



Research Paper

Cerebral thrombophlebitis and covid-19

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I. INTRODUCTION:

Coronavirus is a severe Acute Respiratory Syndrome (SARS-CoV2) was documented in Wuhan, China on January 7, 2020 by the Chinese Center for Disease Control and Prevention in a nasopharyngeal swab of a patient with atypical pneumonia. [1] The death rate of patients with COVID-19 is high, indeed acute cardiac injury, acute kidney injury, and thromboembolic events have been increasingly reported independently of pulmonary or respiratory symptoms. [1-5]

Recent studies have reported the potential development of a hypercoagulable state in COVID-19 infection. [2,3,6,7] Viral infections can promote endothelial cell dysfunction, leading to excess thrombin and inhibition of fibrinolysis. [8-10] In addition, hypoxemia is associated with an increase in blood viscosity and the activation of hypoxia-related genes that are involved in coagulation and fibrinolysis, promoting thrombotic events. [11, 12] This septic-like coagulability may further lead to venous thrombosis, pulmonary embolism, and ultimately disseminated intravascular coagulation. [3,4]

We report a case of a patient with COVID-19 who presented with a stroke due to cerebral venous thrombosis.

II. OBSERVATION:

This is a 30-year-old patient with a history of asthma under treatment and the notion of two spontaneous miscarriages.

The patient presented with fever and respiratory discomfort revealing a COVID-19 infection, examination found a patient with a fever at 39 ° C, polypneic at 28 c / min, 95% of saturation with oxygen in free area , hemodynamically stable without other associated signs.

The biological exploration revealed lymphopenia at 900 / mm³, normal hemoglobin level at 13 g / dl, protein c reactive at 135, ferritinemia at 400, blood glucose at 1.06, normal renal function and hepatic function with a urea at 0.3 a creat at 7 ALT at 37 ASAT at 36, a normal hemostasis assessment with a PT at 80% and a TCK at 32s (patient / control = 0.8) and a COVID PCR -19 positive.

The patient was put on treatment according to the protocol of the Moroccan Ministry of Health: hydrochloroquine 500 mg twice a day for 10 days and Azithromycin 500 mg per day for 7 days.

The evolution was marked by the improvement of the patient's clinical condition and normalization of the biological assessment with negation of the control PCR.

The patient was declared discharged after 12 days of hospitalization. 24 hours after discharge, the patient presented with a sudden onset stroke with partial seizures.

The examination found a conscious patient with a Glasgow score of 15 / 15th, aphasia and right hemiplegic with stiff neck.

Cerebral MRI was performed showing subacute cerebral thrombophlebitis extended to the sigmoid and right lateral sinuses (figure 1).

in the biological assessment: CBC: Hb at 11g / dl a platelet count at 250 G/L and GB at 9000 / mm³

hemostasis assessment: PT 95% TCK at 34 (patient / control ratio = 0.9)

renal workup: urea: 0.4 creat: 7

liver function tests: ALT: 35 ASAT: 36

thrombophilia assessment: protoC, ProtS, Antithrombin III, Leyden factor V mutation negative.
 Immunological assessment is normal (AAN, ANCA, RF)
 the patient was put on anticoagulant treatment based on low molecular weight heparin and anti-vitamin K with anti-epileptic treatment and motor physiotherapy sessions with progressive improvement.

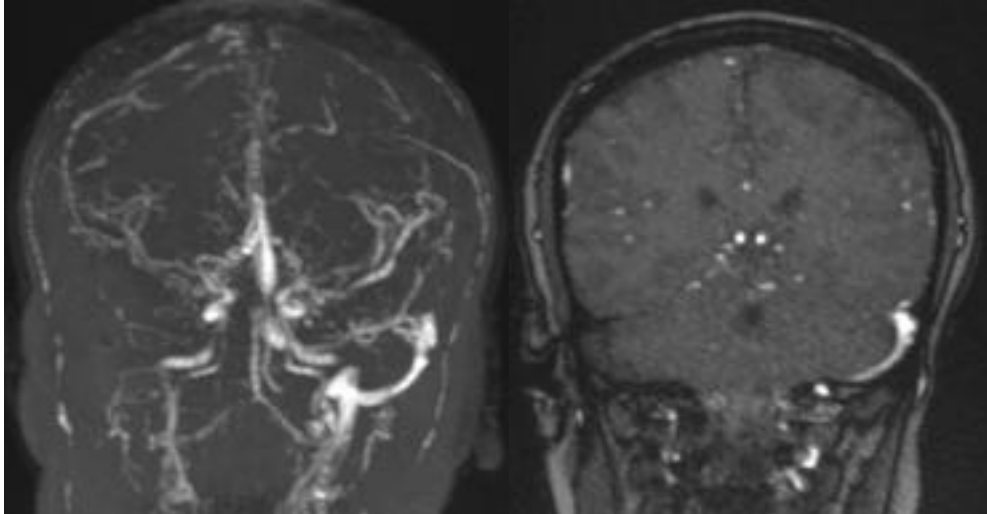


Figure 1: Subacute cerebral thrombophlebitis extended to the sigmoid and right lateral sinuses

III. DISCUSSION:

COVID-19 infection is an emerging disease and knowledge within the scientific and clinical community is increasing, but gaps persist in collective understanding. While COVID-19 is primarily a disease with respiratory manifestations [13], there are increasing reports of cardiovascular and thrombotic complications that are important for clinicians to be aware of. It is known that during infection with COVID-19, there is a pro-inflammatory immune response, the severity of the inflammation matches the severity of the clinical situation, and high levels of inflammatory processes are associated with a hypercoagulable state. Coagulopathy has been observed in similar diseases [14], including acute respiratory distress syndrome (SARS) and Middle East respiratory syndrome (MERS), caused by the coronaviruses SARS-CoV and MERS-CoV respectively [15].

Expert consensus suggests that prophylactic treatment with LMWH should be considered during admission and for 7 to 14 days after hospital stay for patients with COVID-19. Clinicians should consider treatment dose options during admission and after hospital stay for patients with multiple risk factors [16–20].

Cerebral venous sinus thrombosis (CVTS) accounts for only 0.5 to 1% of strokes. It can exhibit a wide range of clinical spectra primarily affecting younger patients, with a female to male ratio of 3: 1, indicating significant female preference [21]. There are hereditary and acquired risk factors for CVTS. In this case, hereditary causes were considered unlikely due to age and the absence of previous thrombotic events. Acquired causes include brain tumors, head trauma, and local infection of the central nervous system, none of which was present in this patient. A prothrombotic condition is a risk factor for CVTS and this patient was positive for COVID-19. With the emerging evidence of thrombotic complications and prothrombotic conditions in COVID-19, we conclude that COVID-19 was the risk factor precipitating this episode of CVTS.

IV. CONCLUSION:

An unusual presentation with cerebral venous thrombosis in previously healthy young patients infected with SARS-CoV-2 has been demonstrated. No conclusion can be drawn other than this, these cases provide evidence that COVID-19 is a serious contributor to hypercoagulation, increasing mortality from the disease.

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