

Severe COVID-19 Pneumonia in Parkinson's Disease with Mental Retardation and Wavy Triple Sign (Yasser's Sign)-Bad Association with Good Outcome

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Abstract

Rationale: Parkinson's disease is a degenerative neurological disorder accompanied by motor symptoms such as slow movement, tremors, rigidity, and imbalance. PD may be complicated by cognitive impairment, mental disorders, sleep disorders, pain, and sensory disturbances. Despite the quickly swept of COVID-19 across the globe, several studies have a lack of scientific accuracy in the Parkinson's disease literature that is not immune in origin. Some symptoms of parkinsonism have been reported following COVID-19. The Wavy triple electrocardiographic sign (Yasser's sign) is an innovative diagnostic sign in hypocalcemia.

Patient Concerns: A 35-year-old single, mentally retarded, Egyptian, a female patient was presented to the physician outpatient clinic (POC) with pneumonia and Parkinson's disease.

Diagnosis: Severe COVID-19 pneumonia in Parkinson's disease with mental retardation and Wavy triple sign (Yasser's sign).

Interventions: Electrocardiography, chest CT scan, oxygenation, and arterial blood gas.

Outcomes: Electrocardiographic, radiographic, and clinical stabilization was the result.

Lessons: The association of COVID-19 pneumonia in Parkinson's disease with mental retardation and the Wavy triple sign (Yasser's sign) is interesting and stupendous. The constellation of hypotension, ECG sinus tachycardia, hypoxia, Wavy triple sign (Yasser's sign) of hypocalcemia, elevated creatinine, elevated urea, elevated liver enzymes, and marked elevated d-dimer in the presence of severe bilateral COVID-19 pneumonia may carry a poor prognostic outcome and is indicating a high-risk condition.

Keywords: Pneumonia, Parkinson's disease, COVID-19 Pandemic, Wavy triple electrocardiographic sign, Yasser's sign, Hypocalcemia

Abbreviations

| | |
|----------------|---|
| COVID-19 | : Coronavirus disease 2019 |
| ECG | : Electrocardiogram |
| ED | : Emergency department |
| ICU | : Intensive care unit |
| O ₂ | : Oxygen |
| POC | : Physician outpatient clinic |
| PD | : Parkinson's disease |
| SGOT | : Serum glutamic-oxaloacetic transaminase |
| SGPT | : Serum glutamic-pyruvic transaminase |
| VR | : Ventricular rate |

Introduction

Parkinson's disease (PD) is a degenerative neurological disorder accompanied by motor symptoms such as slow movement, tremors, rigidity, and imbalance. PD may be complicated by cognitive impairment, mental disorders, sleep disorders, pain, and sensory disturbances (World Health Organization [WHO], 2022). Unfortunately, the relevant studies on the relationship between severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and PD have revealed inconsistent results (Fearon & Fasano, 2021). However, there is evidence for direct and indirect effects of SARS-CoV-2 on motor and non-motor manifestations of PD (Fearon & Fasano, 2021). Indeed, there are reported three cases of Parkinson's-

like symptoms post a SARS-CoV-2 infection. Despite there were no detected associated risk factors (Drake, 2021). World Health Organization (WHO) reported that the prevalence of PD had twofold in the previous 25 years. Regrettably, the global estimates in 2019 showed more than 8.5 million PD patients. Also, in 2019, estimates 5.8 million disability-adjusted life years post-PD. These results increased to 81% since 2000 causing 329 000 deaths and over 100% since 2000 (World Health Organization [WHO], 2022). Despite the quickly swept of COVID-19 across the globe, several studies have a lack of scientific accuracy in the PD literature that is not immune (Fearon & Fasano, 2021). Globally, disability and death due to PD are increasing faster than for any other neurological disorder. Several PD patients ideally present COVID-19 symptoms. But some patients may present with atypical isolated worsening of parkinsonian symptoms that indicates increasing anti-PD medication rather than worse outcomes (Fearon & Fasano, 2021). Clinical diagnosis of PD and using simple treatment guidelines usually get better management in primary care settings (World Health Organization [WHO], 2022). In November 2020, the Lancet Neurology reported that as many as 65% of COVID-19 cases present with hyposmia, which is a more common premotor symptom in PD. This symptom has been reported to draw the attention of the medical community to the hypothetical link between SARS-CoV-2 infection and PD (Merello et al., 2021). Levodopa/carbidopa is the most effective medication for improving symptoms, functioning, and quality of life. However, it is not accessible, available, or affordable, especially in low-income and middle-income countries. Rehabilitation can improve the functioning and quality of life of people with PD (Fearon & Fasano, 2021). Advanced PD cases seem to be more vulnerable (Fearon & Fasano, 2021). A single case of the acute hypokinetic-rigid syndrome has been reported but there is no persuasive data have been revealed (Fearon & Fasano, 2021). Mortality data in COVID-19 with PD cases are indecisive (ranging from 5.2% to 100%) (Fearon & Fasano, 2021).

