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COVID 19 survivors, then what ?: Two different case presentation

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Abstract

Coronavirus disease 19 (COVID-19) which might present in wide range clinical spectrum has caused thousands of deaths worldwide. Here, we have reported two different interesting post-covid manifestation including acute demyelinating polyneuropathy and invasive pulmonary aspergillosis. Clinicians should have a high suspicion of unexpected complications and identify its challenging unexpected complications.

Keywords

Covid-19; Anuria; Invasive pulmonary aspergillosis; Demyelinating polyneuropathy.

Introduction

Since February 2020, coronavirus-19 (COVID-19) pandemic due to the novel coronavirus severe acute respiratory distress syndrome coronavirus-2 (SARS-Cov-2), has caused more than 100 million confirmed cases over the worldwide. The clinical spectrum is varied from asymptomatic carriers to acute respiratory distress that resulted with almost 2.3 million death [1]. Reports of different manifestations are increasing in the literature. Here, we have reported two different clinical manifestations of COVID-19 infection.

Case 1

61 years old man with a history of coronary bypass operation at 2017 admitted to our nephrology clinic with a compliant of anuria and generalized weakness specifically at legs for last two days. He was under medication of clopidogrel 75 mg once a day, metoprolol 25 mg once a day, rosuvastatin 10 mg once a day. He also had a history of covid infection with pneumonia about 15 days prior to the clinical visit and he received moxifloxacin, favicovir, anticoagulants resulted with clinical improvement. The physical exami-

nation revealed a glob vesicale and bilateral symmetrical lower extremity weakness with preserved deep tendon reflexes. His power was symmetric 4/5 in lower extremities. Almost 2500 mL urine was drained immediately after urinary catheter placement. We performed all laboratory and imaging texts for the patient. In his laboratory analysis, the creatinine level was 0,96 mg/dL with eGFR 84 ml/min/1.73 m^2, potassium 4,55 mEq/l, sodium 142 mEq/l , calcium 10 mg/dL, phosphorus 4.03 mg/dL, total protein 7.2 mg/dL, albumin 4.2 gr/dl, magnesium 2.03 mg/dL, C-reactive protein 4.05 mg/L, AST 19 IU/L, ALT 26 IU/ L along with mildly increased LDH 250 IU/L and ferritin 596.4 ng/mL . His hemogram was normal. In his spot urine test, density was 1025 with 3 positive erythrocyte and 3 positive leukocytes without proteinuria and pyuria. Either COVID-19 through reverse transcriptase-polymerase chain reaction (COVID 19-PCR) and antibody tests were negative. His both kidney sizes and structures were normal in his abdominal ultrasound which we performed after urinary catheterization. Magnetic resonance imaging (MRI) of the brain was normal and total spine MRI showed minimal bulging at T1-T2, T2-T3, L3-L4 and degenerative hypertropia at L5-S1 with minimal narrowing at neural foramen which were all not remarkable for neurological complaints. Spinal fluid analysis showed no positive results. Nerve conduction study showed absent F wave at right peroneal and left tibial nerve with prolonged distal latency at left peroneal nerve (Table 1). The patient had diagnosed acute demyelinating polyneuropathy with all physical examination and EMG results. Pulse steroid therapy has been started.

Case 2

64 years old man without any chronic disease, admitted to infection disease clinic with a compliant of dyspnea, hemoptysis and fever for 2 weeks. He had a history of covid pneumonia 3 months before and had favicovir, anticoagulant therapy which he has stopped 1 month before his admission. His blood pressure was 120/70mm of Hg, heart rate 70 beats per minute, respiratory rate 20 per min, oxygen saturation 88% on room air, requiring 3 L oxygen via nasal cannula to maintain oxygen saturation greater than 95%. His laboratory analysis revealed no abnormality with the creatinine level of 0.6 mg/dL, sodium 142 mEq/L, potassium 4.7 mEq/L, C-reactive protein 170 mg/L white blood cell count 15000/mL profoundly neutrophilic pattern and elevated ferritin 881 ng/mL. His COVID-19 PCR testing was negative. The computed tomography (CT) scan of the chest showed patchy multilobar consolidations along with cavitating lesion sized 50 X 67 mm at the upper left lung (Figure 1). Serum procalcitonin level was in normal range (0,037 ng/mL). Serum tuberculosis PCR was negative and beta galactomannan level revealed positive. With all these clinical findings we have diagnosed the patient as covid-19 associated pulmonary aspergillosis (CAPA) and have started voriconazole treatment.

Discussion

Here we reported two different clinical manifestations of post-COVID infection. Before COVID- 19 pandemic, about six coronavirus subtypes were identifiable that leads to upper respiratory tract symptoms along with central and peripheral nerves system manifestations [2,3].

Since March 2020, there are several reports in the literature regarding the polyneuropathy associated with covid infection. Most cases have concomitant neurological symptoms with active COVID infection [4]. Of those, both anosmia and ageusia are more frequent symptoms that are most probably regarded to

Table 1: Nerve conduction study results of the patient.

