An Afebrile and Severe COVID-19 Case That was Admitted Before the First Case Report in Our Country

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Abstract

Typical symptoms in Coronavirus Disease-2019 (COVID-19) pneumonia are fever, cough and shortness of breath. These findings may not always coexist. Patients can apply with atypical or less common complaints. In the days when the disease had not been detected in our country, the diagnosis and treatment process of a COVID-19 case presenting with findings suggesting community-acquired lower respiratory disease is presented.

Keywords: COVID-19, afebrile, case, quantitative lung CT

INTRODUCTION

In the early stages of the Coronavirus Disease-2019 (COVID-19) pandemic, there were difficulties in detecting patients before a case report was made in a country. When epidemiological, clinical and laboratory data are not distinctive, patients may be overlooked or cannot be definitively diagnosed. If the patient is also a health worker, there is a risk that the disease will be transmitted to other employees and patients. In this context, the process experienced in a health worker who had been admitted and monitored on suspicion of atypical pneumonia will be discussed.

CASE PRESENTATION

Case

A 44-year-old female patient, whose complaints of weakness, anorexia, sweating, muscle joint pain and cough had started a week ago, was admitted on March 9, 2020 with a prediagnosis of lower respiratory tract infection. When examined three days ago, vital functions were found to be normal, crackles and increased density in the lower zones on Posteroanterior chest X-ray were observed. The infection parameters were as follows: White blood cell: 5.290/mm^3, PNL: 64%, and C-reactive protein (CRP): 9 mg/L (normal <5). Complaints of dry cough increased under outpatient clarithromycin 500 mg 2x1 treatment. It was understood from the detailed anamnesis of the patient, who worked as a staff in our hospital's infectious diseases clinic, that her complaints had started four days after her relatives from the Netherlands attended the funeral ceremony held in Antalya. There was no feature in her family history, it was learned that she had no additional disease and she took no medication continuously. Examination findings revealed the followings: Fever: 36 °C, pulse: 91/min rhythmic, respiratory rate: 18/min regular, diffuse crepitant rales in the middle lower zones in both hemithoraces. Other examination findings were normal. Piperacillin/tazobactam and oseltamavir were added to her treatment. Lung computed tomography (CT) was requested. One day later, the radiology clinic specialist verbally reported that CT findings were compatible with COVID-19. Diarrhea started on the 2nd day of her hospitalization. No pathogen was detected in stool microscopy and culture. In the first CT scan, crazy-

paving pattern characterized by diffuse patch-like ground-glass opacities and interlobular septal thickening were observed in all lobes of both lungs in the lower zones and peripheral areas suggesting a viral pneumonia. Due to progressive and unresolved clinical findings, it was rechecked with CT on the 3rd and 15th days of hospitalization. Hydroxychloroquine (Hq) 200 mg tbl 2x1 and lopinavir/ritonavir (LPV/r) 200 mg tbl 2x2 combined with nonspecific supportive therapy were initiated. Hq was given for 5 days and LPV/r for 14 days. She did not have any fever in the clinical course. On the 3rd day of treatment, an increase in the density of the infiltration areas and the diffusion of ground glass opacities were observed on control CT. Figures 1 a and b show the changes in lung parenchyma involvement during the disease process. Quantitative lung involvement volume was calculated. Total lung volume was 2932 cc, COVID-19 uptake volume was 665 cc, COVID-19/lung volume ratio was approximately 22.6% (Figures 2 a and b). The mean density of the COVID-19 uptake area was calculated to be -285 hounsfild units (HU) (normal -1000 HU).

The patient's complaints started to regress from the 7th day of hospitalization. The most challenging clinical finding was severe cough and shortness of breath. Bloody sputum was observed for two days. Supportive treatment was continued by providing nasal oxygen support and hydration. Normal flora bacteria grew in sputum culture, mycobacteria were not detected. Influenza A/B antigen was found negative in throat swab. Blood type was A Rh (-). Changes in the patient's specific laboratory values are shown in Table 1.

