Case Report

Research on Bioengineering and Biomedical science

Volume 1 | Issue 1

A Typical Initial Presentation of Covid 19 as Ischemic CVA and Renal Failure

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Submitted: 10 Mar 2022 **Accepted:** 18 Mar 2022 **Published:** 19 Mar 2022

Citation: *Farah HASHIM JABER BILAL, AKIL WALLI, Georges CHALOUHI, Sarah EL MUSTAPHA, Melissa KATRIB. (2022). A Typical Initial Presentation of Covid 19 as Ischemic CVA and Renal Failure. Research on Bioengineering and Biomedical science. Vol: 1 | Issue: 1 | Pg: 01-03.*

1. Background

The incubation period for COVID-19 is generally within 14 days following exposure, with most cases occurring approximately four to five days after exposure. In a study of 1099 patients with confirmed symptomatic COVID-19, the median incubation period was four days (interquartile range two to seven days). Using data from 181 confirmed cases in China with identifiable exposure, one modeling study estimated that symptoms would develop in 2.5 percent of infected individuals within 2.2 days and in 97.5 percent of infected individuals within 11.5 days. The median incubation period in this study was 5.1 days.

However, determinations of the incubation period can be imprecise and may differ by the method of assessing exposure and the specific calculations used for the estimate. Another study estimated incubation period using data from 1084 patients who had traveled or resided in Wuhan and were subsequently diagnosed with COVID-19 after leaving Wuhan. This study suggested a longer median incubation period of 7.8 days, with 5 to 10 percent of individuals developing symptoms 14 days or more after exposure.

Among patients with symptomatic COVID-19, cough, myalgias, and headache are the most commonly reported symptoms. Other features, including diarrhea, sore throat, and smell or taste abnormalities, are also well described. Pneumonia is the most frequent serious manifestation of infection, characterized primarily by fever, cough, dyspnea, and bilateral infiltrates on chest imaging. Although some clinical features (in particular smell or taste disorders) are more common with COVID-19 than with other viral respiratory infections, there are no specific symptoms or signs that can reliably distinguish COVID 19. However, development of dyspnea approximately one week after the onset of initial symptoms may be suggestive of COVID-19.

The range of associated symptoms was illustrated in a report of over 370,000 confirmed COVID-19 cases with known symptom status reported to the CDC in the United States:

- Cough in 50 percent
- Fever (subjective or >100.4°F/38°C) in 43 percent
- Myalgia in 36 percent
- Headache in 34 percent
- Dyspnea in 29 percent
- Sore throat in 20 percent
- Diarrhea in 19 percent
- Nausea/vomiting in 12 percent
- Loss of smell or taste, abdominal pain, and rhinorrhea in fewer than 10 percent each

Case Presentation

On 7th February 2021, a forty two year-old previously healthy lady, non-smoker, presented to our hospital for desaturation, fever and altered general status. Her past surgical history includes only C-section. Upon presentation, pulmonary auscultation revealed left basal crackles. Otherwise no significant findings.

In emergency department, pan cultures were taken and blood was drowned for usual lab tests and covid-19 panel, which showed lymphopenia (3%) and an acute inflammatory process (CRP 186.7, procalcitonin level 19) with elevated D-Dimer (18.4), ferritin (661) fibrinogen (7.72) and LDH (935) levels in favor of covid-19 infection. Surprisingly, she was found to have acute kidney injury with creatinine level of 20.4, severe hypocalcemia (ca level 5) and hyperphosphatemia (11). On ABG's she had severe metabolic acidosis (PH 7.1, bicarb 6.4) with respiratory compensation (CO_2 17.2). Further investigations included PCR covid-19 which turned to be positive, and CT chest without contrast that revealed bilateral upper, middle and lower lobes ground glass opacities affecting around 50% of lung parenchyma, findings typical of covid-19, with left lower lobe consolidation (fig.1).

Patient was admitted to ICU for close monitoring and was put on nasal cannula 2-3 L/min. SPo_2 did not drop less than 98%. She was started on antibiotherapy including Ceftriaxone and macrolides for super bacterial infection, on therapeutic anticoagulation for hypercoagulable state, and steroids, given her high oxygen requirements. In addition, Kimal was inserted in order to start hemodialysis.

On the second day, patient developed one episode of tonic-clon-

ic seizure for which she was started on benzodiazepine (depakine). No further investigations were done since it was her first episode that could be related to uremic encephalopathy.

Repeated labs on the upcoming days were significant for further increase in ferritin and D-dimer that reached 1770 and 20 respectively. However, creatinine, BUN and phosphorus were decreasing progressively after dialysis sessions to reach a level of 6.5, 61.8 and 6.2 respectively. Unfortunately, patient continued to deteriorate clinically; she was not cooperative at all and hemodynamically unstable that she was put on norepinephrine. On day 6 of admission, her physical exam revealed hemiplegia mainly at the left upper limb. For that reason, an MRI and an EEG were ordered in addition to metabolic workup: ammonia level, TSH, vit B12, folic acid. Hyperintense lesions in the right parietal lobe were found on MRI in favor of ischemic CVA (fig. 2,3). Moreover, EEG showed focal subclinical epileptic seizures. Therefore, other antiepileptics (epanutin and Keppra) were added. In contrast, all metabolic work up was normal.

