An Unexpected Diagnosis of COVID-19 in a Trauma Patient

Bir Travma Hastasında Beklenmeyen COVID-19 Tanısı

INTRODUCTION

At the end of December 2019, a fast-spreading outbreak had started due to a novel coronavirus in Wuhan city of Hubei, China (1). The World Health Organization (WHO) declared this epidemic as a pandemic and an emergency around the World on 30 January 2020 and a real-time situation report declaration had begun (2). The virus is named as Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) and the disease as COVID-19 disease (3). At first, patients who do not meet the disease’s criteria were accepted without COVID-19 but later we noticed that even these patients may have the disease. So, during the pandemic period, every patient must be assumed to have the disease and necessary preventive measures must be taken. In this case, we unexpectedly observed COVID-19 in an old patient who admitted to the emergency department with trauma.

CASE

A 92-year-old man presented with cranio cervical trauma due to a fall from stairs to the emergency department. He had a history of lung carcinoma, and he was under radiotherapy. Also, he had hypertension and diabetes type 2 as underlying diseases. He had no history of travel abroad and said that he didn’t accept visitors at home because of his health condition. His respiratory rate was 28/per minute and SPO2 94% and, had no fever or newly emerging complaints of cough, sputum, fever, or shortness of breath. We thought that his hypoxia is chronic due to carcinoma so at first, we did not suspect COVID-19. We planned and neck computed tomography (CT) scan. But the patient admitted that his dyspnea slightly increased for a few days and his arterial blood analysis showed respiratory alkalosis so to rule out pulmonary embolism we also performed a contrast -enhanced chest CT scan. CT showed a non-deplaced corpus fracture of the second cervical vertebrae and bilateral lung consolidations (Figures 1 and 2).

DISCUSSION

According to data from China, COVID-19 disease has nonspecific clinical and laboratory manifestations, so epidemiological features like the history of close contact with COVID-19 positive cases or presenting in pandemic areas are very important for suspicion and diagnosis (4). Our case had no history of close contact or being in pandemic areas.

Yonca Senem Akdeniz1, Burcin Tutar2, Serap Biberoglu1, Fatih Cakmak1, Gokcan Aman1

1-Istanbul University-Cerrahpasa, Cerrahpasa Medical Faculty, Department of Emergency Medicine, Istanbul, Turkey. 2- Acibadem Maslak Hospital, Department of Radiology, Istanbul, Turkey.

ABSTRACT

At the end of December 2019, a fast-spreading outbreak had started due to a novel coronavirus in Wuhan city of Hubei, China. At first, patients who do not meet the disease’s criteria were accepted without COVID-19 but later we noticed that even these patients may have the disease. So, during the pandemic period, every patient must be assumed to have the disease and necessary preventive measures must be taken. In this case, we unexpectedly observed COVID-19 in an old patient who admitted to the emergency department with trauma.

ÖZET

Çin’in Hubei bölgesindeki Wuhan şehrinde 2019 Aralık aylarında hızlı bir şekilde yayılan bir salgın başladi. Başlangıçta hastalıktan korkulan hastalarda COVID-19 olmadığını kabul edildi ama daha sonra bu hastalarda bile COVID-19 olmadığını fark ettiler. Yani pandemi dönemi boyunca her hastada COVID-19 olmadığını varsaymaları ve gerekli koruyucu önlemler alınmamıştı. Bu vakamızda, acil servise trava trava nedeniyle başvuran yaşlı bir hastada beklenmedik bir şekilde COVID-19 tespit edildi.
The most common symptoms at the admission are fever (83%), cough (82%), and shortness of breath (31%) (5). Our patient symptoms were indistinguishable due to his underlying diseases, so it was hard to suspect from COVID-19.

A descriptive study made in Wuhan showed that COVID-19 pneumonia has typical CT findings even the patient is asymptomatic besides CT imaging could be very useful for early diagnosis if combined with clinical and laboratory assessment (6). These typical findings are nodular and peripheral multifocal ground-glass opacities which usually start from the posterior or lower part of the lung and air bubble, reversed halo or atoll sign and pneumothorax can be seen (7). Our case had bilaterally consolidations at lower lung lobes and pneumothorax can be seen (7). Our case had part of the lung and air bubble, reversed halo or atoll sign opacities which usually start from the posterior or lower part.

According to underlying diseases, the case fatality rate was 10.5% in cardiovascular disease, 7.3% for diabetes, 6.3% for chronic respiratory disease, 6.0% for hypertension, and 5.6% for cancer (9). Our case had three of these comorbidities that could have additional influence on his death.

Lymphopenia is very common and could be related to the cause of lung pathologies and mortality. According to underlying diseases, the case fatality rate was 10.5% in cardiovascular disease, 7.3% for diabetes, 6.3% for chronic respiratory disease, 6.0% for hypertension, and 5.6% for cancer (9). Our case had three of these comorbidities that could have additional influence on his death.

