Acute Right Middle Cerebral Artery Stroke and Bilateral Carotid Artery Dissection in a One-Week Postpartum Patient with COVID-19 Infection.

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Introduction

- Coronavirus Disease 2019 (COVID-19) causes a hypercoagulable state that can increase a patient's risk for a venous or arterial thromboembolic event[1]
- Seen in healthy young patients[1–4]
- Incidence of stroke in
  Hispanic and African American > > Caucasians[5]

Clinical Presentation

- 41yo Hispanic, G8P2062, s/p uncomplicated SVD with neuraxial analgesia at 39 2/7 weeks was discharged home on PPD 2
- Onset of acute left hemiparesis + left-sided facial droop with mild rhinorrhea on PPD 7

- PMHx: AMA, GDM, Obesity (BMI-33 kg/m²), and 6 prior spontaneous abortions (negative for antiphospholipid syndrome)
- Completed COVID-19 vaccination course 2 months prior
- Vital signs on admission: BP 141/67 HR 73 RR 20 SpO2 97%
- National Institutes of Health Stroke Scale Score of **16**

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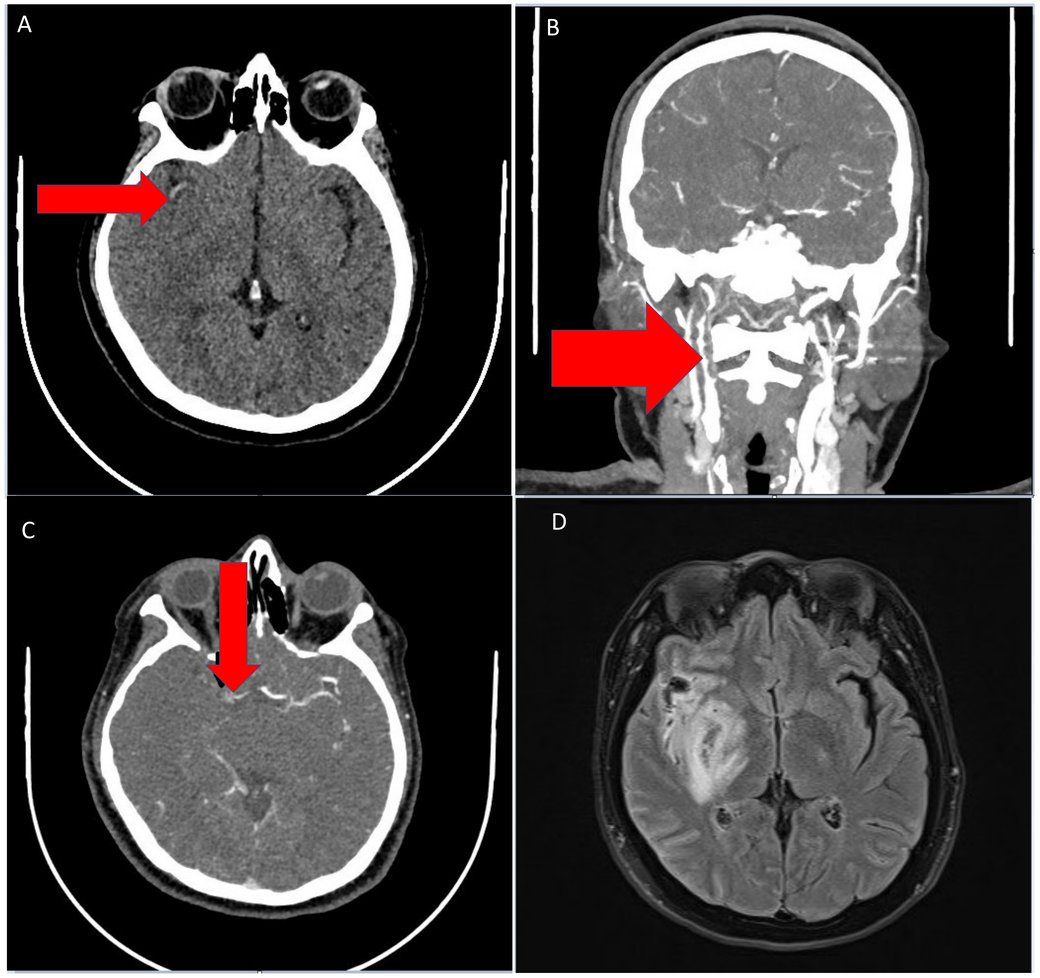
Labs

- Significant labs: **COVID+**, **hemoglobin A1C of 5.8%, cholesterol 278**, **low-density lipoprotein 173**, and triglycerides 159.
- Transthoracic echocardiography, including bubble-study, was normal.

Imaging

- **Image A:** CT head shows right MCA thrombus.
- **Image B:** CTA head and neck showing long segment non-calcified luminal irregularity and stenosis of the right internal carotid artery with greater than 90% luminal stenosis, and similar, though less severe findings in the left internal carotid artery.
- **Image C:** CTA head shows right MCA cutoff.
- **Image D:** MRI showing right MCA infarct with subarachnoid hemorrhage in the right basal ganglia.



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Patient Outcome

- Management included:
  - Intravenous alteplase in the emergency department
  - Interventional radiology (IR) guided thrombectomy under general anesthesia; however, this was technically challenging, and the right MCA were not able to be completely revascularized
- Patient developed an acute right frontotemporal subarachnoid hemorrhage during the procedure
- She was discharged home on therapeutic anticoagulation after a one-week hospitalization.
- Continued to have left-sided weakness and received outpatient rehabilitation services.

Discussion

- Spontaneous carotid artery dissections in patients with COVID-19 are thought to be caused by vascular endothelial dysfunction and coagulopathy[2–4].
- Mechanical thrombectomy for these cases can be very challenging, resulting in limited reperfusion[1].
- The puerperium period is also well-established to cause a hypercoagulable state with a higher incidence of thromboembolic events[6].

References

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