

Elderly COVID-19 pneumonic patient with both Graded and Movable-weaning off phenomenon or Yasser's phenomena in a surgical severe aortic stenosis; at-home dilemma management

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Abstract

Rationale: Coronavirus disease is a leading remarkable critical pandemic global infection. Graded phenomenon or Yasser's phenomenon is a novel electrocardiographic phenomenon that changes the arrhythmia didactic. It is decisive progress in understanding arrhythmia. The phenomenon is a contemporary vigorous instructor for monitoring and follows up the arrhythmic patients. Movable-weaning off phenomenon or Yasser's phenomenon is another novel electrocardiographic phenomenon characterized by serial dynamic changes in all cases of either Wavy triple or double electrocardiographic signs (Yasser signs) of hypocalcemia. Movable-weaning off phenomenon is a guide for both Wavy triple and double an electrocardiographic. Severe symptomatic aortic stenosis has a bad outcome after the evolution of symptoms, and prompt operative intervention is advisable.

Patient concerns: An elderly female COVID-19 pneumonic patient presented to physician outpatient clinic with bilateral peripheral pneumonia and both Graded and Movable-weaning off phenomenon or Yasser's phenomena in severe aortic stenosis.

Diagnosis: Elderly COVID-19 pneumonia with both Graded and Movable-weaning off phenomenon or Yasser's phenomena.

Interventions: Oxygenation, electrocardiography, chest CT scan, and echocardiography. Outcomes: Gradual dramatic clinical, electrocardiographic, and radiological improvement had happened. Lessons: It denotes the role of the anticoagulants, the antiplatelets, steroids, and antimicrobial therapy in the management of COVID-19 pneumonia with Graded and Movable-weaning off phenomenon or Yasser's phenomena in severe aortic stenosis. The presence of Graded and Movable-weaning off phenomenon or Yasser's phenomena, elderly, and pneumonia, in the case presentation, represent new complicated risk factors especially, with an associated severe sclerotic aortic stenosis.

Key words: elderly; COVID-19; coronavirus; pneumonia; graded phenomenon or yasser's phenomenon; movable-weaning off phenomenon; yasser's phenomena; aortic stenosis

Short title: A case report article in cardiology, critical care, emergency medicine, and infectious diseases

Abbreviations

CBC: Complete blood count
 COVID-19: Coronavirus disease 2019
 ECG: Electrocardiography
 IV: Intravenous
 IVB: Intravenous bolus
 O2: Oxygen
 POC: Physician outpatient clinic

SGOT: Serum glutamic-oxaloacetic transaminase
 SGPT: Serum glutamic-pyruvic transaminase
 VR: Ventricular rate

1. Introduction

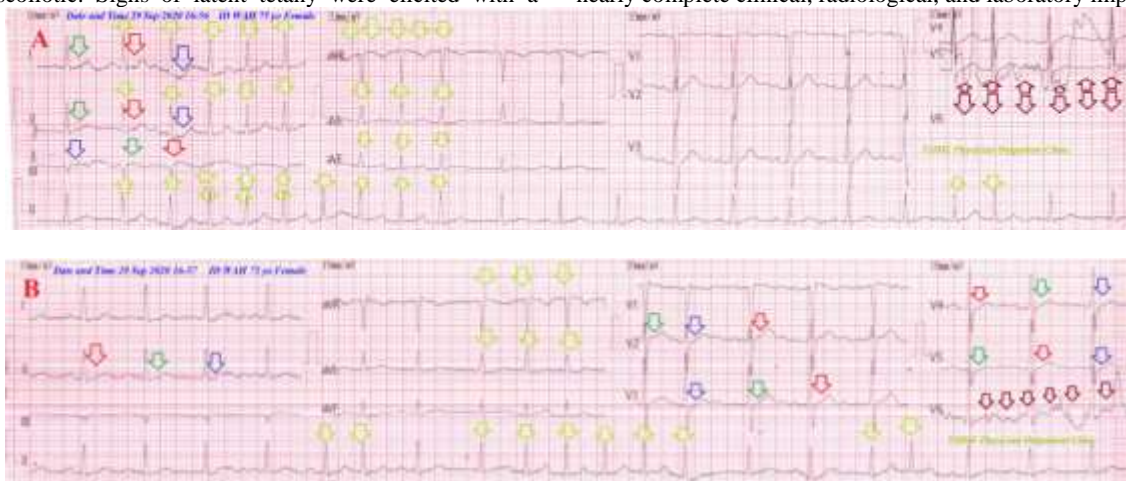
Elder patients with COVID-19 carry a greater risk that indicating hospitalization or death. The risk of disease severity in COVID-19

