

CASE REPORT: MALIGNANT ISCHEMIA OF THE MIDDLE CEREBRAL ARTERY AFTER COVID-19

Bruna Scheller Zuccoli

Universidade do Vale do Itajaí (UNIVALI)
Itajaí, SC
<http://lattes.cnpq.br/8355738126444363>

Bruno Ribeiro Zuccoli

Hospital do Coração de Londrina
Londrina, PR
<http://lattes.cnpq.br/6703935748584296>

Gislaine Antunes Rodrigues

Hospital Universitário Regional dos Campos
Gerais - Wallace Thadeu de Mello e Silva
Ponta Grossa, PR
<http://lattes.cnpq.br/0189859251264343>

Bruno Martins Ferreira de Andrade

Hospital do Coração de Londrina
Londrina, PR
<https://lattes.cnpq.br/8450086474393760>

José Guilherme Amorin

Hospital do Coração de Londrina
Londrina, PR
<http://lattes.cnpq.br/7112285129986067>

Gianfelipe Belini Polisel

Hospital do Coração de Londrina
Londrina, PR
<http://lattes.cnpq.br/4021422302430643>

Bruna Rosado Costa de Andrade

Pontifícia Universidade Católica do Paraná
(PUC-PR)
Londrina, PR
<http://lattes.cnpq.br/0825854852421510>

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Ana Luisa Henning

Universidade do Vale do Itajaí (UNIVALI)
Itajaí, SC
<http://lattes.cnpq.br/4924637770125368>

Carolina da Silva Terragno

Universidade do Vale do Itajaí (UNIVALI)
Itajaí, SC
<http://lattes.cnpq.br/6090348766228463>

Igor Andrade Vasconcelos

Hospital do Coração de Londrina
Londrina, PR
<http://lattes.cnpq.br/0402051398949970>

Abstract: Introduction:In December 2019, the Covid-19 pandemic began, a potentially serious respiratory infection whose etiology is a coronavirus. SARS-COV-2 draws attention due to its ability to generate diverse multisystemic clinical manifestations. Stroke is the second leading cause of death in the world, however, even with evidence of an increase in the incidence of cases, there has been a lower demand for emergency care units for this reason since the beginning of the Covid-19 pandemic. The pathophysiology of Covid-19 includes thromboembolic mechanisms that may possibly be related to the etiology of the stroke. **Objective and case report:** This study aims to report the case of a 55-year-old male patient without comorbidities who presented with malignant ischemia of the middle cerebral artery after hospitalization for Covid-19. The methodology of the work consists of a case report based on a retroactive analysis of medical records, as well as a review of the literature on the subject. **Conclusion:** There are described cases of stroke during Covid-19 and there is a similarity between the pathophysiological mechanisms of the two diseases, but the medical literature still lacks studies that prove or contest this relationship. **Keywords:** Ischemic stroke; COVID-19; SARS-COV-2.

INTRODUCTION

On December 31, 2019, the Covid-19 pandemic began, a potentially serious respiratory infection whose etiology is a coronavirus. SARS-CoV-2 draws attention due to its ability to generate several multisystemic clinical manifestations, including cerebrovascular accident (CVA). This pathology, which was already the second leading cause of death in the world, has shown an increase in the incidence of cases related to infection by the SARSCOV-2 virus since the beginning of the Covid-19 pandemic.

CASE REPORT

A 55-year-old male patient with no comorbidities was admitted 10 days after the diagnosis of Covid-19 by RT-PCR method due to worsening breathing pattern and associated pulmonary thromboembolism. After a few hours of hospitalization, he evolved with a lowering of the level of consciousness, and was then submitted to sedation and orotracheal intubation. In the neurological exam, before intubation, the patient was right hemiplegic, aphasic, rapidly evolving to Glasgow 3 and anisocoria on the left. A computed tomography scan of the skull was performed, which showed malignant ischemia of the middle cerebral artery. From that moment on, the patient already presented with bilateral mydriasis and a protocol for brain death was initiated.

DISCUSSION

The new coronavirus, SARS-Cov-2, in addition to causing acute respiratory disease in humans, has been shown to be capable of coursing with several neurological symptoms, including cases of acute cerebrovascular diseases (WANG et al, 2020).

The number of patients with acute cerebrovascular disease ranges from 0.5% to 5.9% of those infected with COVID-19, with ischemic stroke being the most common event (0.4% to 4.9% of cases). The risk of stroke varies according to the severity of COVID-19. Early studies suggest that for patients with mild disease, the risk is <1%, while for patients in intensive care, the risk can reach 6% (QURESHI et al, 2020). This is because in addition to the classic risk factors for cerebrovascular disease in COVID-19, there is a generalized microangiopathy associated with a state of hypercoagulability that causes capillary, venous and/or arterial thrombosis

not only in the central nervous system (CNS) but also in other target organs. The pathogenesis is not completely understood and it is believed that the thrombotic events may be due to cytokine storm, hypoxic injury,

Since the middle cerebral artery is one of the main intracranial arteries, it is an important site of thrombus formation and ischemia, but studies pointing out which are the main sites of ischemia in strokes associated with COVID-19 are still scarce (ALMALLOWHI et al, 2020).

Regarding the management of cases, it is very similar to that of stroke patients, but precautions related to infection control are necessary (DAFER et al, 2019).

Evaluation for intravenous thrombolytic therapy and mechanical thrombectomy must be performed for patients with acute stroke, with or without COVID-19. There may be an increased risk of reocclusion after initial recanalization in patients with COVID-19, potentially related to infection-associated hypercoagulability (DAFER et al, 2019).

CONCLUSION

There are described cases of stroke during Covid-19 and there is a similarity between the pathophysiological mechanisms of the two diseases, but the medical literature still lacks studies that prove or contest this relationship.

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