The patient was discharged on the 16th day of hospitalization. Although her cough complaint decreased when she was discharged, it continued. The throat-nose swab polymerase chain reaction (PCR) test taken on the 9th day of the complaints was found to be negative, and the rapid antibody test for immunoglobulin G (IgG) and IgM performed on the 17th day was found to be strongly positive (Figure 3). The positivity of second PCR test performed on the 10th day of her complaints was learned long after she was discharged, since the result of the test was delayed. Although the patient was a clinical staff, no illness
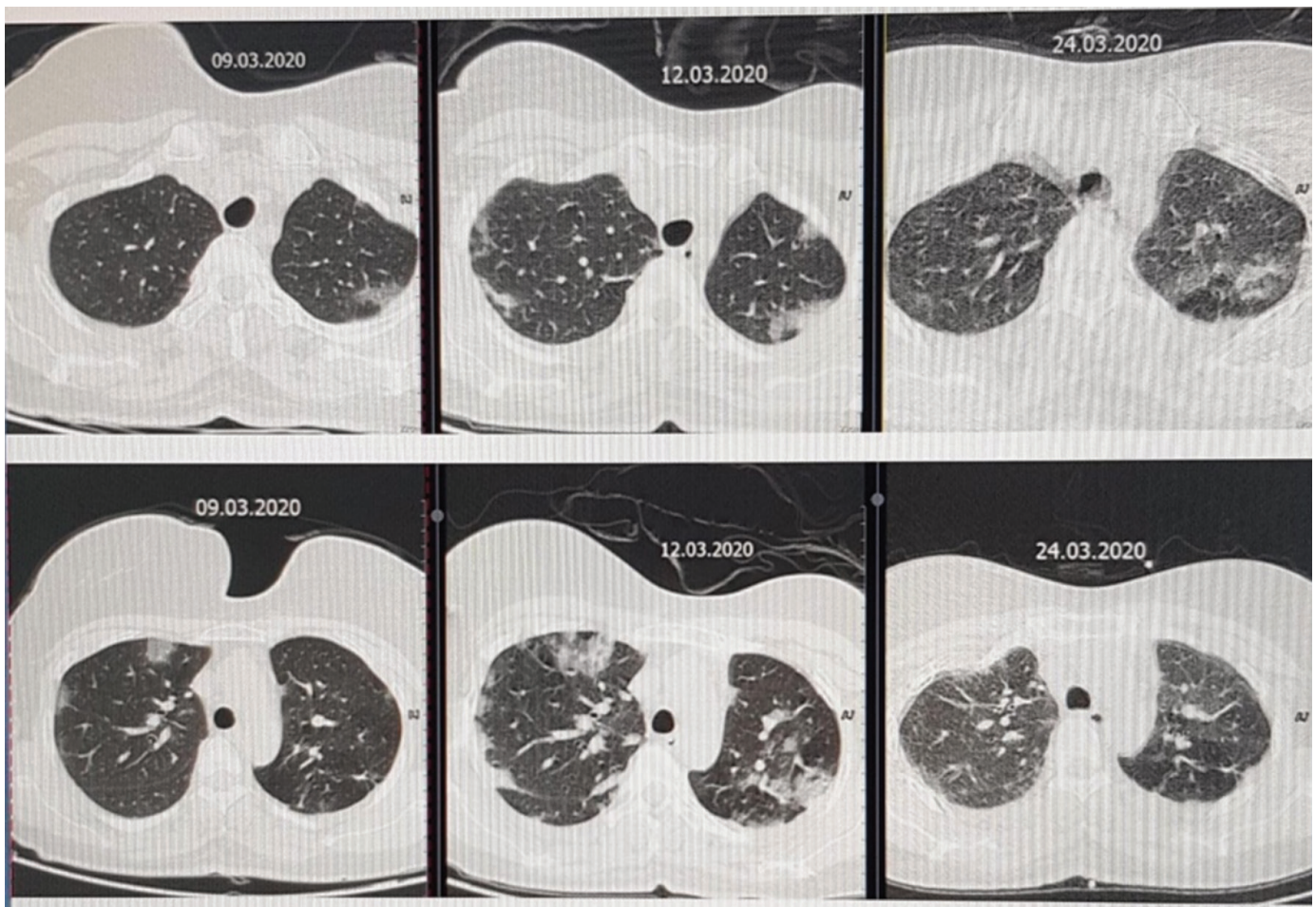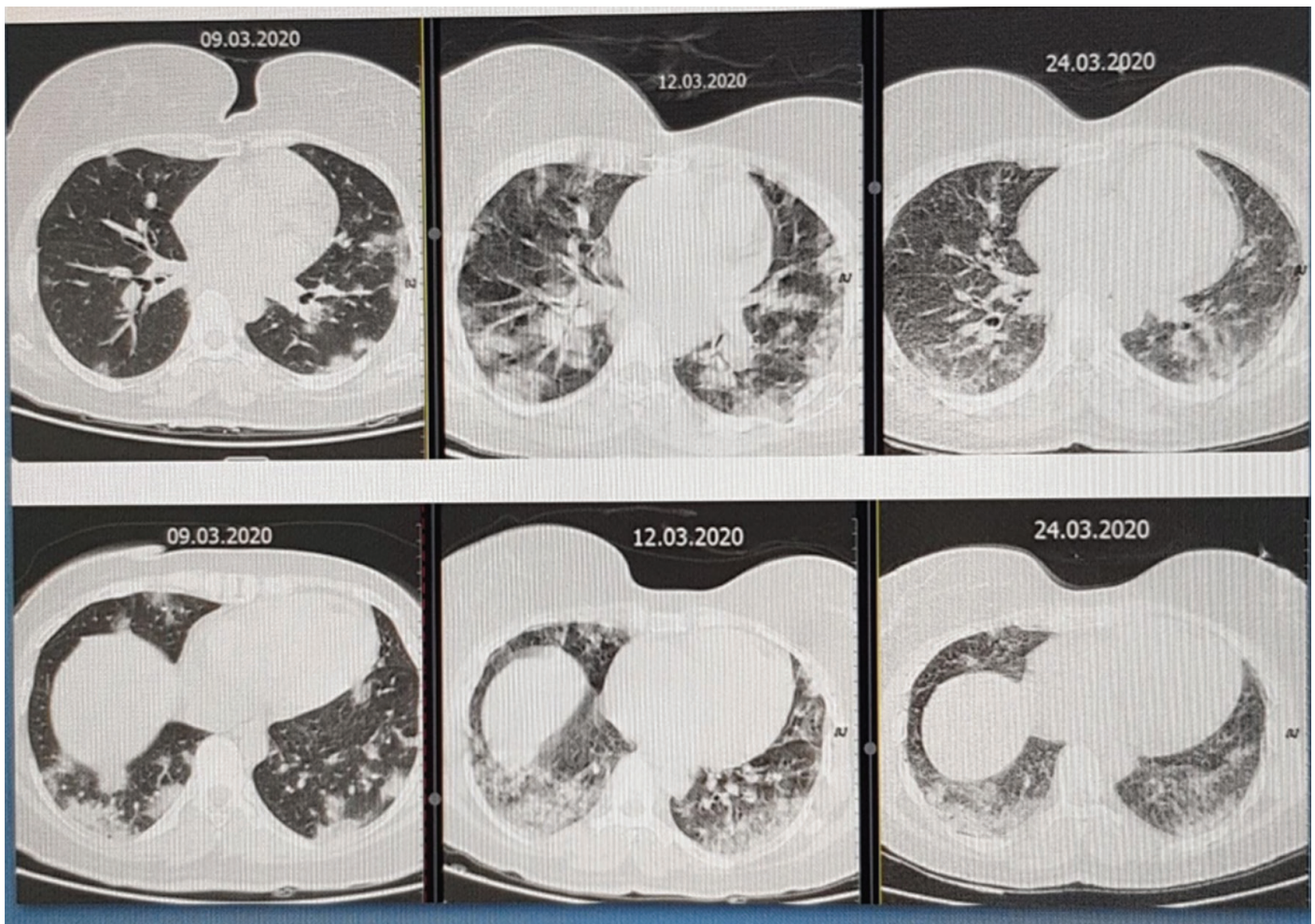