patients is increasing with age. So, the older patients at the highest risk [1]. Coronavirus disease 2019 (COVID-19) represents a global crisis regards the response of human immunity to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [2]. COVID-19 pandemic is a strong trigger for respiratory infection, pneumonia, and death [3]. Most cases of bacterial pneumonia can be safely and effectively treated with antimicrobial and wide-spectrum antibiotics if are early used in patients with COVID-19 [4]. Bacterial superinfections in COVID-19 pneumonia are still emerging. However, there is a good link between the detection of bacterial products in blood with disease severity in COVID-19 patients [2]. **Graded phenomenon or Yasser's phenomenon** is a novel electrocardiographic phenomenon that changes the arrhythmia didactic. It is decisive progress in understanding arrhythmia. The phenomenon is a contemporary vigorous instructor for monitoring and follows up the arrhythmic patients. There are many changes in the Graded phenomenon. Numerous extensions for arrhythmia in the Graded phenomenon were recorded. The risk in arrhythmia with the Graded phenomenon the either high, or non-risk, or still-risk [5]. Movable-weaning off **phenomenon or Yasser's phenomenon** is another novel electrocardiographic phenomenon characterized by serial dynamic changes in all cases of either Wavy triple or double electrocardiographic signs (Yasser signs) of hypocalcemia. Movable-weaning off phenomenon is a guide for both Wavy triple or double electrocardiographic signs [6]. Aortic sclerosis is a degenerative disease. It more common with aging. In those less than 60 years of age, less than 10% of the people have aortic sclerosis. In those above 70 years of age between 20-40% of the population have aortic sclerosis. Age, male sex, hypertension, diabetes, smoking, renal disease, and hypercholesterolemia are implicated risk factors. There is a correlation between aortic sclerosis and the development of serious cardiac episodes [7].

2. Case presentation

A 75-year-old married, housewife, an Egyptian female patient presented to the physician outpatient clinic (POC) with acute tachypnea, fever, and dry cough. Fatigue, anorexia, and perioral and extremities numbness were initial associated symptoms. He gave a history of fever for 3 days hours. The patient has a recent history of sclerotic severe aortic stenosis. He also gave a recent history of contact with a relative confirmed COVID-19 patient in the past 10 days. She presented to the POC for consultation. Upon general physical examination; generally, the patient was tachypneic, agitated, with a regular tachycardia of VR 100 bpm, blood pressure of 110/70 mmHg, respiratory rate of 40 bpm, the temperature of 39.7 °C, and pulse oximeter of oxygen (O₂) saturation of 88 %. She appeared kyphoscoliotic. Signs of latent tetany were elicited with a

