

# Recurrence of COVID-19 Documented with RT-PCR

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## ABSTRACT

We present a case of coronavirus disease 2019 (COVID-19) re-infection where the time interval between two COVID-positive episodes is the longest in the literature. A 40-year male patient was admitted to the Emergency Department with complaints of sore throat, cough and diarrhea; and was re-diagnosed as COVID-19 positive after a virus-free period. He did not have a chronic disease in his anamnesis and used no medication. After COVID-19 infection and a long recovery period, he became COVID-19 positive again. In this case, the time to second COVID-19 infection was 94 days from the first positive PCR test and 86 days from the complete resolution of symptoms. This is one of the longest COVID-19-free period between two episodes of infection in the literature.

**Key Words:** COVID-19, Recurrence, Re-infection, Recovery.

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## INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a viral illness caused by infection with the Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a coronavirus strain. Before spreading globally, the initial patients were detected in Wuhan, China, in December 2019, and now over 25 million confirmed cases have been identified.<sup>1</sup> Covid-19 was officially declared pandemic by the World Health Organization (WHO) on March 11, 2020.<sup>2</sup> In April 2020, the first cases of repeat positive COVID-19 PCR tests after recovery from COVID-19 infection were reported from South Korea. Here, we report a case of a patient with PCR-confirmed COVID-19, who experienced re-infection after negative PCR testing. To the best of authors' knowledge, this report is novel in the literature as it describes a recurrence of COVID-19 in an apparently cured COVID-19 patient in Turkey. In addition, it is the case of COVID-19 re-infection, where the time interval between two COVID-19-positive episodes in a patient is one of the longest in the literature.

## CASE REPORT

A 40-year male patient presented to the Emergency Department (ED) with fever and cough on April 9, 2020. Vital signs were normal except for 37.3°C temperature at admission.

There was no chronic disease in his anamnesis and he did not use any medication. There was no significant pathology on chest computed tomography (CT) (Figure 1). The reverse transcription-polymerase chain reaction (RT-PCR) performed on a sample collected from a nasopharyngeal swab, collected on April 9, was positive for SARS-CoV-2. He was started on the standard hydroxychloroquine regimen (400 mg twice on the 1st day, then 400 mg on the 2nd-5th days, daily) and was discharged with self-isolation recommendations. In the subsequent follow-up of the patient, two separate swabs collected on April 16 and 23 showed no evidence of SARS-CoV-2 infection and the patient's complaints were completely resolved.

On 12 July, 2020, the patient presented to another hospital with sore throat, cough and diarrhea. The nasopharyngeal swab taken from the other hospital on 12 July was found positive for SARS-CoV-2. The patient was transferred to this hospital, which is a pandemic hospital, on July 13, when the test result was released. The patient's complaints of sore throat, cough and diarrhea were continuing. Vital signs measured at the time of admission showed temperature as 37.9°C, pulse 77/min, blood pressure 100/80 mmHg, oxygen saturation 98% on room air. Bilateral ground glass shadows were observed on chest CT (Figure 2). Laboratory tests including liver function tests, renal function tests, myocardial enzymes and electrolytes were normal except white blood cells, which were  $3.7 \times 10^3/\mu\text{L}$  (Normal range:  $4.8\text{--}10.8 \times 10^3/\mu\text{L}$ ); and platelet count, which was  $100 \times 10^3/\mu\text{L}$  (Normal range:  $130\text{--}400 \times 10^3/\mu\text{L}$ ).

The patient was admitted to hospital and was treated with hydroxychloroquine (400 mg b.i.d on the first day, and then 200 mg b.i.d for 6 days), enoxaparin, 4000 IU bd., and moxifloxacin (400 mg for 7 days). On the 8th day of treatment, the patient's complaints completely resolved, and he was discharged with

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