Figure 1a. Appearance of pneumonic involvement in different axial sections in lung CT performed at three different dates during the disease process
CT: Computed tomography

Yıldırmak et al. A case of afebrile COVID-19

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| Table 1. Change in the patient's laboratory values				
Laboratory finding (normal range)	First admission (4th day*)	Hospitalization (7th day)	Maximum value	Discharge (20th day)
WBC (3.8-10 10^3/μL)	5.29	5.14	6.91	5.64
Lymphocyte (1.18-3.74 10^3/μL)	1.17	1.44	2.40	2.09
Hgb (115-155 g/L)	125	121	101	111
Platelet (150-400 10^3/uL)	257	204	473	417
CRP (<5 mg/L)	9	88	148	3.5
Sedimentation (1-15 mm/h)		37		
Procakitonin (<0.12 μg/L)		<0.12	2.6	<0.12
D-dimer (80-500 μg/L)		797	5950	5950
Fibrinogen (2-4 g/L)		3.87	3.61	
INR (08-1.2)		0.93	1.1	
LDH/ALT/AST (<248/0-50/<35 U/L)	188/36/31	344/38/51	450/61/51	325/61/39
Creatin Phosphokinase (CPK) (0-145 U/L)	68	130	488	53

*The number of days refers to the duration of symptoms

WBC: White blood cell, Hgb: Hemoglobin, INR: International normalized ratio, LDH: Lactate dehydrogenase, ALT: Alanine aminotransferase, AST: Aspartate transaminase, CRP: C-reactive protein

**Figure 1b**. Appearance of pneumonic involvement in different axial sections in lung CT performed at three different dates during the disease process
CT: Computed tomography
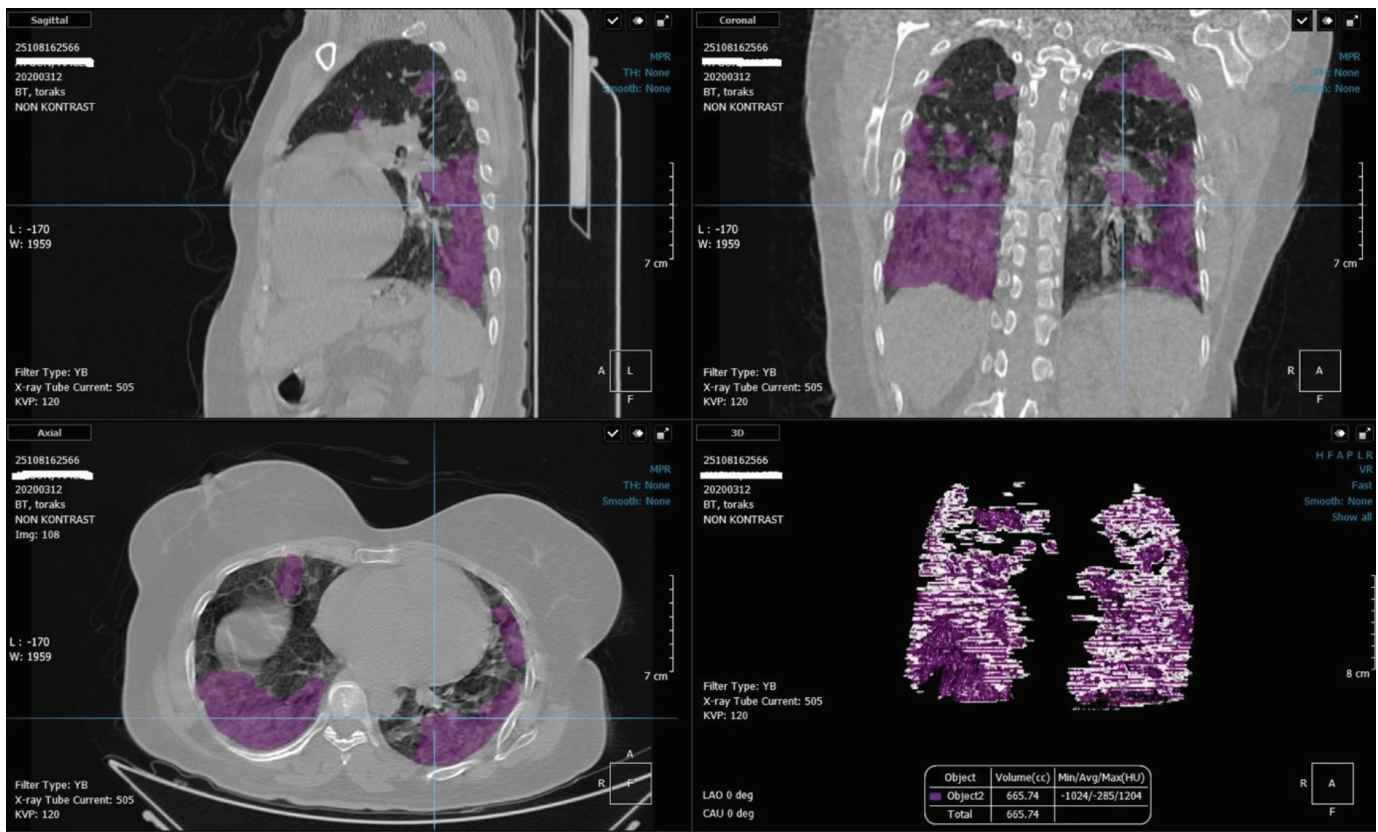
Figure 2a. Volumetric evaluation of areas affected by COVID-19 on lung CT shown in purple