positive response. No more relevant clinical data were noted during the clinical examination. The patient hates any hospitalization. He had managed at home as COVID-19 pneumonia in a sclerotic severe aortic stenosis patient. Initially, the patient was treated with O₂ inhalation by O₂ cylinder (100%, by nasal cannula, 5L/min). Ringer solution (500 ml over 30 minutes) was immediately given. The patient was maintain treated with SC enoxaparin 80 mg twice daily), aspirin tablet (75 mg, once daily), clopidogrel tablet (75 mg, once daily), cefotaxime; (1000 mg IV every 8hours), azithromycin (500 mg PO single daily dose), oseltamivir (75 mg PO twice daily only for 5 days), hydrocortisone sod succinate (100 mg IV every 12 hours), and paracetamol (500 mg IV every 8 hours as needed). The patient was monitored for temperature, respiratory rate, blood pressure, and O₂ saturation. The Serial ECG tracings showed a Graded phenomenon (Yasser's phenomenon) with progressive extension from left to right with a normal rhythm in between (**Figure 1 A-E**) until becoming total sinus rhythm in all ECG tracings (**Figure 1F**). There are also the Movable-weaning off phenomenon or Yasser's phenomenon (red, green, and blue arrows). The initial complete blood count (CBC); Hb was 11.6 g/dl, RBCs; $3.95 \times 10^3/\text{mm}^3$, WBCs; $11.2 \times 10^3/\text{mm}^3$ (Neutrophils; 71 %, Lymphocytes: 17%, Monocytes; 10%, and Eosinophils; 2%), Platelets; $186 \times 10^3/\text{mm}^3$. S. Ferritin was high; 365.05 ng/ml. D-dimer was high; 1157 ng/ml. CRP was high; 102 g/dl. LDH was high; 509 U/L. SGPT was high; 66 U/L, SGOT was high; 52 U/L. Serum creatinine; 1.32 mg/dl and blood urea; 17 mg/dl were normal. RBS was; 188 mg/dl. On the fifteenth day of management; CBC; Hb was 10.6 g/dl, RBCs; $3.3 \times 10^3/\text{mm}^3$, WBCs; $9.4 \times 10^3/\text{mm}^3$ (Neutrophils; 67.6 %, Lymphocytes: 27.4%, Monocytes; 4%, and Eosinophils; 1 %), Platelets; $321 \times 10^3/\text{mm}^3$. S. Ferritin was normal; 139.14 ng/ml. D-dimer was high; 105 ng/ml. CRP was weak positive; 7 g/dl. LDH was normal; 417 U/L. SGPT was normal; 37 U/L, SGOT was normal; 26 U/L. Serum creatinine; 1.1 mg/dl and blood urea ; 15 mg/dl were normal. RBS was; 113 mg/dl. Echocardiography was done on the fourth day of the presentation showing sclerotic aortic valve with severe aortic stenosis (**Figure 2A**). Plain chest film on the seventh day of the presentation showing peripheral bilateral ground-glass pulmonary consolidations, enlargement of both right and left pulmonary arteries, elevated right copula of the diaphragm, and central ground-glass pulmonary consolidations (**Figure 2B**). Chest CT scan was done on the seventh day of the presentation showing peripheral bilateral ground-glass pulmonary consolidations (**Figure 2C**). Elderly COVID-19 pneumonia with both Graded and Movable-weaning off phenomenon or Yasser's phenomena. was **the most probable diagnosis**. ECG tracing was taken within 26 days of treatment showing normalization of above with normal sinus rhythm of VR 73 (**Figure 1F**). Within 27 days of the above management, the patient finally showed nearly complete clinical, radiological, and laboratory improvement.