Wavy triple an electrocardiographic sign (Yasser's Sign) is a recently innovative diagnostic sign in hypocalcemia (Elsayed, 2019; Elsayed, 2020).

The analysis for this sign in the author's interpretations is based on the following;

1. Different successive three beats in the same lead are affected.
2. All ECG leads can be implicated.
3. An associated elevated beat is seen with the first of the successive three beats, a depressing beat with the second beat, and an isoelectric ST-segment in the third one.
4. The elevated beat is either accompanied by ST-segment elevation or just an elevated beat above the isoelectric line.
5. Also, the depressed beat is either associated with ST-segment depression or just a depressing beat below the isoelectric line.
6. The configuration for depressions, elevations, and isoelectricities of the ST segment for the subsequent three beats are variable from case to case. So, this arrangement is non-conditional.

7. Mostly, there is no participation among the involved leads. The author intended that is not conditionally included in the special coronary artery for the affected leads (Elsayed, 2019).

Aim of this Study

In this manuscript, I reported a case of severe COVID-19 pneumonia in Parkinson's disease with mental retardation and the Wavy triple sign (Yasser's sign) in a young-aged female patient.

Case Presentations

A 35-year-old single, mentally retarded, Egyptian, a female patient was presented to the physician outpatient clinic (POC) with fever, tachypnea, cough, and palpitations. Generalized body aches, anorexia, and fatigue were the associated symptoms. There is a history of direct contact with confirmed COVID-19 cases. The family gave a history of Parkinson's disease 15 years ago and mental retardation since birth. Upon general physical examination; generally, the patient seems to speak softly, and quickly, masking her face, pill-rolling tremors, and slowing her movements. GCS was 15 with a weak response to the physician's orders. A regular rapid heart rate of 130 bpm, blood pressure of 90/70 mmHg, respiratory rate of 28 bpm, a temperature of 39.5 °C, and pulse oximeter of O₂ saturation of 88% were reported. No more relevant clinical data were noted during the clinical examination. Urgent initial ECG tracing was done on the presentation in the POC showing sinus tachycardia (VR; 130) and down-sloping ST-segments depressions in I, II, aVL, and aVF, V1, and V2 leads. There is a Wavy triple sign (Yasser's sign) of hypocalcemia in V1 and V6 leads (Figure 1). The family quietly refused the hospital referral and intensive care unit (ICU) admission. The patient was treated with at-home O₂ inhalation (100%, by nasal cannula, 5L/min) by oxygen cylinder, cefotaxime; (1 gm IV TID), IV of ampicillin with sulbactam vial (1.5 gm, TDS), and paracetamol (500 mg TID as needed). SC enoxaparin 80 mg twice daily), aspirin tablet (75 mg, once daily), clopidogrel tablet (75 mg, once daily), and hydrocortisone sodium succinate (100 mg IV every 12 hours) were added. IV normal saline 0.9% 500 ml and IV Ringer solution were given. Cold compresses were advised before using paracetamol IV infusion. One calcium gluconate ampoule (10 ml 10% over IV over 10 minutes) was given as an emergency dose. Oral calcium and vitamin-D preparation were prescribed for two weeks. The initial complete blood count (CBC); Hb was 10.9 g/dl, RBCs; 3.89*10³/mm³, WBCs; 18*10³/mm³ (Neutrophils; 91.2 %, Lymphocytes: 5.6%, Monocytes; 2.2%, Eosinophils; 1% and Basophils 0%), Platelets; 166*10³/mm³. S. Ferritin was high; 625 ng/ml. D-dimer was very high (3011 ng/ml). CRP was high (104 g/dl). LDH was high (717 U/L). SGPT was high (61 U/L), SGOT was high (88 U/L). Serum creatinine was high (1.6 mg/dl) and blood urea was high (59 mg/dl). RBS was normal (189 mg/dl). Ionized calcium was low (0.65 mmol/L). The troponin test was negative. ABG showed respiratory alkalosis. Plain CXR film showed bilateral ground glass opacities and cardiomegaly (Figure 2A). Chest CT without contrast showed severe bilateral ground glass fluffy opacities (Figure 2B). Serial

workup and chest CT without contrast were done through about 4 weeks of management till nearly complete normalization. Severe COVID-19 pneumonia in Parkinson's disease with mental retardation and Wavy triple sign (Yasser's sign) was the most probable current diagnosis. The patient continued on the above treatment for about 4 weeks with time-dose modifications such as hydrocortisone sodium succinate vial as needed. The patient was advised for future cardiovascular, pulmonary, neurological, and infectious follow-up.

