

A Rare Occurrence of Postural Hypotension in a COVID-19 Patient

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ABSTRACT

The SARS-CoV-2 infection has presented itself with typical presentations like other viral infections and atypical presentations as well. Many of the clinical associations are established and still, researches are ongoing. It is still an evolving disease and is an area of research at present time. We present a rare case of postural hypotension in a 49-years-old COVID-19 patient.

We admitted a 49-year-old diabetic male patient with a history of acute onset of shortness of breath, cough and fever. The patient was diagnosed case of a COVID-19 infection and was admitted with mild to moderate symptoms. The patient maintained his normal saturation on oxygen. The patient developed an unusual symptom of postural hypotension during his hospital stay and it was managed with a conservative approach. The development of postural hypotension in a COVID-19 patient is reported very rarely. Given the fact that postural hypotension is an important and specific disease entity, this association presents an active area of research in the present era.

Keywords: Postural hypotension, COVID-19, pneumonia, syncope.

INTRODUCTION

The coronavirus was identified in Wuhan, China in December 2019. It was named SARS COV II (severe respiratory distress syndrome Coronavirus 2) and then named COVID -19 (coronavirus disease 2019) by the World Health Organization (WHO) on 11th February 2020 [1, 2]. Then it was declared a pandemic by WHO on 11th March 2020 [3].

The main clinical manifestations of SAR-CoV-2 range from mild asymptomatic disease to life-threatening complications. Initially, the patient presents with cough, fever, dyspnea, and fatigue. Other less common complaints may include diarrhea, headache, and the production of sputum. The disease can progress to cause pneumonia, and acute respiratory distress syndrome with leucopenia, lymphocytopenia or thrombocytopenia [4]. An atypical symptom like postural hypotension or syncope is not mentioned widely in the literature as a symptom of COVID-19. Only a few case reports presented the findings of postural hypotension in association with COVID-19 infection [5-8].

CASE PRESENTATION

A 49-year-old Bangladeshi male with a history of type 2 Diabetes mellitus presented to the Emergency Department (ED) with cough, shortness of breath, and fever for the last 12 days. He had a positive swab for COVID-19 6 days before his ED presentation. His chest X-ray revealed bilateral infiltrations (**Fig. 1**). He was admitted as a case of viral pneumonia (based on radiological and clinical assessment) due to COVID-19 and started on the treatment regimen advised by the

ministry of health following the universal guidelines for the management of COVID-19. His oxygen requirement never exceeded more than 3-4L by nasal cannula. The patient had a history of tinnitus in his right ear and it improved with a short course of betahistine.

He had a smooth, uneventful hospital course with progressive improvement with persistent loss of appetite. After a week in the hospital, the patient started complaining of lightheadedness every time he would go to the washroom. It was associated with momentarily blurred vision. There were no associated symptoms like nausea, vomiting, palpitations, vertigo or loss of consciousness.

The general physical examination of the patient was unremarkable. His neurological examination revealed horizontal nystagmus which was not persistent. There were no cerebellar signs. The systemic examination of the patient was unremarkable.

On the sixth day of admission, the patient developed postural giddiness. It progressively increased in intensity. His initial blood pressure monitoring revealed readings as 128/80 (lying), 106/64 (sitting), and 100/64 (standing). We found persistent postural hypotension in his subsequent reading and the patient remained symptomatic. The patient's cardiac, endocrine evaluation, otorhinological and ophthalmology evaluation were normal. The alternative causes like autonomic neuropathy were ruled out clinically. The patient was observed clinically. Postural hypotension tachycardia syndrome (POTS) was ruled out by a standing test for 10 minutes as a tilt table test was not available, which is a gold standard test for POTS. The patient showed resolution of symptoms over a period of one week (**Fig. 2**). At the time of discharge, his blood pressure readings were 108/64 (supine) and 102/68 (standing).

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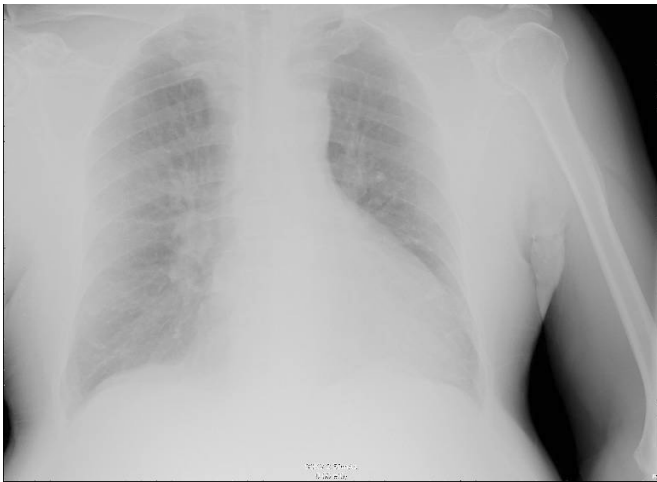


Fig. (1): Chest X-ray of 49 years old male patient.