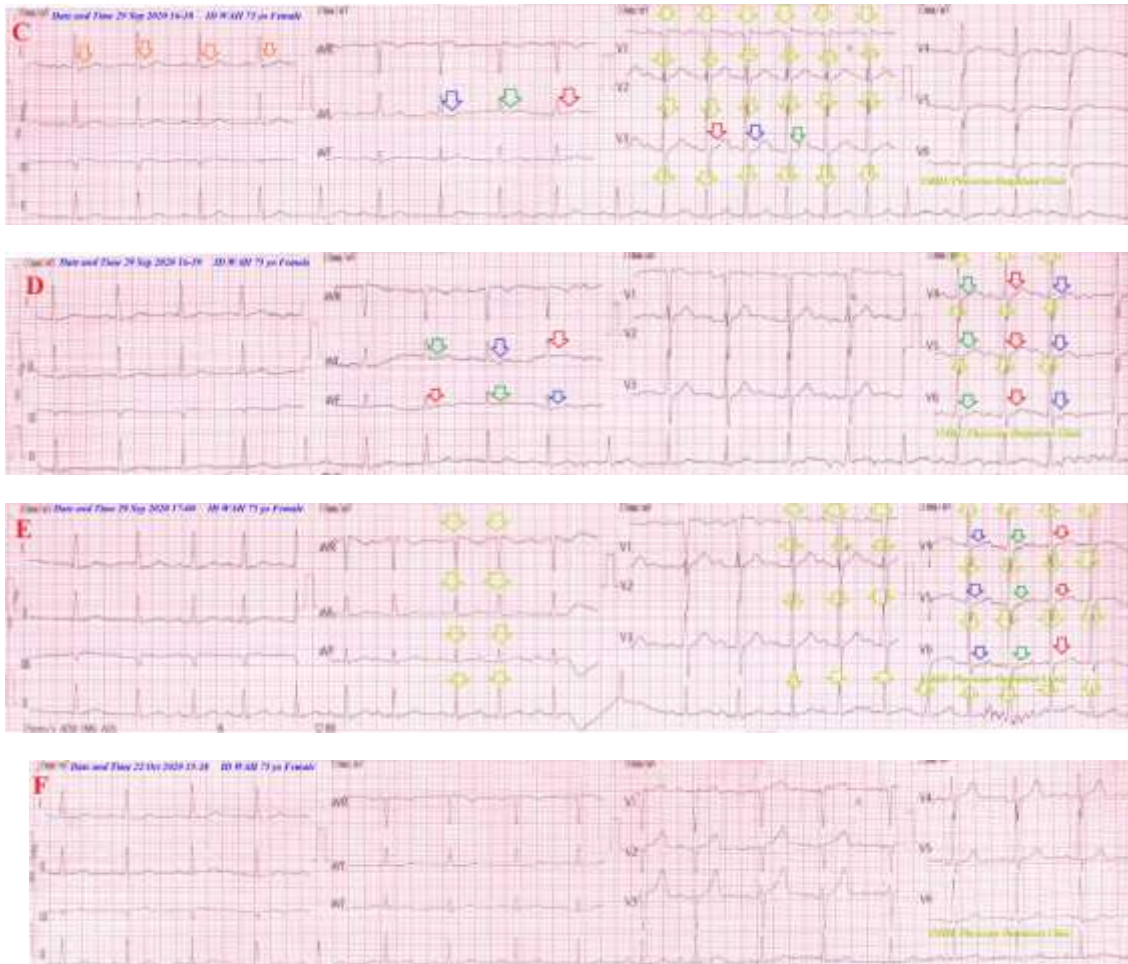
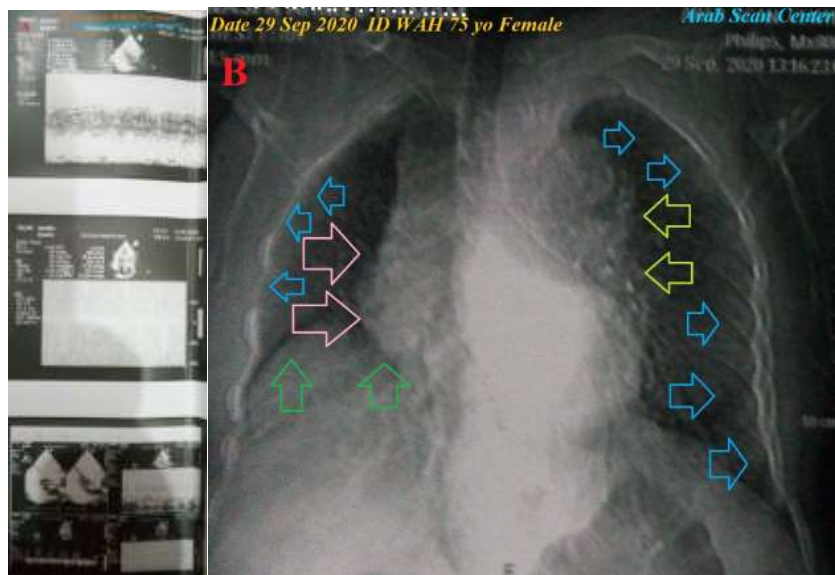


Figure 1 A-E Serial ECG tracings showed a Graded phenomenon (Yasser's phenomenon) with progressive extension from left to right with a normal rhythm in between until becoming total sinus rhythm in all ECG tracing (lime arrows) that was normalized after treatment (F-tracing). There are also the Movable-weaning off phenomenon or Yasser's phenomenon (red, green, and blue arrows). Brown arrows in A. and B. ECG tracings indicate unstable movable V6 lead.



