

*Clinical case***Multifocal ischemia complicating covid-19 infection**

Ischémie multifocale compliquant une infection par le covid-19

M Camara¹, KA Mbaye*², MS Diop¹, R Diagne², AG Diop², AG Ciss**Abstract**

Introduction: Covid 19 infection is a serious pathology that can be life threatening in the short term due to its many complications.

Patient: We report the observation of a 61-year-old patient without a cardiovascular risk factor admitted for management of a multifocal ischemia occurring two weeks after a covid 19 infection. He underwent surgical management, effective anticoagulation and the evolution was favorable.

Conclusion: covid 19 is life threatening due to its pulmonary complications and multiple ischemia.

Keywords : Covid19 infection, ischemia, Senegal.

Résumé

Introduction : L'infection à Covid 19 est une pathologie grave qui peut mettre en jeu le pronostic vital à court terme en raison de ses nombreuses complications.

Patient : Nous rapportons l'observation d'un patient de 61 ans sans facteur de risque cardiovasculaire admis pour la prise en charge d'une ischémie multifocale survenue deux semaines après une infection à covid 19. Il a bénéficié d'une prise en charge chirurgicale, d'une anticoagulation efficace et l'évolution a été favorable.

Conclusion : le covid 19 met en jeu le pronostic vital en raison de ses complications pulmonaires et de ses

ischémies multiples.

Mots-clés : infection à covid19, ischémie, Sénégal.

Introduction

Infection with SARS-CoV-2 leads to coronavirus disease 2019 (Covid-19). It is a pathology that preferentially affects the respiratory system, which can quickly become life-threatening with very severe respiratory failure. Currently with better knowledge of the pathophysiology, several studies suggest that COVID 19 can cause coagulopathy (disseminated intravascular coagulation) (DIC) [1] and be life-threatening. It is a systemic disease that can be responsible for vasculitis and thromboembolic disease affecting small [2] and large arterial trunks [3]. However, few studies have been carried out in our continent.

Clinical case

We report the observation of a 61-year-old patient who presented with 2019 coronavirus disease two weeks before his admission to our department (chest-computed tomography in favor (Figure 1e) and RT-PCR positive), treated and declared cured (RT-PCR

negative). He was received in a picture of sudden onset, intense, insomnia pain in the left upper limb of a burning type involving the fingertips, associated with tingling-type paresthesias and a feeling of coldness. Clinical examination of the left upper limb at the entrance revealed an onset of pupal cyanosis of the 4 fingers sparing the thumb, paleness of the fingers with a skin recoloration time greater than 3 seconds and a slight decrease in local heat. Axillary and humeral pulses were perceived, while radial and ulnar pulses were absent. Humeral arterial flow was present while radial and ulnar arterial flow were absent. There was no sensitive and motor disorder. Arterial Doppler ultrasound of the left upper limb revealed partial thrombosis of the left humeral artery in its distal portion extending to the ulnar and radial arteries which present a type 3b flow with the presence of an attempt at revascularization by collaterals. The CT angiogram of the left upper limb revealed a floating thrombus within the left subclavian artery, complete thrombosis at the bifurcation of the humeral artery with revascularization by collaterals of the ulnar and radial arteries and a probable embolic migration in the palmar arches (Figure 2). The EKG showed regular sinus rhythm and left ventricular hypertrophy with secondary repolarization disturbances. The cardiac Doppler ultrasound was normal. A Fogarty probe embolectomy of the subclavian, axillary, humeral, radial and ulnar arteries by approaching the crease of the elbow of the humeral artery was performed urgently bringing back multiple thrombi of different ages with obtaining a good flow. Postoperative heparin therapy was initiated with heparin sodium at 200 IU / KG / Day associated with continuous analgesia by electric syringe pump. Postoperatively, upper limb pain regressed markedly with the appearance of good radial and ulnar flow on pencil Doppler. Three days later, the patient presented with dizziness and narcolepsy. Neurological examination revealed dysarthria, isolated right central facial paralysis, and swallowing disorders. The cerebral magnetic resonance imaging had returned in favor of a multifocal ischemia constituted in the subacute phase predominant in the

territory of the left postero-inferior cerebellar artery (Figure 3) on subtotal occlusion of the left vertebral artery with ischemic cortico-subcortical lesions in sylvian (Figure 4) and left posterior cerebral territory (Figure 5). The NIHSS (National Institutes of Health Stroke Scale) score was 8 and the patient was put on heparin therapy at a curative dose (0.8 x 2 / day) then on rivaroxaban 20 mg per day. Motor physiotherapy has also been introduced. The neurological evolution is good with amendment of dysarthria, swallowing disorders and dizziness.

