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Letter to the Editor



Fear of spreading COVID-19 infection in a female with psychotic illness leading to suicidal and homicidal attempt: A case report

1. Introduction

The psychological impact of COVID-19 pandemic has been wide ranging (Tandon, 2020). There are reports of new onset psychiatric disorders in general population (Xiong et al., 2020). Additionally there are reports of worsening or relapse of ongoing psychiatric disorders, such as obsessive compulsive disorder, bipolar disorder and other anxiety disorders (Davide et al., 2020; Pan et al., 2021). Some of the reports also suggest new onset psychotic disorders or worsening of psychotic disorders (Kozloff et al., 2020), possibly due to various aetiologies, such as increase in stress levels, use of medications to manage symptoms of COVID-19 infection, etc (Brown et al., 2020).

In some of the reports, the manifestations of psychiatric disorders, i. e., neuro-psychiatric manifestation has included issues specific to COVID-19 infection, for example coronaphobia (Asmundson and Taylor, 2020; Dinakaran et al., 2020). Few case reports have presented psychotic symptoms related to COVID-19 infection (Parker et al., 2021; Parra et al., 2020; Varatharaj et al., 2020). In our report, we aim to describe a young female with psychotic and depressive symptoms who presented with suicidal behaviour and psychopathology related to COVID 19 infection, who was managed with electroconvulsive therapy and psychotropics.

2. Case Description

A 27 year married female, with no past or family history of mental illness, was admitted with 20% superficial thermal burns. Psychiatry consultation was sought as she refused dressing and medications. On detailed psychiatric evaluation she was found to be suffering from a psychotic illness, for last 3 years, which had an insidious onset, and continuous course. The illness was characterised by delusion of infidelity, delusion of reference and behavioural disturbances since last 3 years. Her symptoms persisted in varying intensity till mid-March 2020, when she regularly started following the news related to COVID-19. She started remaining tense and distressed about the COVID infection, would express worries regarding her and her family's health. In the same week, she had some trivial sneezing and sore throat for a day, with no associated fever, shortness of breath or contact with any person with COVID-19 infection. Following this, she started believing that she might be having COVID-19. She knew that COVID-19 spreads through droplets, due to close contact with person who has the disease. However, she believed that in her case, COVID-19 infection had started from inside her, though she could not explain it further. Over the next few days, she found 2 neighbours sneezing and started to believe that she was spreading COVID-19 to others. She never got tested for COVID-19, but strongly believed that she was spreading the infection to others. Over

next 1 month, she started remaining sad and tired most of the time, lost interest in all housework and leisure activities, and even found taking care of her daughter to be difficult. She started remaining fearful that people will find out and beat her and her daughter for spreading COVID-19 and stopped going outside. She would frequently express death wishes to her husband to save the family from a public humiliation, and at times would think of elaborate plans to kill herself. The symptoms kept on progressing and on one morning in August 2020, while making tea, she had the idea of killing herself and her daughter by self-immolation. That afternoon, when all her family members were sleeping, she took her daughter, locked themselves up in the kitchen and set the cooking gas on fire, with intent to die. The screams of her child awakened the family members, who quickly rescued them and brought them to our hospital. She sustained superficial burns on both the arms and legs, while her daughter suffered from 30-40% superficial to deep burns on face, both arms and legs. The burn injuries led to admission to the hospital. There was no history suggestive of any hallucinations, made phenomenon, somatic passivity, negative symptoms, manic symptoms, obsessive compulsive symptoms, substance use, seizures, head injury, fever, focal neurological deficits. Her mental state examination revealed that she still believed that she was having COVID-19 infection and was spreading to others. She was explained that her COVID-19 report is negative, but still she could not be convinced to the contrary. She had no regret about the self-harm attempt and continued to express death wishes. She also had ideas of guilt of spreading COVID-19.

At time of admission, her Hamilton Depression Rating Scale score was 40 and Brief Psychiatric Rating Scale score was 88. A provisional diagnosis of Persistent Delusional Disorder with Secondary Depression was considered.

All her blood parameters were within normal limits. After hemodynamic stabilization, she was managed with Tab Escitalopram upto 15 mg/d and Tab Olanzapine upto 10 mg/d for 1 weeks, but there was no significant improvement in her psychopathology. She also remained uncooperative to the plastic surgery treatment. For the need of rapid response, electroconvulsive therapy (ECT) was planned. Since patient lacked the capacity to understand the consequences of her illness or the treatment planned, consent was obtained from her husband, who was deemed the nominated representative. Before proceeding for ECT, multidisciplinary consultations were made, electrolyte imbalance was corrected and hemodynamic stability was ensured. Inhalational burns and airway patency were thoroughly checked to prevent any difficulty in ventilation. Central line had to be secured as peripheral veins were not accessible. Atracurium was used as the muscle relaxant for anaesthesia instead of Succinylcholine to prevent hyperkalaemia. To isolate a limb to monitor seizure, BP cuff was placed over the left lower limb,

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Table 1
Case reports of psychotic psychopathology related to COVID-19 infection.

