

## Virus in the Throat; Man on the Floor Syncopal Episodes in a Man with COVID-19

### ABSTRACT

Even though infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) presents primarily with respiratory symptoms, unusual clinical manifestations have also been reported during the current pandemic. In May 2020, a middle-aged man presented to us with three episodes of impaired consciousness, which clinically appeared to be syncopal episodes. The patient had history of a single episode of mild fever 6 days before presentation, not accompanied by any respiratory symptoms. As a routine, swab for SARS-CoV-2 was sent and he tested positive. Holter recording was able to record sinus bradycardia followed by junctional escape during one such episode. The patient was managed symptomatically, and there was no further recurrence of syncope.

**Key words:** Coronavirus disease 19, Syncope, Fainting episode

### INTRODUCTION

As we are gradually learning more and more about the novel corona virus, an extensive list of symptoms has emerged as the potential presentation of Coronavirus disease (COVID-19). Apart from well-known respiratory complaints, other system involvement is also well recognized. As far as neurological manifestations are concerned, fainting or syncopal episodes are rarely reported (Tape *et al.*) as the initial manifestation. Unexplained syncope may be the first manifestation of COVID-19.

### CASE REPORT

A 60-year-old gentleman presented to us in the 2<sup>nd</sup> week of May with three episodes of impaired consciousness over the past week. Each episode was in sitting position, unprovoked and was associated with loss of awareness with flaccidity of limbs. There was no urinary incontinence, frothing from mouth or tongue bite. There was no associated chest pain, breathlessness, palpitations, perspiration, or any tonic-clonic movements. Each episode lasted for about 8 to 10 s with immediate and complete recovery of consciousness without any residual confusion or postictal neurologic deficits. The patient had long standing hypertension and was taking losartan 50 mg daily since last few years. He denied any addiction or other major medical illness in the past. Patient did not have any recent significant travel history. He also refused any contact with COVID positive patients. Based on low level of suspicion as per the history, he was admitted in a non-COVID facility for further management.

Clinical examination was unyielding. All major laboratory parameters were within normal range. Twelve lead electrocardiograms showed normal sinus rhythm with normal P-R interval. His cardiac enzymes were within normal range.

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2-D Echocardiography showed no significant abnormality. On the day of admission, patient had another similar episode of transient loss of consciousness. Holter recording identified this as sinus bradycardia followed by junctional escape with pulse rate of 42/min. As a matter of routine screening, a nasopharyngeal swab was sent for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This tested positive. On further questioning, patient gave history of a single episode of mild fever 6 days before admission, for which he took a tablet of paracetamol and felt better. Patient's first episode of syncope was on the same day as his febrile episode. Patient was subsequently shifted to COVID intensive care unit (ICU) with continuous electrocardiographic monitoring. All inflammatory markers were sent out of which serum ferritin levels were elevated with C-reactive protein and D-dimer within normal range. (serum ferritin: 565 [on 12 May 20] and 290 [on 15 May 20]; normal range in males: 30–400 ng/mL) It was decided to treat patient, as and when required, with intravenous atropine in case of prolonged sinus pause and with isoprenaline for recurrent bradyarrhythmia. He was kept under observation

in the ICU for 4 more days, but no further clinical episodes of syncope were noted. He however, required atropine injection for asymptomatic bradycardia based on ICU cardiac monitoring. As per the existing local guidelines, his nasopharyngeal swab was repeated and was reported negative.

The patient was discharged, and he had no similar events after discharge. After 1 month, Holter monitoring was repeated. This did not reveal any significant abnormality.

## DISCUSSION

SARS-CoV-2 is a novel coronavirus, which was first reported in Wuhan, Hubei province, China in December 2019.<sup>[1]</sup> The virus has spread all across the world and has led to a major global pandemic. A significant mortality has been reported and the numbers keep increasing day after day. Since the first case, a lot of diversity has been reported among presenting complaints of COVID-19. Singhanian *et al.*<sup>[2]</sup> described syncope followed by altered mental status as an atypical manifestation of COVID-19 in their study. However, our patient did not have any altered sensorium. Another study from Turin, Italy showed a series of five cases describing syncope as the only presenting feature without the presence of classical symptoms such as fever and cough.<sup>[3]</sup> However in this case series, all five patients had either permanent pacemaker or implantable cardioverter-defibrillator, after interrogation of which rhythm disturbances were ruled out. In our patient, we found a sinus pause causing syncope. This may have been due to selective involvement of sinus pacemaker by the viral infection or the released cytokines. There are reports in literature suggesting persistent conduction disturbance due to SA nodal involvement, throughout patient's course of Covid-19 infection.<sup>4</sup> We could not document persistent arrhythmia as holter was prematurely removed within initial few hours before shifting patient in Covid ICU (due to hospital protocol for resource allotment, planned seven days holter recording could not be completed). Tape *et al.* also described syncope as presenting symptom in a COVID positive patient with a normal chest x-ray, although she had lymphopenia and fever spike during hospital stay which were not seen in our patient.<sup>[5]</sup> Cardiac arrhythmias as complications of influenza infection have been reported previously, acute atrioventricular conduction blocks being most seen.<sup>[6,7]</sup>

Syncope is a common presentation in the emergency department with a wide range of differential diagnoses.<sup>[8]</sup> Precise pathophysiology of syncope in patients with COVID-19 has not yet been established but as in the case of other influenza viruses, it may be related to: (a) Virus directly affecting myocardial tissue or conduction system (b) inflammatory response against virus leading to cytokine storm that disturbs myocardial electrical stability.<sup>[9,10]</sup> Although further research with larger data is required for determining exact mechanism of syncope in COVID-19,

keeping this possibility as the first manifestation of the disease could help in early diagnosis. While the Covid pandemic is going on, it does make sense screening all admissions for the virus. This would help us in understanding how the virus affects different organ systems and in recognizing unusual symptoms.

## CONCLUSION

We report a case of COVID positive patient presenting with syncope which may be considered as an atypical manifestation of this viral illness. This would also help in early diagnosis, implementation of timely isolation measures and thereby preventing further transmission. We consider temporal evolution of syncopal episodes with COVID positive swab report in our patient as suggestive of strong causative association.

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