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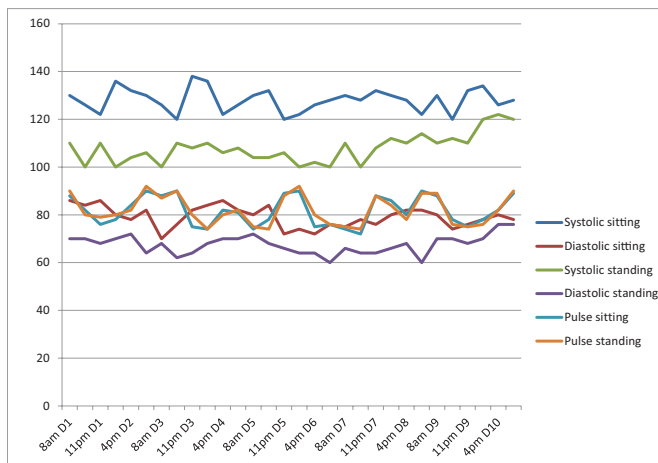


Fig. (2): Chart of systolic and diastolic blood pressure during sitting and standing positions.

DISCUSSION

We describe a 49-year-old male with a chronic history of diabetes mellitus who developed orthostatic hypotension during his hospitalization with COVID-19. His presenting symptoms were typical (fever, shortness of breath, and cough), he had bilateral lower lobe infiltrates on chest x-ray, and his COVID-19 swab was positive. This patient did not receive any antihypertensive medications and his disease presentation and course were mild to moderate.

In the literature, it has been reported that there were atypical presenting symptoms of COVID-19; one author reported a 79-year-old female presenting with syncope and normal chest x-ray, the patient had developed myalgia, cough, and fevers 3 days prior to her presentation. She had a blood pressure of 116/62 mmHg in the supine position and 85/50 mmHg in the standing position. She was diagnosed with a COVID-19 infection and a CT scan chest revealed ground-glass infiltrations [5]. In contrast to our patient who was not

having any cardiac morbidity previously this lady had a history of ischemic heart disease with multiple stents and hypertension. The authors mention in the case report that previous cardiac problems in elderly people may cause syncope with COVID-19 infection which is not matching with our case.

In another report which was done in the United States; the investigators noted that syncope, near syncope, or a non-mechanical fall was the main reason of 24% of their patients presented to the ED (in a sample size of 102 COVID-19 patients). Among these half of the syncope, attacks remain with undetermined cause [6]. The syncope may be due to cardiogenic or neurogenic origin. In COVID-19 the cause may be multifactorial and the exact cause is not known. It is hypothesized that cardiovascular diseases are accompanied by dysregulation of angiotensin-converting enzyme 2, and COVID-19 uses the same enzyme to initiate infection [6]. The author suggested that due to unusual presentations like syncope the diagnosis of COVID-19 may be delayed which may cause a spread of infection; therefore, with any syncope, COVID-19 infection should be in the list of differential diagnoses [6].

A different case report published in the American journal of medicine, described a 71-year-old female presenting to the emergency department with a complaint of syncope. She didn't exhibit any of the other typical complaints of COVID-19 at her initial presentation. She was labeled as orthostatic hypotension after ruling out CNS causes with an unremarkable brain CT and was sent home after managing her conservatively. The same patient came back to the ED 3 days later with altered mental status; after further investigation, her chest CT chest showed bilateral ground-glass densities. Her COVID-19 polymerase chain reaction (PCR) was found positive [7]. Therefore the orthostatic hypotension was mentioned as an early atypical presentation of COVID-19 infection.

Acute dysautonomia has been reported with many viral infections so has been reported with COVID-19 infection. They reported a case of a 72-year-old man with a history of diabetes mellitus, hypertension, chronic obstructive pulmonary disease and coronary heart disease. He was presented with fever and shortness of breath and admitted to ICU. During his hospital stay, his blood pressure was labile and there was a postural drop [8]. However, the mechanism of hypotension in COVID-19 infection is not conclusively elucidated. The author explained it as dysautonomia related to viral infection. This patient was also having pre-existing medical conditions in contrast to our patient who just had diabetes.

Our patient was largely bedridden in the initial 5 days. The development of postural hypotension due to a bed-ridden state was ruled out due to the fact that it conclusively develops after a prolonged bed rest of nearly 5 weeks [9, 10].

These reports along with our findings alert us to an important symptom. COVID-19 can present with symptomatic orthostatic hypotension or else the patient can develop it during the disease course. This important association needs further elucidation and characterization given the pandemic of COVID-19 and its presentation with varied atypical presentations.

CONCLUSION

As mentioned earlier postural hypotension with COVID-19 infection is not documented widely. Given the fact that postural hypotension is an important and specific disease entity, patients with attacks of syncope should be investigated for COVID-19 infection to prevent the spread of disease by early detection. This report opens the doors for researchers to include this finding in the clinical manifestation of COVID-19 infection.

CONSENT FOR PUBLICATION

Written Informed consent was taken from the patient.

CONFLICT OF INTEREST

We declare here that there was no conflict of interest.

ACKNOWLEDGEMENTS

Declared none.

AUTHORS' CONTRIBUTIONS

The first author raised the concern about the association of postural hypotension in the patient and initiated to search literature. The third author started to search the literature and brought in a meeting. The second author started to write an introduction. The case report was written by the second and third author and finalized by the first author.

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