On a side note, patient was always complaining of persistent shoulder and back pain so the differential of multiple myeloma was made regarding her high creatinine level, but serum protein electrophoresis was negative for M protein, and shoulder x-ray didn't show any lytic lesions however she was found to have left displaced shoulder fracture that was treated conservatively. On twenty second of February_ day 16 of admission_ patient started to ameliorate clinically, oxygen delivery was tapered and PO intake was initiated. Inflammatory markers became negative and lymphopenia has resolved (23%). Consequently, she was transferred to regular floor and was discharged later home with AV fistula for chronic hemodialysis. She had shoulder joint replacement surgery later on.

Conclusions:

CVA and renal failure may be a possible initial presentation of COVID-19. Clinicians and health care providers should consider the presence of COVID-19 with bizarre manifestation during this COVID-19 pandemic.

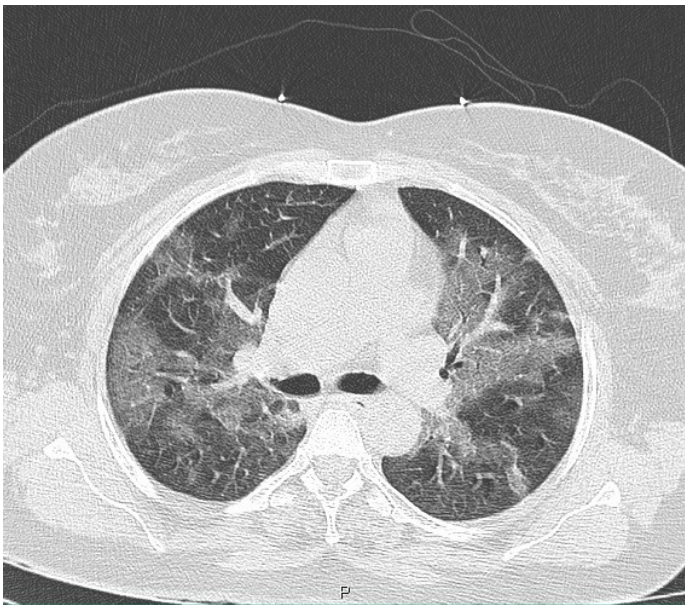

Figure 1: Chest CT

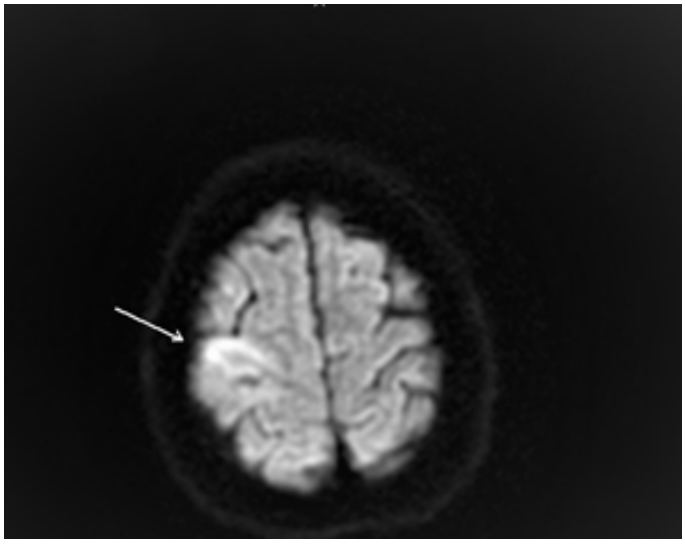

Figure 2: Brain MRI Axial View

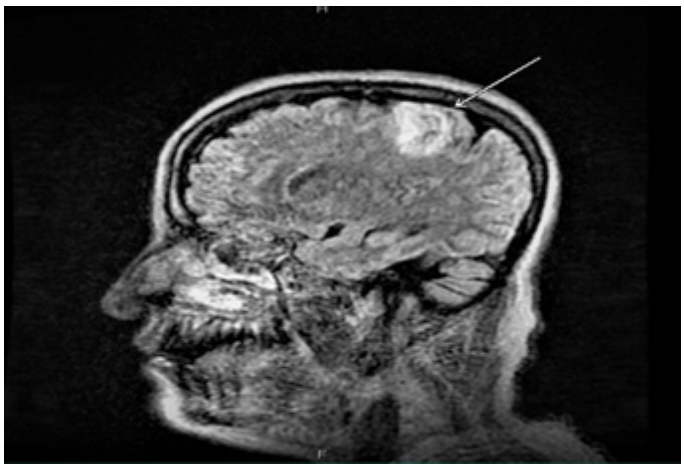

Figure 3: Brain MRI Sagittal View

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