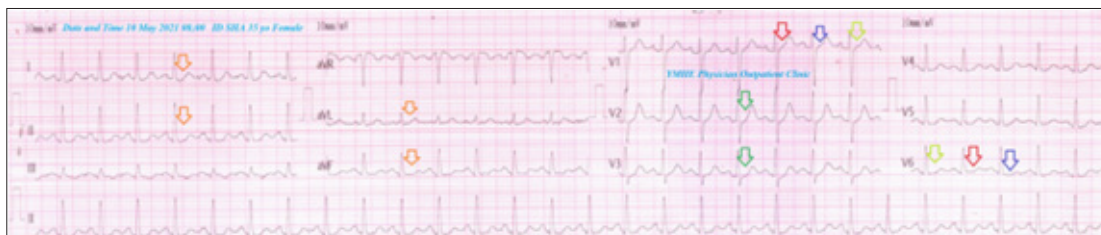


Figure 1 A: An initial ECG tracing was done on the presentation in the POC showing sinus tachycardia (VR;130) and down-sloping ST-segments depressions in I, II, aVL, and aVF, V1, and V2 leads (orange and green arrows). There is a Wavy triple sign (Yasser's sign) of hypocalcemia in V1 and V6 leads.(lime, red, and dark blue arrows).

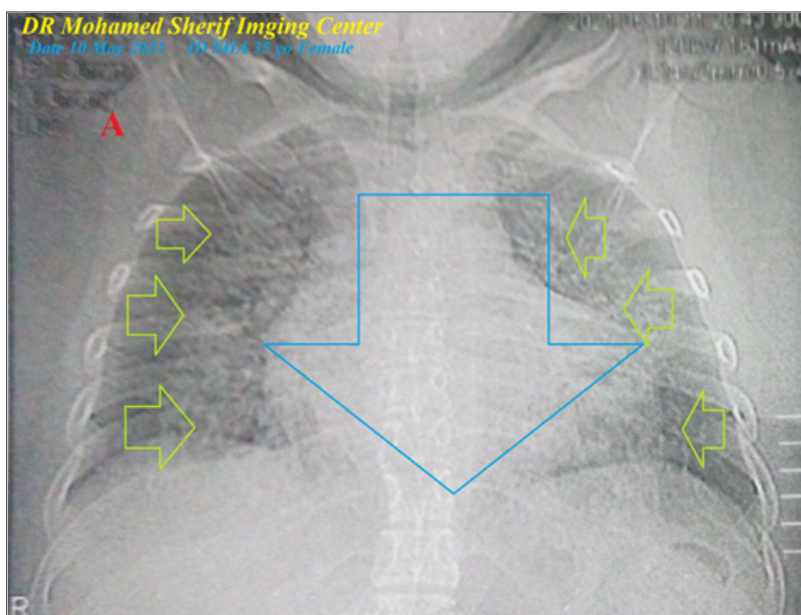


Figure 2 A: Plain CXR film showing bilateral ground glass opacities (lime arrows) and cardiomegaly (blue arrow).

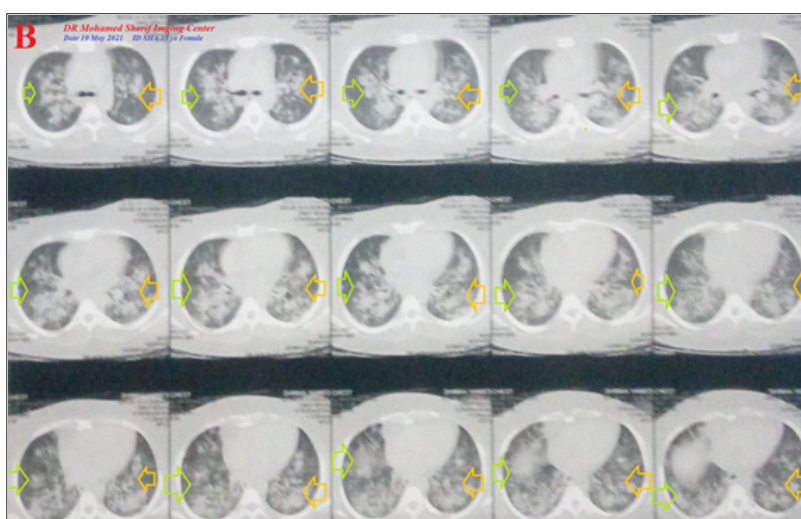


Figure 2 B: Chest CT scan film showing severe bilateral ground glass fluffy opacities (orange and lime arrows).

