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CASE REPORT

Occasional Diagnosis of Acute Myeloid Leukemia Due To SARS-COV 2 Infection

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Abstract

Objectives: To describe a patient with SARS-CoV-2, who was diagnosed with acute myeloid leukemia M3. **Case Report:** Patient, 12 years old, female, started with bruises in the lower limbs and pain in the left leg; however, in the face of the current pandemic, the patient was delayed in seeking medical help due to fear of contamination by SARS-CoV-2. After 1 month she presented fever, runny nose, and cacosmia. She sought medical assistance for apprehension of being infected with the new coronavirus due to the fact that the mother is a health professional. The child was admitted to the emergency room, with leukopenia, thrombocytopenia, and positive COVID-19. She remained hospitalized for 8 days in the hospital of entry. Initially, it was suspected of idiopathic thrombocytopenic purpura; however, with the evolution of the case it suggested the diagnostic possibility of oncological disease. She was transferred to a specialty hospital, where she was diagnosed with acute myeloid leukemia subtype M3. After diagnosis, tretinoin associated with platelet transfusion and cryoprecipitate and subsequent chemotherapy with idarubicin was started. **Conclusions:** It can be analyzed that, in the face of the SARS-CoV-2 pandemic, many diseases can arise together with the viral infectious condition. On the other hand, we cannot fail to consider that in view of the current epidemiological and behavioral changes, the diagnosis, treatment, and prognosis of previously existing diseases that, in due course, coexist with SARS-CoV-2 infection, can be postponed, due to the fear and due to the difficulty of accessing the health system.

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INTRODUCTION

SARS-COV2, a hitherto unknown disease caused by the coronavirus that triggers acute respiratory failure and other systemic impairments was first described in December 2019 in China.¹ In a few months, however, due to the high level of transmissibility and dissemination, it would be the cause of a new pandemic.²

Faced with this serious public health problem of an international nature, all countries must take measures to curb the spread of the virus. These include the availability of tests, hospital efforts, isolation of suspected cases, and broader measures of social distancing.³

Children of all ages are susceptible to COVID-19, and there was no significant difference between sexes.⁴ Children are not usually the target population of this pandemic, but they are at risk of being among the main victims. Although they have been largely spared the direct health effects of COVID-19 - at least so far - the crisis is profoundly affecting their well-being.⁵

It is in this context of controlling the mobility of people, and the scarcity of hospital resources, reallocated to meet the needs of those infected with COVID-19 in critical conditions; that patients with comorbidities had a great impact on the assessment and treatment of their underlying diseases. In addition, patients' anxiety and fear regarding the new virus is a contributing factor to the delay in diagnosis.⁶

Thus, the present study aims at contributing to the understanding of the new consequences that a pandemic can promote in the diagnosis, management and treatment of diseases that in usual situations are identified, conducted and treated in a different way. It also seeks to infer that the stress and anguish caused by the possibility of infection by SARS-COV2 can either help or delay the diagnosis of serious diseases.

CASE REPORT

This is a 12-year-old female patient, previously healthy, who started in April this year with the mild diffuse bruises without other associated symptoms. About 10 days after the onset of the hematomas, the patient developed pain in the distal hip-femoral region to the left, with worsening compression and difficulty walking. On May 20, around 30 days after the onset of the initial condition, she presented a runny nose and nasal obstruction associated with cacostmia.

The patient took approximately 1 month to seek medical help due to fear of contamination by SARS-COV2 in the face of the current pandemic. Interestingly, when she sought the health service, the motivation was due to the fear of having been infected with the new corona virus, since her mother, a healthcare professional, was suspected of being infected with SARS-COV 2.

Thus, on May 20, she was admitted to a Secondary Hospital located in the city of São Paulo, where laboratory tests were performed, which showed leukopenia and thrombocytopenia.

The patient remained hospitalized from 05/21 to 05/28. On May 23 she started with a persistent fever. During hospitalization, she developed progressive leukocytosis with lymphocytic atypia and persistent thrombocytopenia. Clinically, the patient persisted with bruises, daily fever and pain in the left lower limb. Initially, it was suspected that the condition could be an Idiopathic Thrombocytopenic Purpura; however, with the evolution of the case and the involvement of different hematological lineages, we suspected she had an oncological disease.

In view of the evolution presented, on May 28, she was transferred to a specialty hospital for hemato-oncological evaluation. On this occasion, she was diagnosed with Acute Myeloid Leukemia by peripheral blood analysis. After diagnosis, she was started on chemotherapy and support treatments. Tretinoin (ATRA) 25 mg/m²/day was started and she was transfused with platelets and cryoprecipitate. On May 30, she received an immunophenotyping diagnosis confirming she had subtype M3 AML, and she was subsequently transferred to a pediatric ICU due to the risk of bleeding due to the underlying pathology. On the same day, chemotherapy with idarubicin was started. The patient achieved clinical stabilization, disease control and remains in follow-up with the hematology and oncology team of this Specialty Hospital.

Comments

Given the scientific knowledge that we have at our fingertips, we can infer that the SARS-COV-2 infection may be an immunosuppression factor, especially in ALL and lymphomas. On the other hand, chemotherapy treatment interferes with the immune response capacity of patients, and infection is the most frequent complication associated with cancer and its treatment, being the main cause of death other than the neoplasm itself.⁷

According to Lu et al. of the 1391 children evaluated and tested from January 28 to February 26, 2020, a total of 171 (12.3%) were confirmed as having the SARS-CoV-2 infection. Among these, 1 had leukemia, and was already undergoing chemotherapy. It further states that in contrast to infected adults, most infected children appear to have a milder clinical course of the disease.⁸

Based on the case report above, it was possible to analyze that, in view of the current pandemic caused by SARS-COV 2, many diseases may appear concomitantly with the viral infection. On the other hand, we cannot fail to consider that, given the current epidemiological and behavioral changes, the diagnosis, treatment and prognosis of previously existing diseases, such as cancers, which opportunely coexist with SARS-COV2 infection, may be postponed, by fear of exposure to the virus and by the difficulties in accessing the healthcare system.

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