on both sides, blood flow velocity indices corresponded to the physiological norm for his age, without significant asymmetry of the sides; there were signs of minor venous circulation disturbance in the vertebral vein systems, mainly on the right.

Conclusion based on the experimental psychological examination data: on examination the patient was willing to talk, answered the questions adequately, reacted in a positive way. His main complaint was fear. He responded to encouragement but kept the distance. His behavior was somewhat constrained and shy. He used the opportunity to talk about himself and his experiences, to get attention, support, and empathy. He followed the instructions when performing experimental tasks. The pace of work was even. No fatigue was observed. Memory and attention without special features. No violations of mental activity were detected. Operations of analysis, synthesis, generalization, and abstraction were preserved. Among the individual characteristics, a pronounced anxiety component in the personality structure was noteworthy, which was reflected in an increase in the neurotic triad scales but did not go beyond the limits of normal values. (MMPI «Methodology of multi-faceted personality research» Berezin F. B., Miroshnikov M. P., Sokolova E. D.); similarly, the assessment on the Spielberger-Khanin scale revealed a high level of reactive anxiety and personal anxiety. There was a

decrease in the threshold of tolerance to stress and lack of formation of coping behavior methods (Lazarus coping test method «Assessment of behavior in a difficult life situation»): confusion — at the cognitive level (maladaptive coping mechanism); self-blame — at the emotional level (maladaptive coping mechanism); compensation — at the behavioral level (relatively adaptive coping mechanism). The questionnaire Lifestyle Index (LSI) was used to diagnose the mechanisms of psychological defenses (G. Kellerman R. Plutchik «Methodology of lifestyle index»). Leading psychological defenses: «denial», «suppression», «intellectualization». Thus, the conducted examination did not show a decrease in certain mental functions, namely memory and attention. The pace of speech, associations, and psychomotor reactions was not slowed down. No violations of mental activity were detected. The operations of analysis, synthesis, generalization, and abstraction were preserved. General state of intellectual and cognitive activity without pathology. Among the individual characteristics, a high level of education, reactive anxiety and personal anxiety attracted attention. There was a decline in adaptive capabilities due to insufficient mechanisms of coping behavior. Leading psychological defenses: «denial», «suppression», «intellectualization».

Dynamics in the hospital

Against the background of the treatment, the condition improved: the fear of infection disappeared, the number of precaution measures decreased (he continued to wear a mask but began to communicate with other patients and go out), his mood improved, and somatic symptoms disappeared. He became more active, sociable, expressed an active desire to return to work. Thoughts about possible infection decreased and appeared only if someone started a conversation about it. Night sleep was without waking up, appetite was not reduced. He reported becoming tired of staying in the clinic and was making plans for the future.

It was recommended to continue treatment: fluvoxamine 100 mg at night, bromdihydrochlorophenyl-benzodiazepine 0.5 mg at night.

Outpatient monitoring:

After 6 months, there was a significant improvement in the quality of life and adaptation of the patient: he changed his job to a higher paying one, began to live with a girlfriend. The fear of infection passed. In February 2021, he was ill with the new coronavirus infection in a mild form, and no deterioration in his mental state was detected in this regard. The patient remains attentive to his health, regularly conducts hormonal examinations and consults a psychiatrist.

Supportive therapy with fluvoxamine (50 mg at night) is recommended.

Comment

In this clinical case, we are talking about obsessive-compulsive disorder (OCD), which first occurred during the COVID-19 epidemic, in a person with anxiety-suspicious character traits. The patient's condition was characterized by obsessive fears of infection, compliance with characteristic rituals: processing all things after being outdoors, products bought in the store, the desire not to leave home, strict observance of social distance and constant use of personal protective equipment even in situations where it was not required. At the same time, the patient could not distract himself from thoughts of

possible infection, therefore, his anxiety persisted, and he was unsuccessful in the fight against obsessive fears. The patient's mental status was dominated by anxiety, fixation on the fear of infection, constant return to this topic in conversation, low mood, the desire to stop thinking about infection and return to his usual life.