Nerves/Sites	Distal Latency (ms)	Amplitude (mikrovolt)	Conduction Velocity (m/s)	F waves Lates (ms)
Sensory Nerve Conduction Study				
Right Median-Digit 1 (Antidromic) Wrist	2.71	**6.3**	46.9	
Right Median-Digit III (Antidromic)				
Wrist	3,13	**13,7**	49,6	
Mid-Palm	1,98	0,61	40,4	
Right ulnar-Digit V (Antidromic)				
Wrist	2,6	**8,7**	51,1	
Left Sural- Ankle (Calf)	2,71	5,4	51	
Right Sural -Ankle (Calf)	2,81	6,1	48	
Motor Nerve Conduction Study				
Right Median-APB				
Wrist	3,28	6,9		26,9
Elbow	7,55	6,9	57	
Right Ulnar- ADM				
Wrist	3,02	8,1		28,4
B. Elbow	6,72	6.9	69	
A. Elbow	8,39	8.6	54	
Right Peroneal EDB				
Ankle	4,06	3,6		
Fib head	10,89	2,3	45	NO
Pop Fossa	12,34	3,2	54	
Left Peroneal-EDB				
Ankle	5	3,2		66
Fib Head	12,34	2,8	43	
Pop Fossa	13,96	3,3	50	
Right Tibial-AH				
Ankle	4,06	5		52,9
Pop Fossa	13,59	5,1	43	
Left Tibial-AH				
Ankle	4,38	4,9		NO
Pop Fossa	13,85	3,7	45	

APB: Abductor Polisis Brevis, ADM: Abductor Digiti Minimi, EDB: Extensor digitorum brevis, AH: Abductor hallusis, NO: not obtained.

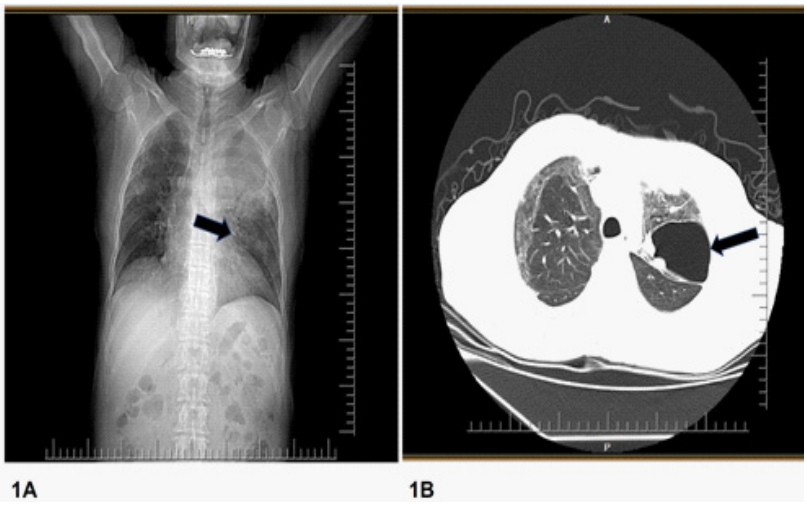

Figure 1: A: Chest Radiography showing a large cavity mass lesion seen left upper lung lobe (red arrow). B: Chest computed tomography: Single pulmonary cavity containing two fungal balls (red arrow)

viral neuro-lysis[5]. However, reported peripheral polyneuropathy cases were generally attributed to the medications such as high dose corticosteroids or other drugs [6]. Postinfectious peripheral nerve involvement mechanism is mostly speculated to the immune-mediated injury and might present in the setting of different virus types. In the previous reports, the estimated prevalence of central nervous system complication due to SARS is 0,04% and peripheral nervous system complication is 16% [6] and those data do not include cerebrovascular events. As far as our knowledge, there are 20 cases in the literature including covid-19 related Guillain-Barre syndrome [6]. Almost all of the cases have concomitant presentation with active infection [6,7] except one that has late onset of symptoms similar with our first case [8]. Together with preserved reflexes, the lack of F wave response at right peroneal nerve and latency in left peroneal nerve at EMG analysis has led us to diagnose GBM in this present case. Although we were unable to perform urodynamic analysis due to the urinary infection, anuria and globe vesica findings at physical examination have led us to drew attention to the possible neuropathy due to the covid-19 and further to perform the nerve studies for our patient.

In addition to fight against to its spread and severe clinical manifestations of COVID-19, co-infection with other respiratory pathogens have become serious problem in the management of these patients [9]. Although, several types of bacterial co-infections are reported along with COVID infection, co-fungal infections are rare [10]. The largest report regarding COVID-19 with invasive pulmonary aspergillosis (IPA) is documented by Zhu et al [11]. Subsequently other cases were reported from Belgium, Netherland and France with the IPA prevalence rate from 19.6 % to 33,3 % [12-14] in intensive care units. The higher Th2 response with increase in IL-10, IL-6, TNF alpha and Monocyte Chemoattractant Protein-1(MCP-1) levels along with down regulation in macrophage responses might be the possible pathology that led to clinical development of IPA [10].

The unique condition of our patient is he has no comorbid disorder and had no corticosteroid therapy during active COVID-19 treatment and IPA is developed after mild form of COVID -19 presentation. This case is important by reminding us IPA can develop in any form of COVID-19 manifestation even without having traditional risk factors for aspergillus infection such as diabetes or prior lung disease.

Careful medical history inquiry with physical examination is crucial for to the diagnosis of unexpected complications of new COVID infection. These interesting small case presentations are important to be able to include in to metanalysis of this novel COVID burden for to serve both the literature and also future medical knowledge.

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