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Table 2: Laboratory values

| Days   | Day 1 | Day 3 | Day 5 | Day 11 | Day 13 |
|--------|-------|-------|-------|--------|--------|
| Condition | Moderate | Moderate-severe | Moderate-severe | Critical | Critical |
| Oxygen | 4 liter/min nasal | 4 liter/min nasal | 6 liter/min mask | 10 liter/min (rebreathing mask) | 10-12 liter/min (rebreathing mask) |
| SO₂ % | 93-94% | 91-92% | 90-91% | 88-90% | 84-85% |
| Treatment | Hydroxychloroquine (2x400 mg/day) then 2x200 mg/10 days) | Piperacillin 0,5 g/Tazobactam 4 g (3x1/13 days) | Azithromycin (2x250 mg/day) then 1x250 mg/4 days) | Enoxaparin sodium 0,6 mg 1x1 (13 days) | Ritonavir 50 mg/first day then 2x400 mg/first day then 2x600 mg/4 days) |
| | Oseltamivir (2x75 mg/5 days) | Ceftriaxone 1x1 gr (stop) | Favipiravir (2x1600 mg/first day then 2x600 mg/4 days) | Ceftriaxone 1x1 gr (2 days) |

Table 1: Clinical and Treatment Features

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Table 2: Laboratory values

| Day 1 | Day 3 | Day 5 | Day 11 | Day 13 |
|-------|-------|-------|--------|--------|
| White Blood Cell count/µl | 9800 | 9700 | 11100 | 8500 | 8600 |
| Neutrophils | 7300 | 8000 | 9300 | 8100 | 7800 |
| Lymphocytes | 500 | 500 | 500 | 200 | 300 |
| Monocytes | 900 | 1200 | 800 | 200 | 400 |
| Platelet Count (x 10⁹/µl) | 240.100 | 236.000 | 383.000 | 459.200 | 508.200 |
| Hemoglobin (g/dl) | 11.4 | 11.2 | 10.5 | 10 | 9.8 |
| Albumin (g/dl) | 3.43 | 3.22 | 2.94 | 2.83 | 2.45 |
| Alanine Aminotransferase (U/l) | 14.4 | 16.4 | 46.4 | 37.4 | 33.6 |
| Aspartate Aminotransferase (U/l) | 24.9 | 23.2 | 49.5 | 52 | 51 |
| Lactic dehydrogenase (U/l) | 219 | 186 | 209 | 236 | 350 |
| Creatinine (µmol/l) | 87 | 87 | 102 | 93 | 100 |
| Creatinine Kinase (U/l) | 149 | 263 | 444 | 595 | 522 |
| EGFR (ml/min/1.73 m²) | 76 | 76 | 63 | 70 | 64 |
| Troponin T (ng/ml) | 0.024 | 0.034 | 0.029 | 0.041 | 0.047 |
| INR (U/liter) | 1.12 | 1.19 | 1.25 | 1.28 | 1.22 |
| Prothrombin Time (sec) | 14.4 | 14.3 | 15 | 14.8 | 14.3 |
| Fibrinogen (g/l) | 576 | 576 | 576 | 374 | 346 |
| D-dimer (µg/ml) | 5.15 | 5.48 | 8.74 | 6.64 | 5.95 |
| Serum Ferritin (µg/l) | 301 | 269 | 310 | 424 | 475 |
| Prolactin (ng/ml) | 303 | 260 | 191 | 188 | 153 |

C-reactive protein (mg/dl) | 0.047 |

The most common symptoms at the admission are fever (83%), cough (82%), and shortness of breath (31%) (5). Our patient symptoms were indistinguishable due to his underlying diseases, so it was hard to suspect from COVID-19.
As antiviral therapy, any treatment has not been approved yet but there are several suggestions such as lopinavir/ritonavir (400/100 mg). However, it is not found beneficial compared to standard care through a recent randomized, controlled, open-label trial (13). An RNA polymerase inhibitor drug, favipiravir which is effective against influenza and Ebola virus infection is one of the options. A multicenter study demonstrated that favipiravir has effective results compared to umifenovir (14). For the high risk of thromboembolism in COVID-19 patients’ anticoagulation like enoxaparin is necessary during therapy (15).

We applied standard therapy according to our guideline provided by the Turkish Ministry of Health compatible with these reports. Additionally, we gave antibiotics because of high procalcitonin levels against secondary bacterial infections.

In a study with COVID-19 patients admitted to the intensive care unit in the area of Seattle the most common symptoms were shortness of breath and cough, the frequency of fever on admission was 50%, and the rate patients with a history of diabetes mellitus were 58%. Also, the main reason for ICU hospitalization was hypoxemic respiratory failure and hypotension (16). Our case mostly has similar clinical features.

In conclusion, even patients without a history of close contact with confirmed COVID-19 cases or travel/having been a resident of pandemic areas and apparent symptoms could have COVID-19 disease. So, during the pandemic period, every patient must be assumed to have the disease and necessary preventive measures must be taken.

Conflicts of Interest

The authors have no conflicts of interest to declare.

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