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Coxsackie Virus Infection in A 61-Year-Old Female

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1. Introduction

This case study catalogues the experience of a sixty-one-year-old female who presented to the ER with symptoms that classically mirror those of the Covid-19 infection but ended up being coxsackie virus infection.

2. What is coxsackie virus?

This is a group of viruses classified as RNA viruses, somewhat like corona viruses, but typically common among children. Adults with decreased immunity may be infected with it too. They are generally the cause of hand, foot, and mouth disease (HFMD) in children, and associated with muscular, lung and heart diseases. However, they are self-limited, and thus generally require no treatment. Unfortunately, coxsackie viruses are very contagious through person-to-person contact and direct contact or respiratory droplets/ transmission. Children may exhibit symptoms of infection with rashes on their cheek or around their mouth, but generally do not become ill due to their strong immunity [1].

Most viruses, whether it is influenza, coxsackie or covid-19, have symptoms that appear commonly similar in presentation, but their ultimate mortality rate is not equal. Symptoms of fever, muscle aches, cough, and nasal congestion are generally associated with the flu, and most recently, to Covid -19 symptoms. According to a recent study, “the main symptoms of coronavirus disease 2019 (COVID-19) include fever, cough, myalgia, fatigue and lower respiratory signs” [2].

3. The Case of a Patient with Coxsackie Virus Infection

A 61year old female healthcare practitioner who had a busy family practice clinic started experiencing muscle aches and pain, fever, and epigastric pain. As a knowledgeable clinician, she believed the symptoms were typical of influenza, hence she started herself on Theraflu, but noted no improvement after three days of the treatment. She had no other symptoms to suggest anything beyond a viral flu, but the fever and the epigastric pain persisted, but the muscle aches improved. She was getting ready for an overseas trip, but prompted by her husband’s insistence, she went to a local ER to be evaluated. Upon arrival and assessment, an EKG and cardiac enzymes along with other tests were ordered. The results showed evidence (ST segment elevation, and elevated cardiac enzymes) for possible MI. Although there was consistent temperature of 101.2 and above, the conclusion of MI was made and in fact, according to the Cardiologist who was consulted, there was no question about MI, but just how much damage had been done. With the hospital not having an Interventional Cardiologist on staff, the patient was given a 2mg morphine and quickly transferred to a local hospital fifteen minutes away, for a cardiac catheterization.

Upon arrival to the receiving hospital, the physician did not visit with the patient to get any further history beyond the report sent from the transferring hospital. Based on the history and the urgent need for the cardiac catherization, the physician gave order for the patient to be taken straight to Cath lab. The patient overheard him give an order for Phenergan 50mg, as well as another medication, for sedation. Being a clinical person herself, she told the nurse that she overheard the order from the doctor and was concerned about the dose of the Phenergan, because she is very sensitive to medications. She was concerned that giving her 50mg of Phenergan along with another medication may put her at risk for negative reaction. The nurse walked away and noted that she heard her and will tell the doctor. According to the patient, the doctor never talked per-

sonally to her and the last she remembered was the conversation with the nurse. An hour later in the Cath lab, the patient had a respiratory arrest and coded. Attempts to resuscitate her were seeming unsuccessful until a second Cardiologist was called in to the Cath lab. Two hours had passed for a procedure that was not supposed to last more than 30 minutes; at this point a Chaplain was assigned to visit with the patient's husband in the waiting room as any favorable outcome was in question. The cardiac/code team saw a green light when the patient suddenly started to respond! The physician (Cardiologist) came out with the "good and bad news" to her husband; first was the good news that "your wife is alive and in recovery; the bad news is that we lost her, but we fought hard to restore her." He further told the patient's husband that his wife's heart was like that of a 22-year-athlete based on what they noted during the catheterization, but she had some pericarditis - inflammation of the pericardium. After two days in the hospital, she was discharged on Motrin and instruction to follow-up with the Cardiologist. However, the fever and the epigastric pain persisted. She also noticed that she was having more difficulty breathing and was worried that she may have pneumonia.

