

# Hiccups and hyponatremia: Unusual co-presentation in COVID-19

**Samarth Sangamesh, Siddharth Gosavi, Shashank Shastry, Sandra M. Johny**

*Department of General Medicine, JJM Medical College, Davanagere, Karnataka, India*

### ABSTRACT

Coronavirus disease (COVID-19) is the newly discovered infectious disease, affecting millions worldwide. Majority of the patients present with mild respiratory syndrome. Some neurological symptoms are reported like anosmia & dysgeusia. We are presenting a case with hiccups as an unusual symptom. An elderly male patient presented to Bapuji teaching hospital attached to JJM medical college, Davanagere on 24th July 2020 with intractable hiccups in the last 5 days. There were no other symptoms. Patient's saturation was initially 98% at room air which then dropped to 90%. Based on clinical knowhow, SARS-Cov-2 RNA qualitative RT-PCR test was sent, and the results came positive. Patient improved symptomatically in 2 days and was kept in ward for observation for a total of 7 days. This extremely rare case report brings to light new atypical symptom of COVID-19 are being presented every other day, which shows how the importance being aware of the same.

**Keywords:** COVID-19, Hiccups, Hyponatremia

### Introduction

Coronavirus disease (COVID-19) is the newly discovered infectious disease, affecting millions worldwide.<sup>[1]</sup>

The majority of the patients presents with mild to moderate respiratory illness and recover without any special treatment. Old people and people with underlying diseases such as diabetes, cardiovascular diseases, cancer, and treatment with immunosuppressants are more prone to develop a serious form of the disease. The virus is mainly transmitted through droplets or discharge from an infected person while they sneeze or cough, which gets suspended in the air and settles down on surfaces, giving way to fomite transmission. Patients usually

present with the most common symptoms as dry cough, fever, and fatigue.<sup>[2]</sup>

Unusually some neurological atypical symptoms reported are anosmia, headache, dysgeusia, ataxia, and rarely convulsions.<sup>[3]</sup>

During this pandemic, a thorough knowledge of the wide spectrum of presentations of COVID-19 is necessary for early detection, prompt treatment, and quarantine. Here, our study is addressing a case presented to our hospital with an unusual symptom.

### Case

A case study was done after obtaining ethical clearance from the institutional ethics committee and after obtaining informed written and oral consent from the patient.

A 72-year-old male patient presented to Bapuji teaching hospital attached to JJM medical college, Davanagere on July 24, 2020

**Address for correspondence:** Dr. Siddharth Gosavi,  
Department of General Medicine, JJM Medical College, Davanagere,  
Karnataka - 577 004, India.  
E-mail: ramshyamsid@gmail.com

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with hiccups in the last 5 days. There was no history of fever, cough, breathlessness, loose stools, burning micturition, chest pain or headache.

The patient was apparently normal 5 days back after which he developed intractable hiccups, insidious in onset, which failed to subside with home remedies. The patient got prolonged episodes every 3 hours which caused discomfort. Hiccups did not affect sleep or appetite. The patient is a known case of hypertension well controlled on 5 mg Amlodipine OD. The patient is not a known case of diabetes mellitus, bronchial asthma, tuberculosis, epilepsy, ischemic heart disease, or chronic kidney disease.

On general physical examination (GPE):

The patient was febrile at the time of examination

BP: 140/90 mmHg

PR: 92 bpm

SPO<sub>2</sub>: 92% @ room air

Temperature: 100° F

No signs of pallor icterus clubbing cyanosis lymphadenopathy or edema.

Head to toe examination appears to be normal.

On systemic examination:

RS: B/L crepitations +

B/L air entry equal

CVS: S1S2 heard, no murmurs

P/A: soft, non-tender, no organomegaly

CNS: clinically normal

## Management

The patient was then admitted to the isolation ward of Bapuji Hospital.

The working diagnosis was K/C/O hypertension with severe acute respiratory illness under evaluation with newly diagnosed type II Diabetes Mellitus with Hyponatremia.

Based on clinical know-how, SARS-Cov-2 RNA qualitative RT-PCR test was sent on July 24, 2020 and the results came positive for RNA specific to SARS-Cov-2.

The patient was treated with IV fluids, IV and oral antibiotics, IV Proton pump inhibitors, antipyretics, montelukast with levocetirizine, acetylcysteine with n-acetylcysteine, IV steroids, oral antivirals –oseltamivir and favipiravir, oral zinc supplementation, oral vitamin C, Tablet Baclofen and vitamin D supplementation, short-acting insulin and oxygen supplementation.

The patient improved symptomatically in 2 days and was discharged after 7 days of hospital stay with a COVID-19 negative report.