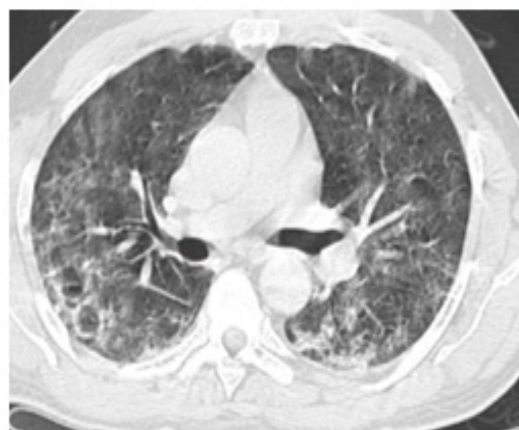


Figure 1: Ground-glass opacities



Figure 2: Complete thrombosis at the bifurcation of the humeral artery.

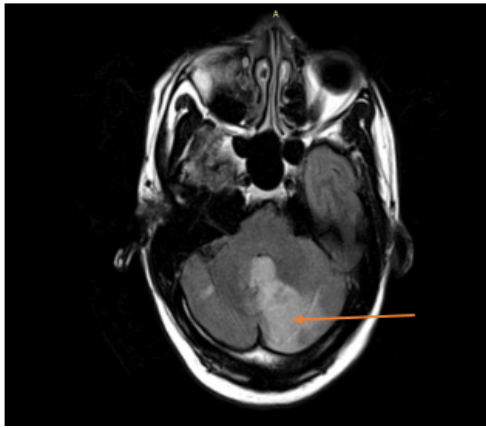


Figure 3: T2 FLAIR sequence showing ischemia of the postero-inferior cerebellar artery.

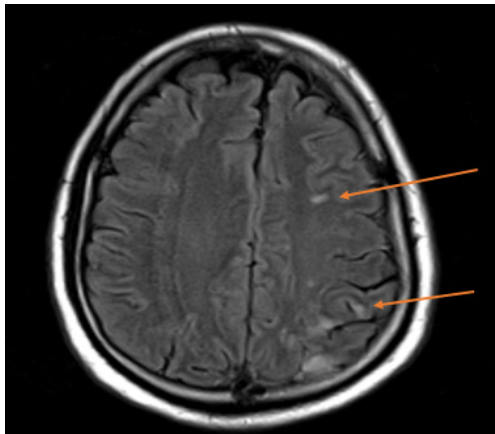


Figure 4: T2 FLAIR sequence showing ischemia of the middle cerebral artery.

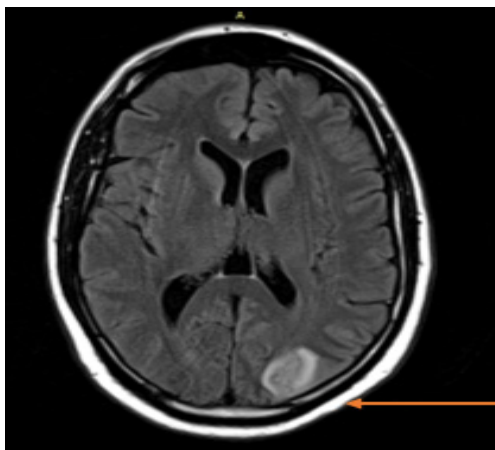


Figure 5: T2 FLAIR sequence showing ischemia of the posterior cerebral artery

Discussion

Coagulation disturbances are frequently described in patients with 2019 coronavirus disease as well as thrombotic clinical events. These clinical manifestations are diverse and sometimes not very obvious. There is no study reporting the incidence of

stroke related to COVID 19 in our continent during this pandemic period. Some studies show respective incidences of 5 and 5.7% [4] [5]. In the study by Li and al [4] the patients had significant cardiovascular risk factors such as diabetes, high blood pressure, obesity or smoking. Our patient had no cardiovascular risk factors other than age and male sex.

In a French multicenter prospective study conducted in intensive care unit involving 150 patients, 18% of major thromboembolic events were observed, including 2 ischemic cerebrovascular accidents and ischemia of the lower limb [6]. Arterial ischemia of the upper limbs is poorly described and is rarely isolated [7].

Most often they are in the context of multiple ischemia as in the case of our patient.

Coagulopathy in Covid 19 is multifactorial. We note an increase in markers of inflammation namely C-Reactive Protein, ferritin, interleukin 6 (IL-6) and D-dimers. Thrombocytopenia is a significant factor in coagulopathy associated with SARS-CoV2 infection and is associated with a 5-fold increased risk of severe form [8]. The circulating anticoagulant is described as a prothrombotic factor. Some authors report the presence of antiphospholipid antibodies in some patients with COVID 19. Y. Zhang and al [7] report 3 cases of ischemic stroke, including one with acute ischemia of the leg, associated with the presence of antibodies anti-phospholipids without a formal link having been established.

Arterial ischemia is one of the complications associated with covid 19. ischemia can affect all arteries through vasculitis and disseminated vascular coagulation. Anticoagulation was important in the management of our patient.

Conclusion

COVID 19 is a very dangerous respiratory infection with numerous extrapulmonary manifestations giving it its multisystemic character. One of the serious and potentially life-threatening complications is multiple ischemias.

Authors' contributions :

All authors participated in the development of the article. The authors declare that they have read and approved the manuscript.

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Conflict of interest : None

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