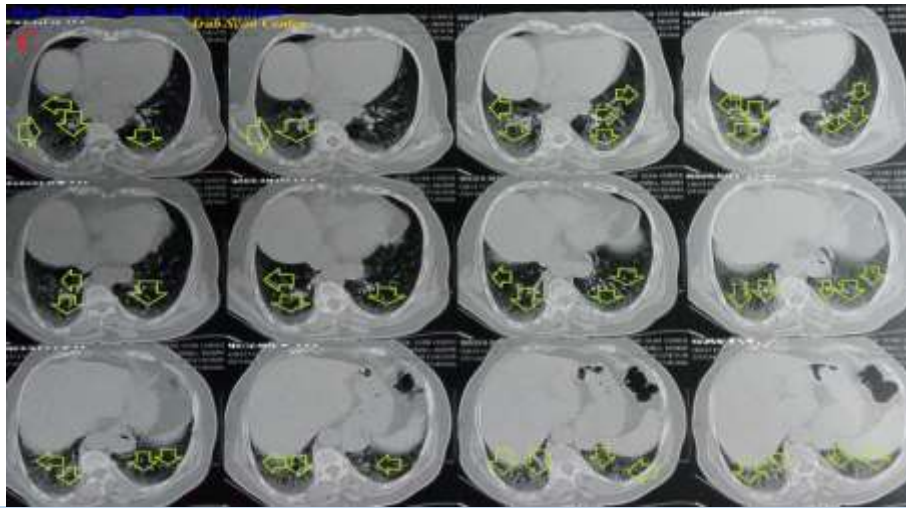


Figure 2: A. Echocardiography was done on the fourth day of the presentation showing sclerotic aortic valve with severe aortic stenosis. B. Plain chest film on the seventh day of the presentation showing peripheral bilateral ground-glass pulmonary consolidations (blue arrows), enlargement of both right and left pulmonary arteries (lime arrows), elevated right copula of the diaphragm (green arrows), and central ground-glass pulmonary consolidations (pink arrows). C. Chest CT scan was done on the seventh day of the presentation showing peripheral bilateral ground-glass pulmonary consolidations (lime arrows)

3. Discussion

Overview:

An elderly female COVID-19 pneumonic patient presented to physician outpatient clinic with bilateral peripheral pneumonia with both Graded and Movable-weaning off phenomenon or Yasser's phenomena in severe aortic stenosis.

The objective primary for my case study was the presence of COVID-19 pneumonia with both Graded and Movable-weaning off phenomenon or Yasser's phenomena in an elderly female patient in severe aortic stenosis.

The secondary objective for my case study was the **question** of; How did you manage the case?

There was a history of direct contact to confirmed the COVID-19 case.

The presence of direct contact to confirmed the COVID-19 case, bilateral ground-glass consolidation, and lymphocytopenia on top of fever, tachypnea, and dry cough will be supporting the COVID-19 diagnosis. The tachypnea, sinus tachycardia, hypoxia, consolidation, and elevated d-dimer are highly suggestive of associated pulmonary embolism.

Graded and Movable-weaning off phenomenon or Yasser's phenomenon on the case presentation are unknown. These are mostly due to associated suggested myocarditis or severe sclerotic aortic stenosis. The graded phenomenon was a high-risk, and up-grading phenomenon with the left to the right extension.

Movable-weaning off phenomenon or Yasser's phenomenon is mostly due to tachypnea-inducing latent tetany.

The conversion of both Graded and Movable-weaning off phenomenon or Yasser's phenomena to normal sinus rhythm in ECG after clinical improvement was marked.

The presence of elderly, pneumonia, severe sclerotic aortic stenosis is already aggravating factors for the current case.

It signifying the role of anti-infective drugs, anticoagulants, and antiplatelet role in this complicated COVID-19 case.

The presence of tachycardia indicate either fever, or pulmonary embolism, or suggested myocarditis.

Blood pressure, respiratory rate, and O₂ saturation are a strong guide for clinical follow-up in COVID-19 patients.

A gradual decreasing the level of elevated CRP, lymphocytic count, liver enzymes, and CT chest may be used as another good laboratory guide for follow-up in COVID-19 patients.

The serial change of radiological changes from abnormal chest CT to normal at the end will strengthen the used medications in this effective management. Also, it gives a good radiological impact for follow up.

I can't compare the current case with similar conditions. There are no similar or known cases with the same management for near comparison.

Limitations of the study: There are no known limitations to the study.

4. Conclusion and Recommendations

It denotes the effective role of anti-infective drugs, anticoagulants, and antiplatelet role in this complicated COVID-19 case study.

The presence of Graded and Movable-weaning off phenomenon or Yasser's phenomena, elderly, and pneumonia, in the case presentation, represent new complicated risk factors especially, with an associated severe sclerotic aortic stenosis.

Conflicts of interest: There are no conflicts of interest.

Acknowledgment: I wish to thanks my wife to save time and improving the conditions for helping me.

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