



Case Report

Psychosis due to anxiety related to COVID-19: A case report

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ABSTRACT

Introduction and importance: Limited information is available regarding various effects of lifestyle changes caused by coronavirus pandemic on human life. On the other hand, if the fear of getting infected by coronavirus is accompanied by other psychological crises, it can possibly lead to psychosis in people with or without a previous history of mental illness.

Case presentation: The patient is a 36-year-old man with no previous history of mental illness who divorced his wife 6 months before the onset of COVID-19 pandemic. The patient developed auditory hallucinations and paranoid thoughts after the outbreak. After diagnosis of psychosis, treatment with injectable haloperidol was started. He was then treated with risperidone for maintenance therapy. On the other hand, for depressive symptoms, the patient was treated with bupropion. One week after starting the treatment, the patient's paranoid thoughts and auditory hallucinations improved.

Clinical discussion: Getting infected with coronavirus or being severely afraid of it may cause symptoms of psychosis in those with a history of previous mental disease. There is also evidence that extreme fear of infection with coronavirus can lead to psychosis if accompanied by other psychological crises.

Conclusion: It is necessary to pay more attention to the diagnosis and treatment of anxiety caused by COVID-19. Failure to immediately treat the anxiety caused by the fear of infection in this pandemic or other epidemics can lead to more serious problems such as psychosis and create further risks for the individual, family and community.

1. Introduction

SARS-CoV-2 is a single-stranded RNA virus from coronavirus family that caused widespread infectious pneumonia all over the world in 2019. On March 11, 2020, WHO declared pneumonia due to this virus as a pandemic due to its high prevalence. The coronavirus has spread to all countries of the world and caused outbreaks in many countries around the world [1,2].

This pandemic can be considered as the third one associated with coronaviruses in the last two decades after SARS in 2003 and MERS in 2012. Like most recent respiratory viral pandemics (except for MERS that began in Saudi Arabia), COVID-19 originated in China. Seafood restaurants and live animal sales centers in Wuhan, China can be considered as the first place where this disease was detected [3].

The clinical manifestations of COVID-19, which are similar to seasonal flu, occur mainly with the involvement of human respiratory system. Due to the virus's propensity for the upper respiratory tract and its ability to multiply rapidly in lung cells, the disease has an infection period of 1–14 days (5 days on average). The most obvious symptoms of COVID-19 are fever, myalgia, dry cough, fatigue, dyspnea, hemoptysis and headache. In many cases, patients harboring the virus experience only a mild respiratory infection with fever and cough. However, the results in early stages of the pandemic showed that about 14% of patients progress toward adult respiratory distress syndrome. In this situation, intubation and mechanical ventilation are needed to save patient's life. However, the severity of the disease and its progression to more acute stages are a function of age, underlying disease and the drugs the patients consume [4–6].

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In addition to the impact of COVID-19 on physical condition of patients, many studies have shown that infection with this virus has direct psychological effects on patients as well as on those around them. Some other studies have even indicated that measures such as quarantine, which have been implemented by different governments to reduce the cycle of disease transmission and prevent its spread, have led to mental illness in healthy people. In some cases, healthy people are also exposed to risks such as anxiety, depression, and domestic violence [7]. We report a case of a patient with no history of mental disease who developed symptoms of psychosis associated with COVID-19 anxiety. This case report has been reported in line with the SCARE Criteria [8].

2. Case Presentation

The patient is a 36-year-old engineer with a good socioeconomic status who got married about 10 years ago and has no children. The patient divorced his wife about six months before the onset of COVID-19 pandemic, and he is currently single and lives with his parents. After the divorce, the patient developed conditions such as isolation, too much sleep, lack of speech, reduced attention to work, etc., which were intensified with the onset of quarantine due to the pandemic. The symptoms, one of which was auditory hallucination, appeared about 3–4 months after quarantine. According to the patient, someone tells him "It Happens". The patient also developed pessimistic thoughts about his family members and thought they were plotting against him. The patient first consulted a private psychiatrist about six months after the start of quarantine with the mentioned symptoms, including hallucinations and paranoid thoughts. He was then referred to a psychiatric hospital for further treatment. It was a specialized hospital for the treatment and hospitalization of the mentally ill patients.

In the initial investigation, the patient stated that his parents and family intended to plot against him. On the other hand, he was constantly talking about a voice reverberating in his mind (it happened). On further examination, the patient told that a voice in his mind said that he knew this was going to occur, namely the same crisis and COVID-19 epidemic. The patient said that the voice told him that he had known about the crisis and the end of the apocalypse over the past year. The patient stated that he has been living with this sound for about one year.

