

# Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection after allogeneic stem cell transplantation.

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## Abstract

This is the first report of a case of COVID-19 after allogeneic stem cell transplantation. Our case suggests that COVID-19 may exist without characteristic CT images, especially in immunocompromised hosts, such as patients after transplantation.

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Key Clinical Masseur: This is the first report of a case of COVID-19 after allogeneic stem cell transplantation. Our case suggests that COVID-19 may exist without characteristic CT images, especially in immunocompromised hosts, such as patients after transplantation.

Key words:COVID-19,Allogeneic transplantation,malignant lymphoma

Introduction:

Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is the novel coronavirus first detected in Wuhan, China. The virus causes coronavirus disease 2019 (COVID-19). Over 1000000 cases of COVID-19 have been confirmed worldwide.<sup>1</sup> Here, we report the first case of COVID-19 after allogeneic stem cell transplantation.

Case Examination:

A 61-year-old male with diffuse large B cell lymphoma transformed from follicular lymphoma underwent peripheral blood stem cell transplantation (PBSCT) from his HLA haploidentical daughter. He underwent de-escalation of immunosuppressant drugs because of early relapse after PBSCT. The duration of chronic graft-versus-host disease (GVHD) was extended, but he did not need additional therapy. At day 205 after PBSCT, he had a fever of 100°F and a wet cough. He visited our hospital because his symptoms persisted for two days. He had not traveled to a foreign country nor had contact with anyone with COVID-19. His chest X-ray showed no apparent bacterial pneumonia, and a CT scan showed only small nodules that were diagnosed as scar tissue from past organizing pneumonia and pleural effusion (figure 1). Although he was

radiographically atypical for COVID-19, a COVID-19 PCR test was performed on a nasopharyngeal swab. Laboratory tests showed leukopenia (WBC 1000/ $\mu$ l), neutropenia (ANC 20/ $\mu$ l), a high procalcitonin level (8.94 ng/ml), and a high CRP level (26.3 mg/dl). He was hospitalized and started taking antibiotics with a diagnosis of community-acquired pneumonia. PCR was positive the day after hospitalization. By the ninth day in the hospital, his respiratory condition had not worsened.

#### Discussion:

Currently, COVID-19 is spreading around the world. It has been reported that there are typical COVID-19 imaging patterns on chest CT. Chinese researchers revealed bilateral lung opacities on chest CT in COVID-19 patients and described lobular and subsegmental areas of consolidation as the most typical findings.<sup>2</sup> Another study found that the hallmarks of COVID-19 on imaging were bilateral and peripheral ground-glass and consolidative pulmonary opacities.<sup>3</sup> However, in our patient, we did not find typical findings on CT. This is the first report of a case of COVID-19 after allogeneic stem cell transplantation. Absence of the characteristic imaging features might be related to leukopenia or immunosuppression. Our case suggests that COVID-19 may exist without characteristic CT images, especially in immunocompromised hosts, such as patients after transplantation.

#### Conclusion:

Although there are many unclear points about COVID-19, there may not have shown typical images, and it is important to note the possibility of infection, especially in immunocompromised patients.

#### Authorship

TO: managed the patient and wrote the manuscript.

FI, AO, and AY: reviewed the manuscript.

#### Conflict of interest

None declared.

#### Figure legend

1-A) Chest CT findings. Organizing pneumonia was observed in both upper lobes.

1-B) Chest CT findings. Bilateral pleural effusion was present.

#### References

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Figure 1-A



Figure 1-B