A couple of days later, she decided to start herself on Z-pack, with a little improvement that did not last long; she continued to experience high temperatures, epigastric pain and difficulty breathing. Her younger son who was a third-year medical student came home to visit as a surprise and after a short conversation with her, he decided to listen to her lungs. She immediately questioned about why she was discharged and noted that she had evidence of pneumonia with rales/crackles on both lungs. He emphatically noted that she should have had a pulmonologist to consult on her before discharge. She reassured him that she was feeling a little better because she had started using azithromycin. Suddenly the next day, the dyspnea and epigastric pain gradually got worse, so she decided to go to a Gastro-enterology Center where a CT scan of the abdomen revealed fluid at the base of both her lungs, but no issues with the abdomen. She also had an Endoscopy (EGD) which showed no negative results. She was given antacid pills and discharged home, but her symptoms did not subside. The next day she was rushed back to the first hospital ER where she started her journey, with dyspnea and a very high temperature of 102.6o with rigors. A chest X-ray was done, and it revealed pulmonary effusion in both lungs with evidence of pneumonia, cardiac enzymes were normal, but there was still evidence of pericarditis. An echocardiogram showed normal results. She was placed on two different intravenous antibiotics and fever reducing medication. Four days later, there was not much improvement in the fever, and the dyspnea was worsening, so a Thoracentesis was done. A total of 500cc of cloudy fluid was taken out from her left lung. Upon testing the fluid, coxsackie virus was identified. The pulmonologist determined that the antibiotics were not effective since the pneumonia was viral in origin, so he immediately initiated steroid treatment. Within 48 hours, the fever abated, and the patient's breathing improved significantly. Three days later, the patient was discharged home in much improved condition: no fever, significantly reduced dyspnea and overall improved sense of well-being.

As may be noted, there are many similarities between symptoms of coxsackie virus infection and corona virus infection, especially in their earlier presentations of fever, body aches and pain, with gradual progression to inflammation in the lungs (pneumonia) which generally present as dyspnea, and pericarditis. And by the way, the 61-year-old female patient described in this case is none other, but me! I have long since remained very healthy, but cautious, especially during the covid pandemic.

4. What Lessons Can Be Learned from This Case?

1. It is very important to take a thorough history of every patient and listen very carefully, rather than rushing to conclusion. The history should not only focus on the symptoms but should also determine if there were others (family or friends) around the patient with similar symptoms. Although this may be seen as a public health approach to treatment, it is important in making wise judgments and treatment decisions.
2. Every patient with elevated cardiac enzymes and an abnormal EKG" should not be assumed only to be having a myocardial infarction. It is important to consider other differential diagnosis rather than jumping to conclusions, especially if the symptoms, like very high fever, are present and may be suggestive of other problems like pericarditis.
3. Every patient needs to be listened to and taken seriously. Although the attempt to rush to cardiac catheterization may be justified, one little mistake almost took my life. The doctor at the hospital where the catheterization was done did not take time to talk with me even for a minute, before giving the orders for sedation. If he did, he may have noted the Phenergan 50mg along with another sedative and the morphine I was given fifteen minutes prior – at the transferring hospital - may pose a problem.
4. Do not assume that your patients are ignorant, especially if they fall under a population that may be disparately so categorized. There may have been an element of disparity in terms of believability in my case: a black female – more so one with an uncommon/unfamiliar last name - who "may not know anything."
5. Clinicians must document what they did and not what they should have done that was not really done, just to cover up. A later review of my record from the receiving hospital showed documentation suggesting that the patient presented to the ER with chest pain and no fever and was transferred for cardiac catheterization. This, of course, was to-

tally untrue! I never complained of chest pain; I had a fever of about 103oF when I initially arrived at the ER and my primary complaint was fever, rigors, and epigastric pain.

6. Do your own assessment when you have a case transfer; do not assume anything! After all, said and done, it is your license and not "our license" in case of any negative outcome.

Finally, we have been called to serve and we must serve with diligence and honor. We must treat all patients like we would like to be treated, irrespective of their socio-economic status or demographic classification. We must put our patients' safety first and we must remember the oath under which we serve, and hold onto the principle of beneficence, a key element in clinical practice.

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