Author	ID	Psychopathology
(Fischer et al., 2020)	43 yrs, Male	Auditory hallucination blaming him for not taking sufficient care of his parents who could have died of a COVID-19. Delusion - immune to COVID-19 after already being infected by a Chinese message through a WhatsApp group
	34 yrs, Female	Delusion - God cursed them with COVID infection because they had failed to do the annual ritual Delusion - she had contracted COVID 19 infection and was spreading it to her infant ; Refusing to breastfeed for fear of spreading the infection to the infant. At presentation, she also had catatonic symptoms of mutism and staring
(Chandra et al., 2020)	24 yrs, Female	Delusions about her family being infected by coronavirus
	32 yrs, Female	Delusional conviction that a friend of hers had died from COVID-19
(Valdés-Flórido et al., 2020)	45 yrs, Male	Delusional conviction that the Illuminati were behind the pandemic ;hear his neighbors' voices- running commentaries on his own thoughts ; Attempted suicide because he believed he was going to be tortured
	73 yrs, Male	Delusion- he had been infected with SARS-CoV-2 by his wife and that he was the sole survivor in the world; Refusal of food and water
(D Agostino et al., 2021)	61 yrs, Male	Delusional belief of having contracted Covid-19
	55 yrs, Male	Delusional belief of being infected with SARS-CoV-2 Visual hallucinations of demons
(Smith et al., 2020)	36 yrs, Female	Believed her partner was attempting to kidnap her children and steal her COVID-19 stimulus money
(Huarcaya-Victoria et al., 2020)	38 yrs, Female	Auditory hallucination ordered her to go to a health center in order to be tested for COVID-19 and kill her family members
(Chacko et al., 2020)	52 yrs, Male	Delusions that he was the cause of the coronavirus pandemic; Suicide attempt by slitting his neck

which had the least burn. Also, care was taken to prevent overlap between the days she received ECT and on those the dressing was changed. Six modified bitemporal ECT sessions were administered over next 2 weeks with no complications. After 3 weeks of treatment, her HDRS and BPRS scores came down to 4 and 19 respectively. High risk management and continuation of medications were explained to family members at discharge. On follow up, patient was found to be asymptomatic, and back to her usual routine. She is adherent to treatment and no adverse reactions have been observed. Both her and her daughter's lesions from burns have healed with minimal scarring.

3. Discussion

Socio-cultural events have been shown to produce significant effect on development of psychopathology (Dohrenwend and Dohrenwend, 1974). COVID-19, being a novel stressor, has played a major role in the development and course of various mental illnesses. From around the world, various authors have reported scenarios where patient's symptoms were influenced or centred around the pandemic. Some reports of patients having brief or prolonged psychotic breakdowns following a diagnosis of COVID-19 have been published (Brown et al., 2020; Davide et al., 2020; Kozloff et al., 2020). Other authors have reported psychotic breakdown in patients who were not suffering from the infection, as in our patient. When all such reports published till-date were reviewed, it was found that COVID-19 related psychotic symptoms mainly followed

two major themes. One was the belief of being infected by the illness and the persistent inconsolable fear of spreading it to loved ones, while the other was certain magico-religious belief regarding the origin of the pandemic. Out of 11 such reported cases, 6 were in females, as was in our case (Table 1). Most of the patients did not have a past history of mental illness, which was unlike in our case. In 2 of these patients, suicidal attempts were present, one under the influence of commanding hallucinations and the other due to the guilt of spreading the infection to others, as was in our case. In our patient, the change in psychopathology of a previously existing psychotic illness in context of the Covid-19 pandemic throws light upon the patho-plastic effect of socio-cultural factors on the development of symptoms. This case also elucidates the use of ECT for the need for quick response despite the medically difficult scenario.

Accordingly, present case report highlights the fact, patients presenting with various neuropsychiatric symptoms (Banerjee and Viswanath, 2020; Dinakaran et al., 2020), especially onset of new set of symptoms, should be routinely be evaluated for the association of such symptoms with beliefs about COVID-19 and its spread.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given his/her consent for his/her clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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We have no financial disclosure to make.

Declaration of Competing Interest

The authors report no declarations of interest.

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