## Investigations

July 24, 2020: Ferritin –1189 ng/ml

July 24, 2020: CBC: HB –16.4gm/dl, RBC –5.3 million/cumm, TC –7540 cells/cumm, PLT –2.60 lakhs/cumm, PCV –49.3%, MCV –92.7fl, MCH –30.8 pg, MCHC –33.3 gm/dl

Dengue NS1 antigen: negative

CRP: 28.8 mg/l

LDH: 644 µ/l

LFT: Total bilirubin – 1.3 mg/dl, Direct bilirubin – 0.4 mg/dl, Indirect bilirubin – 0.9 mg/dl,

Total protein: 6.4 gm/dl, Albumin –3.3 gm/dl, Globulin –3.1 gm/dl, SGOT –71 µ/l, SGPT –34 µ/l, ALP –89 µ/l,

Renal Function test: UREA –30 mg/dl, Serum Creatinine –0.9

Coagulation Profile: PT TEST –13.6 seconds, PT CONTROL –11.6 seconds, INR –1.2, APTT CONTROL –28 seconds, APTT TEST –27 seconds

Serum Electrolytes: Na –128 mmol/L, K –3.7 mmol/L, Cl –85 mmol/L.

HbA1c –8%

CXR PA: Bilateral lower lobe infiltrates

## Discussion

In our case, persistent hiccup was the only presenting symptom. On investigating further, patient had hyponatremia and was also newly detected with type II Diabetes Mellitus.

Patient's saturation was initially 98% at room air. The symptoms did not reduce after a few days and the patient's saturation dropped 90% at room air. Following the treatment, the patient improved symptomatically in 2 days and was kept in ward for observation for a total of 7 days. No ICU admission was needed.

Garrett Prince and Michelle Sergel published the first such case report, to the best of our knowledge, in the American Journal of Emergency Medicine in April 2020.<sup>[4]</sup>

Mohamed Zahran also published a case report with similar findings in June 2020.<sup>[5]</sup>

Best we know, this is the third case report of this kind.

In a study by Giancarlo *et al.*, SARS-CoV 2 virus shows selective neurotropism to the areas of the brain controlling respiration. Such mechanisms may also contribute to severe respiratory disease.<sup>[6]</sup>

This area also happens to be the area controlling the reflex arc for hiccups [Figure 1]<sup>[7]</sup>.

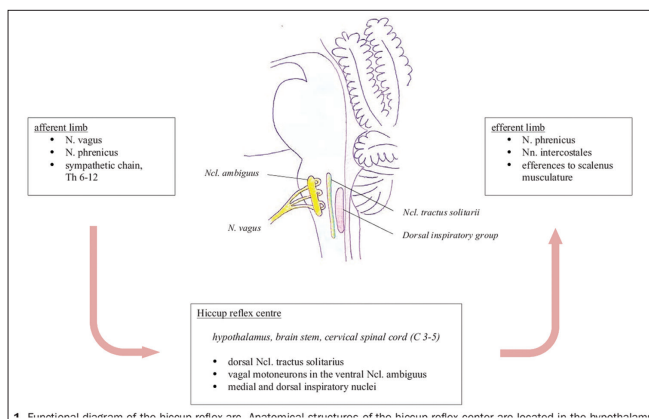
Irritation of this neural network can be a possible mechanism for developing hiccups

Another possible mechanism maybe electrolyte imbalance caused by COVID.

Studies by Bernie *et al.*<sup>[8]</sup> and Habib *et al.*<sup>[9]</sup> have shown COVID to be associated with hyponatremia. A study by JS Jones *et al.*<sup>[10]</sup> has shown that hyponatremia can present rarely as hiccups. This could also be a possible mechanism for the hiccups.

COVID-19 can have various presentations; of them, one symptom is hiccup. Hiccup is a symptom, which can aid the physician especially in the fight against the COVID-19 pandemic.

Primary care physicians are now on the front line for receiving COVID patients. As patients have to be screened effectively, a thorough knowledge of the common and uncommon clinical



**Figure 1:** Diagram of the hiccup reflex

symptoms of COVID-19 is necessary for early diagnosis and prompt treatment.

## Conclusion

This case report brings to light that the symptoms of coronavirus have not been studied to the full extent and that, new atypical symptoms such as hiccups are being presented every other day, which shows how the importance of taking proper history and keeping an open mind to various differential diagnosis. The limitation of this case report is this has been a symptom in one patient. More patients need to present with hiccups to confirm its definitive value in COVID-19 detection.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other 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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## Conflicts of interest

There are no conflicts of interest.

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