COVID-19: Coronavirus Disease-2019, CT: Computed tomography
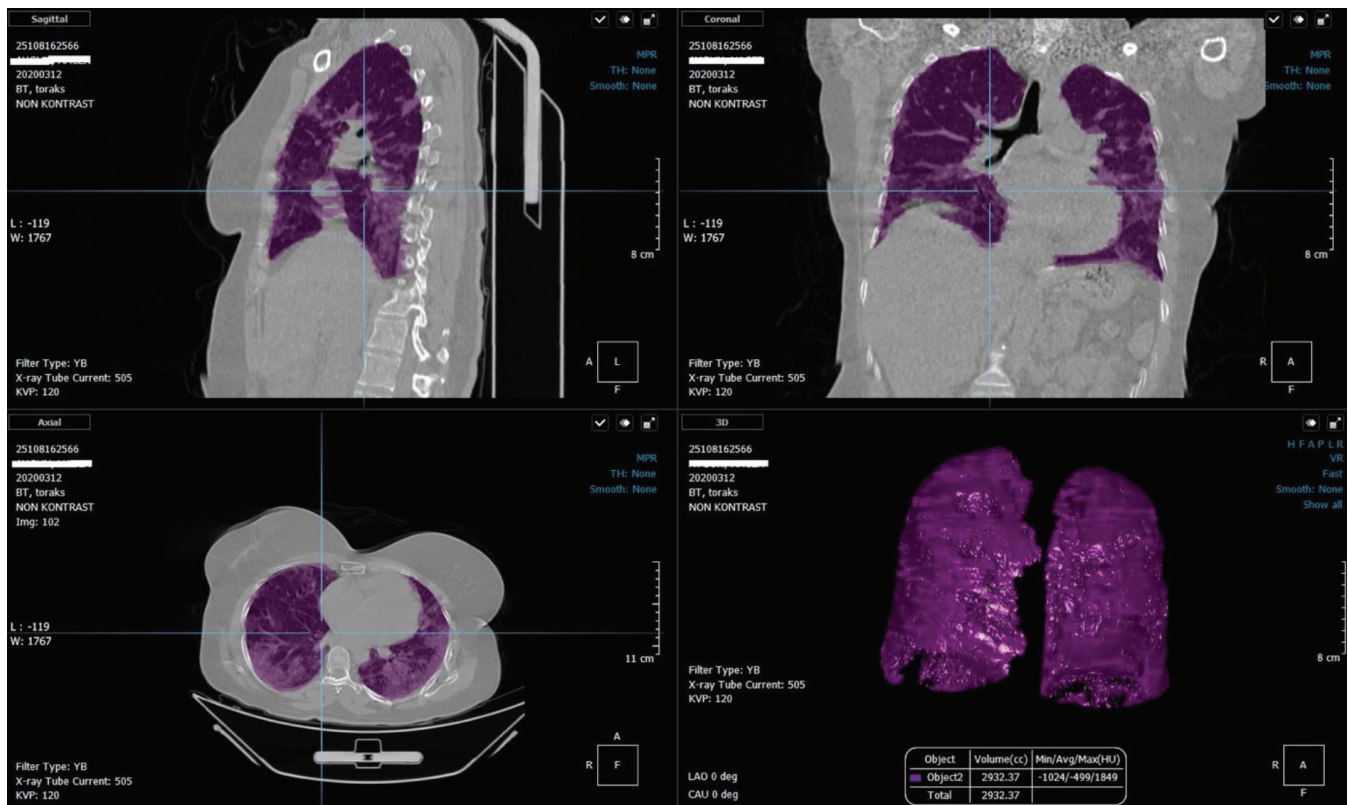
Figure 2b. Color image of the patient's entire lung volume