Discussion

Overview

- A young-aged, single, female, mentally retarded, and Parkinson's disease patient presented to the physician outpatient clinic with severe bilateral pneumonia and Wavy triple sign (Yasser's sign) of hypocalcemia.
- The primary objective for my case study was the presence of a patient with severe COVID-19 pneumonia in mentally retarded Parkinson's disease and a Wavy triple sign (Yasser's sign) of hypocalcemia in POC.
- The secondary objective for my case study was the question of; how did you manage the case at home?
- There was a history of direct contact with confirmed COVID-19 cases.
- The presence of direct contact with confirmed COVID-19 cases and bilateral ground-glass consolidation on top of acute tachypnea will strengthen the COVID-19 diagnosis.
- The tachypnea, hypoxia, consolidation, electrocardiographic (ECG) sinus tachycardia, and elevated d-dimer are highly suggestive of associated pulmonary embolism.
- Despite Parkinson's disease having started 15 years ago before COVID-19 pneumonia, there is no evidence of an immunogenic cause for COVID-19 pneumonia (Fearon & Fasano, 2021). But it may have a role in the severity of COVID-19 pneumonia (Fearon & Fasano, 2021).
- Regarding mental retardation, there is no clear cause. Genetic interpretation may be considered but need evidence.
- The dramatic reversal of clinical, electrocardiographic, and radiological after anticoagulants, antiplatelet, anti-infective drugs, and steroids had happened.
- A nearly complete clinical, radiological, and laboratory improvement that occurred after a long time of management with anti-infective drugs, anticoagulants, steroids, and antiplatelets strongly implies their effects.
- Blood pressure, respiratory rate, pulse, and O₂ saturation are a strong guide for clinical follow-up in COVID-19 patients.
- A gradual decreasing the level of elevated CRP, d-dimer, and serum ferritin may be used as another good laboratory guide for follow-up for COVID-19 pneumonic patients.
- Fungal pneumonia was the possible differential diagnosis for the current case study.
- I can't compare the current case with similar conditions. There are no similar or known cases with the same management for near comparison.
- The only limitation of the current study was the unavailability of echocardiography.

Conclusion and Recommendations

- The association of COVID-19 pneumonia in Parkinson's disease with mental retardation and the Wavy triple sign (Yasser's sign) is interesting and stupendous.
- The constellation of hypotension, ECG sinus tachycardia, hypoxia, Wavy triple sign (Yasser's sign) of hypocalcemia, elevated creatinine, elevated urea, elevated liver enzymes, and marked elevated d-dimer in the presence of severe

bilateral COVID-19 pneumonia may carry a poor prognostic outcome and is indicating a high-risk condition.

Conflicts of interest

There are no conflicts of interest.

Acknowledgment

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References

1. WHO. (2022). Parkinson disease. *World Health Organization*. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/parkinson-disease>
2. Fearon, C., & Fasano, A. (2021). Parkinson's Disease and the COVID-19 Pandemic. *J Parkinsons Dis.* 11(2), 431-444. DOI: 10.3233/JPD-202320
3. Drake, K. (2021). Is there a link between COVID-19 and Parkinson's disease? Retrieved from <https://www.medicalnewstoday.com/articles/is-there-a-link-between-covid-19-and-parkinsons-disease>
4. Merello, M., Bhatia, K. P., & Obeso, J. A. (2021). SARS-CoV-2 and the risk of Parkinson's disease: facts and fantasy. *Lancet Neurology*, 20(2), 94-95. DOI: 10.1016/S1474-4422(20)30442-7
5. Elsayed, Y. M. H. (2019). Wavy Triple an Electrocardiographic Sign (Yasser Sign) in Hypocalcemia. A Novel Diagnostic Sign; Retrospective Observational Study. *EC Emergency Medicine and Critical Care (ECEC)*. 3(2), 1-2.
6. Elsayed, Y. M. H. (2020). Hypocalcemia-induced Camel-hump T-wave, Tee-Pee sign, and Bradycardia in a Carpenter of a Complexed Dilemma: A Case Report. *Cardiac*, 2(1), 07. DOI : <https://doi.org/10.35702/card.10007>

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