Anxious-suspicious traits, as premorbid personality traits, have been manifested since the patient's early childhood: he had difficulty adapting to the team, was shy to take initiative in the circle of other children, adapted to common interests and tried not to stand out. From an early age (14 years), he has been closely monitoring his health, paying attention to any changes in his condition. The coronavirus pandemic and the necessary measures, as well as information from mass media related to it, formed a fertile personal ground for the development of neurosis.

Thus, this mental disorder can be classified according to the International Classification of Diseases, Tenth Revision (ICD-10) as obsessive-compulsive disorder (F42) in an anxious-hypochondriac personality.

The peculiarity of this case is that the patient was practically healthy, socially adapted, and the first symptoms of the disease appeared against the background of pandemic of COVID-19, which was a stressful and traumatic situation that caused the onset of the disease. This is also supported by studies showing an increase in the number of patients who have first seen a psychiatrist during the pandemic. Mass fear of COVID-19, rightly referred to as «coronaphobia» [20], is probably associated with uncertain nature and an unpredictable course of the disease, intolerance to uncertainty, perceived risk of infection, and avoidance reactions among people who have not previously sought psychiatric care [21]. Foreign sources also confirm the increase in primary diagnoses of OCD during the pandemic [22].

In our case, the first symptom of a mental disorder was the patient's fear of infection and concern for his health. Despite the fact, that neither the patient himself, nor any of his relatives had encountered the infection, he experienced a panic fear of it, which he could not interpret for himself. This also coincides with the results of studies on predictors of the development of mental disorders, including OCD, during the pandemic. Thus, a study by Michael G. Wheaton indicates a pronounced degree of correlation between the occurrence of OCD with health concerns and fear of the spread of the virus [23].

In the patient's status, attention is drawn to obsessive methods of preventing infection: fanatical treatment with disinfectants of any objects and products brought home, fear of inhaling outdoor air, forcing the partner to keep a distance from him, not to touch him, treat clothes and hands, wear a mask in the apartment, the decision to stop visiting work before self-isolation was officially required. The patient was

concerned about possible shortages of protective equipment, and therefore he purchased them in large quantities. Recent research on mental illnesses caused by the pandemic also confirmed that deterioration of people's mental state is more often manifested in excessive and often ritualistic compliance with personal protective equipment rules in an attempt to prevent infection. People who are overly concerned about observing the above rituals may worry about the lack of emergency care and basic services during isolation, and this unrealistic panic may lead to attempts to hoard food and other basic things (such as hand sanitizers, medications, protective masks, or even toilet paper) [17, 24].

Our patient did not have the coronavirus infection and was not at risk of developing serious consequences of the infection. At the same time, he regularly followed the infection statistics, news about the development of the epidemic, and independently conducted morbidity analysis. Recent studies of the clinical features of mental disorders that have occurred during the new coronavirus infection confirm the dependence of emerging disorders on the degree of immersion of the patient in the information field, the desire to keep up to date with the latest news [8, 13, 25].

Taking into account the peculiarities of the clinical picture of the disease, a fluvoxamine therapy scheme was selected. The choice of fluvoxamine as a basic antidepressant in an average daily dosage corresponding to the severity of anxiety and depressive experiences was due to the profile of its psychopharmacological activity: a pronounced antidepressant effect in combination with powerful anxiolytic and anti-obsessive effects, as well as a certain effect on somatoform symptoms [26]. Maintenance monotherapy with fluvoxamine had a positive effect on anxiety-phobic experiences: the patient's condition stabilized. The fear of infection practically disappeared, even when the patient was infected with the coronavirus, there was no deterioration in his mental state, he also became more adapted, and the quality of life improved. The choice of this drug also coincides with the results of studies on the treatment of mental disorders during the pandemic, taking into account its safety, pronounced antidepressant and anti-anxiety effects [27].

Thus, our observation demonstrates the dependence of the development of mental disorders during the pandemic not so much on the fear of serious illness and possible death, but on the constant flow of information about the number of infected and deceased, necessary precautions, and general panic mood in the society. The possibility of prompt psychiatric care for patients with developing mental disorders against the background of the epidemic will help prevent their progression and speed up the adaptation of patients, which is especially important given the unpredictable and rapidly developing nature of the pandemic.

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Conflict of Interest Statement

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