Yıldırmak et al. A case of afebrile COVID-19

Eur Arch Med Res 2020;36(Suppl 1):72-6
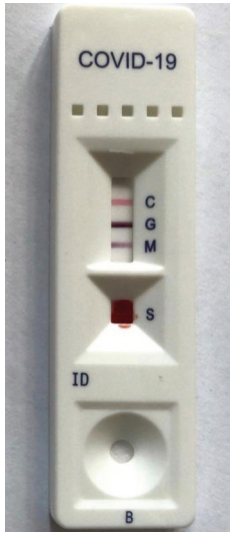
Figure 3. COVID-19 IgG and IgM positivity detected in the whole blood antibody test on the 17th day of symptoms

COVID-19: Coronavirus Disease-2019, IgG: Immunoglobulin G, IgM: Immunoglobulin M

was found in other healthcare workers who worked together in the same environment, and her written consent was obtained from her for this case report.

DISCUSSION

Among the symptoms at first admission in patients with COVID-19, fever is detected at a rate of 43.8% and increases to 88.7% after hospitalization. Cough takes the second place with a rate of 67.8%, and diarrhea may occur less frequently in 3.8% (1). Our patient had a very severe and persistent cough, but body temperature was always found to be normal. In the laboratory tests, the most striking increase was seen in D-dimer, accompanying low fibrinogen was not detected. The mild lymphopenia observed at the beginning gradually returned to normal. The increase in CRP was remarkable, the increase in procalcitonin was mild and short-lived. During clinical follow-up, serum D-dimer, CRP, lactate dehydrogenase, and creatin phosphokinase values increased to levels of severe disease. At the first admission of the patient, COVID-19 was diagnosed due to the clinical findings as well as supportive lung CT findings. There is increasing data stating that quantitative measurement of pneumonia involvement volume and rate and pneumonia density in units of HU will have clinical prognostic value in patients with COVID-19 (2). In our patient, there was widespread involvement in the cross-sections in thorax CT findings in addition to persistent and severe clinical findings. Later, it was understood that the calculated volumetric involvement was low at 22.6% and the mean

HU value of the pneumonic areas was not at the level of severe pneumonic score. The patient's first Severe Acute Respiratory syndrome-coronavirus-2 PCR test was negative. In addition to the positive rapid antibody test, the diagnosis was confirmed by excluding other reasons. Although PCR is deemed necessary in the definitive diagnosis of COVID-19, it is known that it is not always sufficient on its own and does not rule out the disease. Antibody tests taken at the appropriate period are supportive of the diagnosis (3). The sensitivity and specificity of the rapid diagnostic antibody test (Healgen®) we used were predicted to be 97.2% and 100% for IgG, 87.9% and 100% for IgM.

CONCLUSION

This patient was initially diagnosed as having COVID-19 with radiological findings and rapid antibody test and it was learned that repeated PCR test was positive in the late period. The evaluation of laboratory tests together considering clinical compliance is guiding in the early differential diagnosis of COVID-19.

Ethics

Informed Consent: Written consent was obtained from the patient for this case report.

Peer-review: Internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: M.T.Y., K.H., S.K., M.O., Concept: M.T.Y., Design: M.T.Y., Data Collection or Processing: M.T.Y., K.H., S.K. D.K., Analysis or Interpretation: M.T.Y., K.H., S.K., Literature Search: M.T.Y., Writing: M.T.Y., S.K.

Conflict of Interest: No conflict of interest was declared by the authors.

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