The patient had no history of smoking, addiction, alcohol or psychedelics abuse at any point in his life. He also did not take any medication and was not dependent on any particular medication. No degree of mental illness or history of similar symptoms was found in his first-degree relatives as well other relations, and therefore this patient is the first case in his kinsfolks. The results of all hematologic parameters such as CBC and Diff, as well as BUN, CR, electrolyte and hormone level tests were all normal.

The patient was diagnosed with new onset psychosis considering the interview and the symptoms of depression after divorce, and aggravation of psychological stress of the patient was due to quarantine caused by COVID-19 as well as the conditions created after depression. The patient was hospitalized according to his condition. In acute phase, the patient was treated for psychotic symptoms with 5 mg injectable haloperidol three times a day. He was then subject to risperidone for maintenance treatment (A 1 mg tablet daily). On the other hand, for depressive symptoms, the patient was treated with bupropion (A 100 mg tablet daily). The patient's paranoid thoughts and auditory hallucinations improved one week after starting the treatment. The patient was hospitalized for another week and then discharged.

The patient was visited a total of four times after discharge, namely 1, 3 and 7 weeks after discharge and the last time about 20 weeks after discharge. Of course, this procedure was recommended for the patient's follow-up, but the patient referred to his doctor irregularly. During the 20-week follow-up procedure, the patient had no particular problem and no psychosis or other problems recurred.

3. Discussion

Numerous studies revealed that COVID-19 pandemic has led to a great deal of psychological stress to people around the world due to the high percentage of viral infections and the increasing number of deaths worldwide [9,10]. There are few reports that the fear and anxiety may cause psychotic symptoms in patients with a history of mental illness [11]. However, there are not many cases of people suffering from psychosis due to anxiety of getting infected with COVID-19 without themselves or their relatives having a previous mental disease.

Symptoms of psychosis are seen in people with a history of previous mental illness who had mild symptoms of COVID-19 and a positive test of it are among the reported cases. However, developing psychosis following a period of forced quarantine and anxiety due to the fear of getting infected with COVID-19 is a rare clinical condition. Beforehand, a similar case of psychosis occurred in a 38-year-old woman from Lima (Peru) with no previous history of mental illness following fear of getting infected with COVID-19 [12].

In the present report, a set of environmental factors paved the way for the onset of psychotic symptoms. In such cases, symptoms of psychosis may occur if the person has a family history and is vulnerable. Nevertheless, the case's family and relatives had no previous history of mental disease and hence he probably was not susceptible to psychosis. Another point is that a relatively large number of cases have been reported to develop symptoms of psychosis such as hallucination and delusion after the onset of COVID-19 symptoms or a positive test [13, 14]; however, it is very rare for people to develop psychosis due to fear of getting infected with COVID-19.

In the current study, our patient experienced a psychological crisis resulting from his divorce at the onset of coronavirus pandemic, which made him more vulnerable to psychological illness than the general population. With the announcement of quarantine by the government and the emergence of critical conditions resulting from this pandemic, the psychological pressure on this person increased. Eventually, the combination of the above factors and his anxiety of contracting the coronavirus caused the symptoms of psychosis to appear suddenly.

Given the number of similar case reports, more research is needed to investigate the prevalence of anxiety and stress due to fear of COVID-19. The approaches meant to deal with this anxiety and stress should also be considered; for example, Logotherapy may be helpful. If people find meaning in their lives, they can survive the most difficult situations and suffer less psychological damage [15–17].

4. Conclusion

The prevalence of COVID-19 has already subsided significantly with the expansion of vaccination in many countries around the world. However, the chance of showing such symptoms and problems is much higher in some developing and less developed countries due to poor vaccination coverage, which exposes them to greater risk of psychological disease compared to other parts of the world. Besides, this pandemic is definitely not the last one, and we should learn from it as well as from epidemics and pandemics of the past to face the future instances of them. With respect to the current case, there is an urgent need to pay more attention to the diagnosis and treatment of anxiety and fear caused by COVID-19 and the implementation of psychological interventions to improve mental health status. Lack of immediate treatment of these diseases can cause more important problems such as psychosis and create further risks for the individual, family and community.

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Ethical approval

This case report has been reported in line with the SCARE Criteria [8]. The patient signed the written informed consent form.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

S.K involved in interpretation and collecting of data, writing- Original draft of the manuscript and revising it. R.D involved in writing- Original draft of the manuscript. SMMM involved in editing the final version of manuscript. All authors reviewed the paper and approved the final version of the manuscript.

Research registration

Not applicable.

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Declaration of competing interest

There is no competing of interest to report.

References

- [1] M. Cascella, M. Rajnik, A. Aleem, S.C. Dulebohn, R. Di Napoli, Features, Evaluation, and Treatment of Coronavirus (COVID-19). StatPearls. Treasure Island (FL), StatPearls Publishing Copyright © 2022, StatPearls Publishing LLC., 2022.

- [2] S.M.M. Mahdavinooor, M.H. Rafiei, S.H. Mahdavinooor, Mental health status of students during coronavirus pandemic outbreak: a cross-sectional study, *Annals of Medicine and Surgery* (2022) 103739.
- [3] S. Omboni, R.S. Padwal, T. Alessa, B. Benczur, B.B. Green, I. Hubbard, et al., The worldwide impact of telemedicine during COVID-19: current evidence and recommendations for the future, *Connect Health* 1 (2022) 7–35.
- [4] L. Premraj, N.V. Kannapadi, J. Briggs, S.M. Seal, D. Battaglini, J. Fanning, et al., Mid and long-term neurological and neuropsychiatric manifestations of post-COVID-19 syndrome: a meta-analysis, *J. Neurol. Sci.* 434 (2022) 120162.
- [5] M. Seixas, L.P. Mitre, S. Shams, G.B. Lanzuolo, C.S. Bartolomeo, E.A. Silva, et al., Unraveling muscle impairment associated with COVID-19 and the role of 3D culture in its investigation, *Front. Nutr.* 9 (2022) 825629.
- [6] L. Wang, N. Yang, J. Yang, S. Zhao, C. Su, A review: the manifestations, mechanisms, and treatments of musculoskeletal pain in patients with COVID-19, *Front Pain Res (Lausanne)* 3 (2022) 826160.
- [7] Z. Su, D. McDonnell, S. Roth, Q. Li, S. Segalo, F. Shi, et al., Mental health solutions for domestic violence victims amid COVID-19: a review of the literature, *Glob. Health* 17 (1) (2021) 67.
- [8] R.A. Agha, T. Franchi, C. Sohrabi, G. Mathew, A. Kerwan, The SCARE 2020 guideline: updating consensus surgical CAse REport (SCARE) guidelines, *Int. J. Surg.* 84 (2020) 226–230.
- [9] J. Qiu, B. Shen, M. Zhao, Z. Wang, B. Xie, Y. Xu, A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations, *Gen Psychiatr* 33 (2) (2020), e100213.
- [10] C. Wang, R. Pan, X. Wan, Y. Tan, L. Xu, C.S. Ho, et al., Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China, *Int. J. Environ. Res. Publ. Health* 17 (5) (2020).
- [11] M. Fischer, A.N. Coogan, F. Faltraco, J. Thome, COVID-19 paranoia in a patient suffering from schizophrenic psychosis - a case report, *Psychiatr. Res.* 288 (2020) 113001.
- [12] J. Huarcaya-Victoria, D. Herrera, C. Castillo, Psychosis in a patient with anxiety related to COVID-19: a case report, *Psychiatr. Res.* 289 (2020) 113052.
- [13] N. Kozato, M. Mishra, M. Firdosi, New-onset psychosis due to COVID-19, *BMJ Case Rep.* 14 (4) (2021).
- [14] S.J. Ferrando, L. Klepacz, S. Lynch, M. Tavakkoli, R. Dornbush, R. Baharani, et al., COVID-19 psychosis: a potential new neuropsychiatric condition triggered by novel coronavirus infection and the inflammatory response? *Psychosomatics* 61 (5) (2020) 551–555.
- [15] C.E. Hill, G. Bowers, A. Costello, J. England, A. Houston-Ludlam, G. Knowlton, et al., What's it all about? A qualitative study of undergraduate students' beliefs about meaning of life, *J. Humanist. Psychol.* 53 (3) (2013) 386–414.
- [16] Z. Shahhosseini, Z. Hamzehgardeshi, R. Marzband, M. Azizi, Meaning in life as a predictor of the general health among medical sciences students: a cross-sectional study, *Nursing Open* 8 (3) (2021) 1175–1182.
- [17] V.E. Frankl, *The Will to Meaning: Foundations and Applications of Logotherapy: Meridian*, 1988.